

University of Memphis

University of Memphis Digital Commons

Electronic Theses and Dissertations

2019

SAUDI ESL/EFL LEARNERS METACOGNITIVE ONLINE READING STRATEGIES IN ARABIC AND ENGLISH

Hamad Mohammed Alluhaydan

Follow this and additional works at: <https://digitalcommons.memphis.edu/etd>

Recommended Citation

Alluhaydan, Hamad Mohammed, "SAUDI ESL/EFL LEARNERS METACOGNITIVE ONLINE READING STRATEGIES IN ARABIC AND ENGLISH" (2019). *Electronic Theses and Dissertations*. 2414.
<https://digitalcommons.memphis.edu/etd/2414>

This Dissertation is brought to you for free and open access by University of Memphis Digital Commons. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of University of Memphis Digital Commons. For more information, please contact khgerty@memphis.edu.

SAUDI ESL/EFL LEARNERS' METACOGNITIVE ONLINE READING STRATEGIES
IN ARABIC AND ENGLISH

by

Hamad Alluhaydan

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

Major: English

The University of Memphis

August 2019

Copyright© Hamad Alluhaydan
All rights reserved

Acknowledgments

I am deeply thankful to almighty Allah for granting me the patience, perseverance, and ability to complete this dissertation.

I am sincerely grateful to my supervisor, Dr. Teresa Dalle, for her support, assistance, and guidance. I would also like to thank my other committee members: Dr. Emily Thrush, Dr. Lyn Wright, and Dr. Christopher Hastings. Without their insightful and valuable feedback, this study would not have been possible.

I am eternally in debt to my family, especially to my father and my mother for their endless support and prayers. I also owe a special thanks to my friends and colleagues at the University of Memphis who encouraged and supported me during this journey.

Abstract

Alluhaydan, Hamad. Ph.D. The University of Memphis. August 2019. Saudi ESL/EFL Learners' Metacognitive Online Reading Strategies in Arabic and English. Major Professor: Teresa Dalle, Ph.D.

Historically, Saudi readers have demonstrated poor metacognitive reading skills and literacy practices. This study investigates what online metacognitive reading strategies ESL and EFL Saudi learners believed they used more frequently in Arabic and English. It also shows perceived differences between Saudi male and female ESL/EFL learners in their strategy use while reading online texts. The lack of practice reading in Arabic or English affects comprehension skills; less than 25% of participants felt they could answer reading comprehension questions in class. Male and female participants did not differ in their use of global, support, and problem-solving metacognitive online reading strategies when language was not taken into consideration. Similarly, EFL/ESL and Arabic speakers did not differ in their use of metacognitive strategies when gender was not considered. However, male participants reported using global, support, and problem-solving strategies more often than women when reading in English, while participants did not differ by gender regarding metacognitive strategies in Arabic.

Table of Contents

Chapter	Page
List of Tables	vii
1 Introduction	1
Hypotheses and Research Questions	8
Study Organization	8
2 Literature Review	10
A Brief History of Literacy in Saudi Arabia	10
The Reading Process	12
L1 vs L2 Reading Comprehension	14
Online Reading (New Literacy)	18
Metacognition	22
Metacognitive Reading Strategies	25
Arabic and Metacognitive Reading Strategies	30
Gender and Metacognitive Reading Strategies	32
ESL and EFL Metacognitive Reading Strategy Research	33
3 Methodology	39
Hypotheses and Research Questions	39
Research Design	40
Instruments	40
Survey	40
Interview	40
Recruitment	41
Procedure	42
Participants	43
EFL Group	43
ESL group	44
Data Analysis	45
Quantitative Data Analysis	45
Qualitative Data Analysis	46
4 Results	47
Reliability of the Instrument	47
Background Reading and Literacy Comprehension Information	47
Metacognitive Reading Strategy Use Based on Language and Gender	52
Metacognitive Reading Strategy Use Based on Learning Background and Gender	54
5 Discussion	56
Background Reading and Literacy Information in Saudi Culture	56
Online Reading and Metacognitive Reading Strategies	64

	Metacognitive Reading Strategy Use Based on Learning Background and Gender	65
	Metacognitive Reading Strategies Based on Language and Gender	67
6.	Conclusions	71
	Implications of the Study	71
	Limitations of the Study	72
	Future Research Directions	73
	Study Summary	73
	Conclusion	74
	References	76
	Appendices	
	A. Interviews	104
	B. Online Arabic Metacognitive Reading Strategies Survey	119
	C. Consent Form	121
	D. IRB Approval	125

List of Tables

Table	Page
1. Survey Procedure Sections	42
2. Interview Description	43
3. Overall Self-Evaluation of EFL Group's English Proficiency Levels	44
4. Overall Self-Evaluation of ESL Group's English Proficiency Level	45
5. Participant Demographic Data	45
6. Free Time Spent Reading in Arabic and English	49
7. Class Reading Comprehension	50
8. Devices Used for Online Reading	51
9. Strategy Use by Gender and Language	53
10. Tests of Between-Subjects Effects for Gender and Language	53
11. Strategy Use by Gender and Learning Background	55
12. Tests of Between-Subjects Effects for Gender	55

Chapter 1

Introduction

English and Arabic are vastly different in phonological, morphological, semantic, and syntactic structures; thus, it stands to reason that reading processing may differ as well.

Researchers have shown that successful academic reading requires not only adept decoding skills, such as word recognition and phonological knowledge, but also awareness and employment of a range of reading comprehension strategies (Grabe & Stoller, 2002). Early reading strategy studies have largely focused on the classifications of reading comprehension strategies. Block (1986) distinguished between “general” and “local” strategies. Examples of general strategies include focusing on main ideas and taking into account the structural features of the text. Local strategies are those that focus on linguistic features like word meaning and sentence structure.

A more recent scheme (Phakiti, 2003) distinguished between cognitive and metacognitive strategies. Cognitive strategies involve the reader attending to the language of the text being read, while metacognitive strategies involve the reader monitoring his or her own comprehension while reading. Oxford (1990) described metacognitive strategies as behaviors undertaken by readers to organize, arrange, and evaluate their own learning. These strategies include directed attention and self-assessment, organization, setting goals and objectives, and seeking opportunities for practice.

The reading process is a very complicated one because it involves many multifaceted factors, such that the presence or absence of any of these factors can directly cause the success or failure of learners (Taj, Ali, Sipra, & Ahmad, 2017). This is especially true with learners of English as a foreign language (EFL) or English as a second language (ESL). ESL learners live

where English is spoken as a native language by the wider community, such as the UK, Canada, US, and Australia, while EFL students study where English is not the main native language spoken by the wider community (Anderson, 2004). Reading comprehension is a complex process, and most students experience challenges when trying to extract meaning from a text (Grabe & Stoller, 2002). It has often been highlighted that it is challenging to be a very proficient second language (L2) reader (Grabe & Stoller, 2002). Even when L2 learners possess adequate language competency, most face difficulties understanding what they read, particularly in textbooks (Snow, 2002).

Alsamadani (2009, 2011) found Saudi EFL students encountered tremendous comprehension issues in reading. Alrabai (2016), who also examined factors underlying low achievement of Saudi EFL learners, indicated that as a result of inefficient teaching, students struggled with reading comprehension. In such cases, Saudi EFL students might not have the capacity to extrapolate text inferences, even though they have read the subheadings and core ideas. L2 students may also be less capable of managing their reading efficiently, as they have not acquired suitable or efficient metacognitive reading strategies. There might be several reasons for this behavior, including that they may not be aware of the metacognitive strategies, they may be uncertain about how metacognitive strategies can help them to learn, or they could be unsure about which metacognitive strategies should be employed with which text.

Many studies have demonstrated that students with a history of reading difficulties also exhibit poor reading skills (e.g., Bergey, Deacon, & Parrila, 2017; Corkett, Parrila, & Hein, 2006; Deacon, Parrila, & Kirby, 2006; Deacon, Cook, & Parilla, 2012; Kemp, Parrila, & Kirby, 2009). For example, Deacon et al. (2012) found that college students who suffered from reading challenges received word identification and timed reading comprehension scores that were three

grade levels below those of peers who did not have a history of reading challenges. Ahmadi and Hairul (2012) went further in asserting that reading comprehension should be stressed on many different levels of education, because it is such a crucial tool during the EFL/ESL learning process. A review by Wang, Heartle, and Wallberg (1990) revealed metacognition was a better predictor of learning outcomes than cognitive and motivational student characteristics. In addition, they found metacognitive reading strategies were significantly associated with stronger learning achievement.

Many scholars have defined metacognitive processes as higher-order executive skills that depend on one's knowledge of cognitive processes and aid in management of one's own learning through planning, monitoring, and evaluating (e.g., Alsheikh, 2014; Chamot & O'Malley, 1990; Iwai, 2011; Meniado, 2016; Oxford, 1990). When applied to reading, metacognitive strategies are defined as "deliberate, conscious procedures" (Sheorey & Mokhtari, 2001, p. 433) that include self-regulating and self-monitoring activities, such as making decisions or judgments about the cognitive requirements of a reading task (Baker & Brown, 1984a).

With the rapid advancement of technology, online reading comprehension has become a crucial component for successful learning achievement, since portable Internet devices provide Saudi users with unlimited access to learning resources (Alshumaimeri, 2008). Researchers have investigated online influence on reading comprehension processes by examining reading comprehension or metacognition processes for paper texts compared to online or smartphone texts, in order to detect potential growth in the influence of technology on reading comprehension (Baron, 2015). Empirical studies have also investigated the difference in perception and full reading comprehension between paper reading and computer screen reading (e.g., Delgado, Vargas, Ackerman, & Salmerón, 2018; Hermena et al., 2017; Hou, Rashid, &

Lee, 2017; Mangen, Walgermo, & Brønneck, 2013; Margolin, Driscoll, Toland, & Kegler, 2013; Rockinson-Szapkiw, Courduff, Carter, & Bennett, 2013; Roschke & Radach, 2016; Xu, Chen, Sun, & Huang, 2017). Some studies have indicated that comprehension is superior with paper reading (e.g., Kim & Kim, 2013; Mangen et al., 2013; Rasmussen, 2014), while other studies have questioned this perspective, claiming there is no difference between screen reading and paper reading (e.g., Margolin et al., 2013; Porion, Aparicio, Megalakaki, Robert, & Baccino, 2016; Rockinson-Szapkiw et al., 2013). In addition, online reading may require special skills and strategies due to the nature of sophisticated online texts. Herold (2014) described the relationship between metacognition and online reading strategies by noting that problem-solving strategies are widely used in online reading in order to review and overcome online reading comprehension struggles. Learners' ability to navigate different kinds of texts is considered to be a part of these metacognition awareness strategies.

Metacognitive online reading strategies have not been widely studied, especially for Arab ESL/EFL learners who read in two languages when they use the Internet. Various studies have shown that Arab students struggle with reading skills even though they may perform well in other language skills (e.g., Alateeq, 2016; Alharbi, 2019; Alrabai, 2016; Al-Seghayer, 2014). The researcher also noticed from his previous study of Saudi contrastive rhetoric that most participants' writing issues derived from problems with reading skills. Relatively few studies to date have examined this issue, especially from a cultural or gender-based perspective.

Metacognitive reading strategies cannot be fully understood without understanding the reading culture, especially when one is dealing with a culture whose literacy has not been well studied. Culture plays a significant role in shaping or creating cognitive and perceptual skills

(Street, 1993). Hence, we need to understand the practices in Saudi reading culture in order to study Saudi metacognitive online reading strategies.

One particularly relevant aspect of Saudi culture is gender. Saudi Arabia has gender-based education, which may influence student metacognitive strategies. To that end, very few studies have examined Saudi or Arab gender-based learning differences (Al-Buainain, 2010; Abu Radwan, 2011; Alhaysony, 2017; Al-Otaibi, 2004; Teh, Embi, Yusoff, & Mahamod, 2009). Therefore, examining gender as a factor may reveal more information about important differences in how male and female Saudi learners apply metacognitive reading strategies.

Being a successful L2 reader is the result of combining reading capability and first language (L1) proficiency (Carrell, 1991; Koda, 2007). Further, a link has been shown between higher L1 reading proficiency and higher L2 reading literacy (Royer & Carlo, 1991). Hence, the choice of ESL/EFL reading or comprehension strategies is in some ways connected to language proficiency because less proficient readers apply fewer higher-order thinking strategies but may use word recognition and word-for-word translation strategies extensively (Auerbach & Paxton, 1997; Malcolm, 2009). This means that L2 learners who struggle with reading are more likely to use reading strategies to compensate.

Studies have also indicated that the effective use of reading strategies in the L1 can compensate for L2 language weaknesses (Carrell, Pharis, & Liberto, 1989). Some reading strategies, such as translation, are widely used in L2 reading. The Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002) has been widely used to examine the nature of L2 reading strategies. Studies have concluded that reading strategies are applied more by L2 learners when reading (Alhaqbani & Riazi, 2012; Feng & Mokhtari, 1998; Malcolm, 2009; Mokhtari & Reichard, 2004; Sheorey & Mokhtari, 2001; Zhang, 2009) and are employed more

in L2 reading than in L1 reading (Alhaisoni, 2012; Alsheikh & Mokhtari, 2011; Kong, 2006; Mokhtari & Reichard, 2004; Sheorey & Mokhtari, 2001). According to Shaw and McMillion's (2008) linguistic interdependence hypothesis, language skills, especially reading skills, could be positively transferred from the L1 in a way that facilitates L2 reading. This means better L1 readers (with better L1 comprehension) could be expected to be better L2 readers (with better L2 comprehension). A few studies have investigated Saudi metacognitive reading strategies (e.g., Alhaisoni, 2012; Al-Otaibi, 2004), specifically L1 (Arabic) and L2 (English) metacognitive reading strategies (Alsheikh & Mokhtari, 2011), but none have explored online metacognitive reading strategies.

Because of the possibility of transferring reading or metacognitive strategies from the L1 to the L2 when reading online texts, the present study explored L1 and L2 metacognitive reading strategies to determine if there is evidence of such a transfer. Various studies have examined this issue, but none have focused on the effect of Saudi educational background on ESL reading, according to the perspectives of highly and less proficient readers.

Additionally, there is a tendency for people in Saudi Arabia to blame the Saudi learning environment and its language policy, curricula, and teaching methods for learners' lower literacy skills (Alrabai, 2016). Saudis frequently compare their language and literacy skills to the skills of those who study outside the country (Alrashidi & Phan, 2015). By comparing metacognitive strategy utilization in ESL versus EFL students, this study will add to the current understanding of the issue.

The present study investigated the online metacognitive reading strategies of Saudi EFL students at Saudi colleges and universities as well as Saudis ESL students pursuing a degree in a native-English environment, such as the US, UK, Australia, and Canada. At the same time, the

study examined EFL and ESL Arabic/English online metacognition reading strategies to provide more information about the current comprehension strategies used by Saudis men and women and to verify the claim that studying abroad might influence comprehension strategies.

Findings of this study have far-reaching real-world applications. It is important for L2 teachers to be able to identify and comprehend the metacognitive reading strategies their students use during language activities. Some ESL reading teachers might assume that learners will use their L1 metacognitive reading strategies when they read in the L2, but in reality, learners may use a completely different set of strategies in the L2. This common assumption among teachers leads to inconsistency in expectations for what students understand from readings. Although there is an overwhelming number of studies on various aspects of second and foreign language reading (e.g., Alsheikh, 2009; Alsheikh & Mokhtari, 2011; Alshumaimeri, 2011; Arrastia, Zayed, & Elnagar, 2016), few studies have investigated the metacognitive reading strategies of successful and proficient Saudi readers (in Arabic and English). ESL researchers have also suggested that the metacognitive strategies of good learners, once identified and successfully taught, have considerable potential for enhancing the overall development of language comprehension skills. Taken together, the results of this study could be used to inform teaching practices and EFL/ESL curricula and improve L2 literacy for Arabic/English-speaking Saudis. This study offers a significant contribution to reading process literature because it reveals information about Saudi metacognitive reading strategies in an online environment. Furthermore, it is the first to highlight Saudi gender differences and learning background on the use of such strategies. It also investigated the impact of studying abroad on reading strategies due to experiencing new teaching and learning styles.

Hypotheses and Research Questions

The study formulated the following hypotheses:

1. Saudi men and women use different metacognitive strategies when reading academic material online.
2. Saudis who have studied where the native language is English use online metacognitive reading strategies more effectively than Saudis who have studied where the native language is Arabic.

The study sought to answer the following research questions:

1. Do Saudi L1 reading practices and the online reading environment affect reading comprehension skills?
2. Is there a difference in the use of metacognitive reading strategies when reading in an L1 as opposed to an L2?
3. Which online reading strategy categories are perceived as used more often in both languages?
4. Does gender influence the use of metacognitive strategies when reading academic material online?
5. Does English learning environment (ESL vs EFL) influence the use of metacognitive strategies when reading academic material online?

Study Organization

Chapter 2 reviews literature relevant to the study, including a cultural background, general reading comprehension issues, L1/L2 metacognitive reading strategies, Arabic online metacognitive strategies, and the influence of gender and learning background on these strategies. Chapter 3 explains the methodology. Chapter 4 presents the results in terms of reading

and literacy comprehension and use of metacognitive reading strategies based on language background and gender. Chapter 5 provides a detailed analysis and discussion of the findings. Chapter 6 concludes the study with implications for practice, limitations, and directions for future research.

Chapter 2

Literature Review

A Brief History of Literacy in Saudi Arabia

Many investigators have examined Saudi reading skills, but few have gone deeper to study reading culture as well. Saudi reading culture differs from other Arab cultures, such as Egypt or Iraq, because most Arab countries have education systems with a longer history. Furthermore, Saudi reading culture cannot be fully understood without considering the unique historical, social, economic, religious, and political context.

The roots of modern Saudi Arabia go back to the 18th century when the Arabian Peninsula was scarcely inhabited and had poor resources (Bowen, 2014). With a large desert, limited natural resources, and poor soil, there was no external interest in the region, unlike other Arab countries that were colonized by Western countries. As a result, the area that would become Saudi Arabia maintained its isolation and traditional systems, which were based on the Arabian tribal system.

Religion has long played a central role in social and educational life in Saudi Arabia because the first Saudi state was established in the early 18th century by a coalition of a tribal chieftain, Ibn Saud, and a religious leader, Muhammad ibn Abd al-Wahhab. Although there was no civil infrastructure, religious teaching was mandatory, and the newly formed Saudi state was deeply religious. Men and children had to attend classes in a mosque. Only religious teaching occurred in these classes, there was no systematic education, and all religious teaching was segregated based on gender. Thus, boys were able to attend lessons at a time when there was no basic civil life infrastructure, such as roads, schools, or government buildings (Al-Rasheed, 2010). In these classes, teachers essentially taught students how to recite the Quran and about

basic Islamic teachings (Al-Rasheed, 2010). In two mosques, scholars also taught different subjects, including literature, Arabic, and history, and other mosques taught Arabic writing and reading, especially the Quran. These mosques had a more advanced system where learners received a certificate, so they could teach in other small mosques. This system persisted throughout the first and second Saudi states.

The third and modern Saudi state was founded in 1932 (Alkhazim, 2003), but the first education directory was established in 1925, before the unification of the kingdom (Alrashidi & Phan, 2015). This directory showed the importance of education to the Saudi government and provided the much-needed first step to establish a national education infrastructure (Alsharif, as cited in Alrashidi & Phan, 2015). In 1930, the first public schools were opened, and the Directorate of Saudi Education, responsible for opening public schools throughout the country, was founded two years later (Alhujailan, as cited in Sofi, 2015). From that date onward, boys were enrolled in public schools, while girls' schools opened in 1960 (Alrashidi & Phan, 2015; Wiseman, 2010). In the beginning, there was strong religious opposition to female education in such schools, but this opposition faded in time.

Foreign language teaching (FLT) was launched in Saudi public schools in 1942, with EFL classes. French classes were implemented in 1953 in all Saudi public schools as well, but in 1970, they were discontinued, leaving English the only foreign language taught in public schools (Alharbi, 2019; Sofi, 2015). EFL classes started in middle school with 12 45-min sessions per week (Alharbi, 2019). Prior to 2000, EFL was not taken seriously by learners, but around that time, as a result of globalization, English started to capture the attention of Saudis since it contributed to career advancement. Since 2000, Saudis have thus generally had more positive attitudes toward learning English (Sofi, 2015). Another reason for this change in Saudi attitudes,

was the change in education policy at the end of the 1990s, when English became highly valued in the education system (Alharbi, 2019).

Saudi literacy teaching faces critical challenges. First, higher education has only existed in the country for around six decades (Onsman, 2011). Early on, some teachers were unqualified because anyone who had finished high school before 1975 could teach in public schools. There were, however, more qualified Arab and international public-school teachers. However, even those teachers could not teach literacy effectively because they did not understand the literacy needs of the community. Likewise, reading materials were developed by foreigners, who did not fully understand Saudi literacy needs. For instance, materials might contain stories about visiting a zoo or traveling by train, when few students encountered these experiences in their lives.

Saudi Arabia has gone through vast social, cultural, and economic changes in the last few decades. Changes in lifestyle have created opportunities as well as obstacles for literacy, and new technology has dramatically changed literacy by providing greater access to resources. Generation gaps and family literacy practices cannot be ignored when investigating Saudi reading culture.

The Reading Process

Research into L1 and L2 reading has flourished over the last decade. Reading research derives from many academic fields, including psycholinguistic theories of L2 reading, applied linguistics, and cognitive psychology. In this section, reading skills research and theories are presented, followed by a description of the research that pertains to the general understanding of reading processes.

Clear elucidation of what happens during the actual process of reading may improve how reading is taught. Several researchers have described the process of reading through the crafting

of specialized definitions, while others have interpreted the reading comprehension process by investigating metacognitive reading strategies to recognize the most practical strategies employed by students. The concept of reading as a process that begins with letters and sounds was once the dominant paradigm. This view has been referred to as the text-driven or bottom-up model (Gough, 1972). It is composed of a phonics-based approach that describes the process of learning how to read as proceeding in a sequential manner, from letters to sounds to words, culminating in the meaning of words. Others have defined the reading process in simpler statements, for example, “Reading is a process of receiving and interpreting information encoded in language form via medium of print” (Urquhart & Weir, 1998, p. 22). Others have explained the comprehension process as occurring “when the reader extracts and integrates various information from the texts and combines it with what is already known” (Koda, 2005, p. 4). Both definitions consider reading from different perspectives.

Consequently, a fully scientific definition of reading comprehension has yet to be articulated; however, most researchers have defined the process required for fluent reading (Grabe, 2009; Hudson, 2007; Koda, 2005). Proficient reading must occur with a purposeful context, and when the processing components are well applied in a text, there will be both rapid and successful reading and comprehension. Hence, a good L1 reader will likely be able to read from 200 to 300 words per min, according to the purpose of reading (Grabe, 2009). This perspective means various reading processes are involved in comprehension and need to be coordinated and implemented automatically (Breznitz, 2006).

Reading is also viewed as an interactive process. Many of the processes involved in reading are synchronously activated. As we recognize words and actively maintain them in our working memories (Baddeley, 2007; Baddeley, Eysenck, & Anderson, 2009; Grabe & Stoller,

2013), we concurrently analyze sentence structures to develop the closest logical clause-level meanings, cognitively establish a core idea for text comprehension, synthesize text information, monitor comprehension, and so on. It is the effective combination of all these skills that likely results in successful comprehension. This process also reflects the true complexity of the text comprehension process in reading (Grabe & Stoller, 2013).

Overall, reading is not just scanning or receiving information; it is a more multifaceted procedure that includes receiving, processing, comprehending, synthesizing, and much more. Therefore, it is clear that no single statement can aptly describe the complexity of reading. There is consensus that readers employ both background knowledge and information pertaining to word structure to understand a text. For instance, a text discussing global warming may require the reader to use his/her linguistic knowledge to understand word meaning in addition to using background knowledge about the topic to comprehend the text. Another student might use deeply structured systems, such as semantic knowledge, or meaning and vocabulary, to decode the same unknown word as they might find that choice easier. Therefore, reading is a process that is often constructed by the actual reader and thus may not be easily archived or interpreted.

L1 vs L2 Reading Comprehension

It has been established that L1 reading differs from L2 reading (Grabe & Stoller, 2013; Koda & Zehler, 2008), even though some theories tend to generalize the reading process across all languages (Perfetti & Zhang, 1995). These differences, according to Grabe and Stoller (2013), involve vocabulary, metalinguistic issues, grammar, discourse, orthography or writing system, and metacognitive issues. These differences have been the most extensively studied aspects of reading development and include varying amounts of lexical, grammatical, and discourse knowledge at early stages of reading; greater metacognitive and metalinguistic awareness in L2

settings; diverse linguistic differences across any two languages; varying L2 proficiency as a basis or beginning for L2 reading; varying language transfer influences; and interaction influences from working with two languages. L2 learners are required to expand their linguistic acumen, as they deal with transfer impacts and learn to implement L2 resources (e.g., translation, glosses, bilingual dictionaries) and other related information (Koda, 2005). In addition, L2 readers learn the L2 as dual language processing systems.

Reading researchers point to the following fundamental differences that distinguish L1 and L2 reading: 1) prior reading experience of the L2 reader, 2) L2 reading being cross-linguistic, and 3) reading skills evolving before oral fluency in the target language can be achieved (Koda, 1994). Overall, these three basic differences are the starting point for much of the current L2 reading research. These factors also create the basic configuration for L2 reading models and are used to define the precise parameters of L2 research.

A number of studies have investigated the impact of transfer at various ability levels on processes and the use of different knowledge resources (e.g., Cook & Bassetti, 2005; Koda, 2007; Koda & Reddy, 2008; Koda & Zehler, 2008). A number of elements impact L2 reading ability (Block, 1992). For instance, Langer, Bartolomé, Vásquez, and Lucas (1990) found that when bilingual Spanish children encountered difficulties in reading English, they tended to employ their Spanish knowledge as support. Researchers who investigated the metacognitive reading strategies used by Chinese students found participants utilized more strategies when reading English than when reading Chinese (Feng & Mokhtari, 1998; Kong, 2006). When Stevenson, Schoonen, and Gloppe (2003) studied Dutch high school students, they had similar findings. Moreover, both native and non-native readers revealed their awareness of almost 30 targeted strategies, regardless of reading ability, and assigned the same order of importance to

the types of reading strategies being employed, according to Sheorey and Mokhtari (2001). Their study examined the differences in the reported use of reading strategies between native and non-native readers when reading academic texts. The participants indicated the importance of problem-solving strategies, global reading strategies, and support reading strategies.

Some studies have examined learners' L1 and L2 metacognitive reading strategies (e.g., Carrell, 1989; Malcolm, 2009; Sheorey & Mokhtari, 2001). Carrell (1989) investigated metacognitive reading strategy awareness in the L1 and L2 in two groups—Spanish speakers' metacognitive strategies in ESL and Spanish metacognitive strategies for English speakers—via self-evaluative questionnaires. The study found a negative correlation between bottom-up reading strategies and reading performance. However, advanced Spanish-speaking ESL students used top-down strategies more frequently, whereas learners of Spanish, especially low-level Spanish, tended to use bottom-up strategies.

Feng and Mokhtari (1998) examined the metacognitive reading strategies of Chinese students in L1 and L2 (English) texts. When students read difficult texts in the L2, they used problems-solving and support strategies. Malcolm (2009) examined the awareness of 160 Arab-speaking medical students studying in English and discovered significant differences between their use of metacognitive strategies, specifically translation strategies used from the L2 (English) to the L1 (Arabic) among those with low English proficiency. The study also found first-year learners used more translation than multiple-year learners.

Alsheikh (2009) studied Arabic speakers' metacognitive reading strategies in the L1 (Arabic) and L2 (English). Arabic speakers tended to use both problem-solving and support strategies to read texts in the L2 more than in the L1. Beginner and intermediate levels of reading may be influenced by transfer as interference. This means that when L2 students were asked to

read (what was for them) difficult material, they depended on any resources available to make sense of the text. These students' strongest resources are their L1 language abilities, particularly at the L2 beginner levels, which slows the comprehension process (Grabe & Stoller, 2013).

Hence, interference between L1 and L2 knowledge resources slows comprehension because what can be applicable in the L1 might not be applied to the L2. It is also assumed that whenever L2 resources provide sufficient support to carry out certain comprehension tasks, reading students will abandon their L1 resources in favor of L2 resources (Grabe & Stoller, 2013; Koda, 2007).

Generally, L1 comprehension researchers claim that when learners acquire cognitive and metacognitive skills, those skills are transferable to other situations with similar cognitive tasks (Grabe & Stoller, 2013; Urquhart & Weir, 1998). Several researchers have explained that many linguistic and metalinguistic factors are transferred from the L1 to the oral and written forms of L2 production (Koda, 2007; Muljani, Koda, & Moates, 1998; Urquhart & Weir, 1998). There are thus high correlations between L1 and L2 reading competence, according to assessment studies completed on bilingual education (Cummins, 1991; Troike, 1978). There are two major perspectives in this transfer research. One is based on the presupposition that reading is universal (Goodman, 1973), while the other espouses the opinion that reading involves language-specific processes. Universal reading is the more popular perspective because most transfer research has taken place within a universal framework with a concentration on two topics: 1) the interrelationship between L1 and L2 competence and 2) the conditions that inhibit or facilitate the transfer of reading skills from L1 to L2 (Koda, 2005).

Overall, the transfer issues from L1 to L2 reading that are often explored by researchers examine the effect of L1 linguistic, strategic, and content knowledge on L2 performance and whether this transfer is positive or negative (Koda & Reddy, 2008; Koda & Zehler, 2008;

Urquhart & Weir, 1998). L2 research oftentimes takes into account the role of L1 reading skills, metacognition, and any underlying cognitive universals when explaining L2 reading development. Most L2 reading researchers view L2 readers as learning to read in two languages. Moreover, L2 research frequently examines the issue of an L2 threshold, which becomes a unique L2 issue. Finally, L2 research investigates cultural factors and special instructional sources that may influence L2 reading development (Grabe & Stoller, 2013). Prior to discussing the current research on metacognitive reading strategies, it is important to understand the differences between L1 and L2 reading processes. These differences underlie different aspects of the research, including why some studies focus on certain aspects of L2 reading that might not be addressed for L1 reading.

Online Reading (New Literacy)

The term “new literacy” was coined by Gallego and Hollingsworth (1992) and represents many different perspectives (cf. Baker, 2010). This concept proposes that literacy is rapidly changing as a field as new information and communication technologies emerge; changes such as additional discourses, social practices, and different skills are required to make effective use of these technologies (Baker, 2010; Gee, 2007; Lankshear & Knobel, 2006). Moreover, the Internet is constantly remaking literacy as additional technologies for literacy rapidly appear online (Leu, 2000). For example, online readers can locate a specific sentence from online text without reading the whole text.

The new literacy of online research and comprehension (Kingsley & Tancock, 2014; Leu, Kinzer, Coiro, Castek, & Henry, 2013) is one of the many theories of new literacy that have not been well examined. Initially, the term “online reading comprehension” was used (cf. Coiro, 2011; Coiro & Dobler, 2007; Henry, 2007; Leu, Kinzer, Coiro, & Cammack, 2004).

Unfortunately, the contradiction between online and offline reading comprehension within a new literacy context caused confusion. This issue has led to the implication that the two entities are completely distinct, whereas the evidence shows there is a complex mixture of both offline and online elements that occur during online reading (Coiro, 2011; Coiro & Dobler, 2007).

With the ongoing development of the Internet, more and more textual materials are now being processed onscreen (e.g., online newspapers, journals, magazines, Wikipedia articles, webpages in general, multimedia books, and tweets). As a result, new platforms for presenting these types of materials (e.g., iPad and Kindle) have emerged, offering new challenges and possibilities for readers (Alexander & Fox, 2004; Singer & Alexander, 2017). Features of digital literacy can place specific demands on readers' skills, such as the ability to read and learn information from graphic representations and strategic processing, and these strategies may not be combined easily with the processing of printed text.

Overall, researchers have verified that reading from a computer screen differs from reading a printed text (Bell, 2017; Dillon, 1994). First and foremost, it represents a new kind of literacy, and recent studies have tended to investigate the role of new literacy in L2 learning. Teachers in many parts of the world are dedicated to exposing their learners to authentic language for the topics they are learning in the language classroom, and the Internet has become a very useful tool for accomplishing this purpose. Therefore, there is an urgent need to examine the intersection of new literacy and L2 reading strategies to understand and teach new and better methods for learning.

Consequently, online reading has increasingly become an issue of discussion in the education and applied linguistic fields, and more specifically, in ESL/EFL. Current research has confirmed that contemporary literacy practices have begun to move off the printed page and onto

the screen, as more and more people are reading, writing, interacting, and communicating online rather than offline (Goldman, Braasch, Wiley, Graesser, & Brodowinska, 2012; Hartman, Morsink, & Zheng, 2010; Warschauer, 1999). This change shows that online text is increasingly usurping the position of printed text, which has had a tremendous effect on 21st century literacy practices in education.

Researchers have discussed the new challenges faced by L2 learners while working to enhance their reading abilities. The continuous transformations in text formats now require readers to be equipped with the latest skills for understanding new writing styles (Klingner, Artiles, & Barletta, 2006). Information digitalization has also altered language learning strategies. Now language learners must know how to effectively use the latest technologies for enhancing their reading and learning processes (Wright, 2015).

These studies also highlight the importance of updating traditional teaching strategies to keep pace with advancing technology. This technological integration within the language learning classroom has been supported by many researchers. However, new literacy within an advanced technological environment poses challenges as well. For example, active use of social media for language learning limits reading longer online texts, and L2 learners may face difficulty understanding the context of a text (Anderson, 2003).

Understanding the nature of the mental processes involved in online reading tasks is an under-investigated area. To be effective, reading teachers must structure a learning environment where thinking about what occurs during online reading will produce stronger learning skills, rather than concentrating their students' attention only on issues related to reading content.

In this new literacy theory literature, differences across mediums have been found in the speed of processing, text recall, and reading comprehension (Kerr & Symons, 2006; Leu et al.,

2004; Mangen et al., 2013). For instance, in a study that involved 72 10th graders in Norway who read text digitally or in print, Mangen et al. (2013) found that students who read print versions showed a higher score on reading comprehension than those who read digitally. Kerr and Symons (2006) examined the recall of 60 fifth graders in Canada who each read two passages, one digitally and one in print; participants recalled more from the print than the digital text. They attributed this difference “to disrupted mental maps of the text, which may be reflected in poorer understanding and ultimately poorer recall of presented material” (p. 5). However, a survey by Rideout, Foehr, and Roberts (2010) suggested that those who read print were less likely to multitask effectively than when they read digitally.

Although an early study, Dillon’s (1994) meta-review of students found the opposite: that reading comprehension was not negatively impacted and could indeed be improved via the computer medium. It thus seems logical to assume that the use of the computer as a research tool will not bring unwanted detrimental effects to the reading process. According to Bell (2017), reading from a computer allows readers to move easily between reading sections, and information is also more easily located. He also noted that the way we look at the screen when we read is different from reading a textbook due to the technical features of a computer (e.g., scrolling up and down easily and searching by words or pages). Hence, the manner through which we process reading from computer screens is not likely to be the way we process the same reading from textbooks. Still, this remains a controversial issue.

In light of this controversy in the literature, this study examined Saudi online metacognitive reading strategies to learn whether online reading processing was similar to printed text processing and how any differences might impact educators’ teaching methodologies. Gender differences were considered since the Saudi system of education is

segregated by gender, which might affect how students use metacognitive reading strategies. In addition, participants' language background (EFL, ESL) was considered to explore the effect of the learning culture on metacognitive strategy use.

Metacognition

A review of recent literature identified various studies that have highlighted the importance of metacognitive knowledge for successful L2 learning (Adesope, Lavin, Thompson, & Ungerleider, 2010; Goh, 2008). Metacognitive knowledge enables L2 learners to conduct successful self-evaluation and choose the most effective learning strategies for achieving their learning objectives (Melby-Lervåg & Lervåg, 2014). Language learners with strong metacognitive skills have a comprehensive understanding of their learning needs and can plan, monitor, and evaluate their learning process more effectively (Goh, 2008). Researchers contend that metacognitive knowledge is necessary to become a successful self-regulated learner. Today, educators are increasingly interested in exploring the potential of autonomous and self-regulated learning (Winne & Baker, 2013). This increased importance of self-regulated learning suggests that learners can enhance their metacognitive skills.

Researchers have used different terms to denote this metacognitive concept, including meta-learning, self-management, meta-mention, and meta-components (Raoofi, Chan, Mukundan, & Rashid, 2013). The concept has been defined differently by different researchers (i.e., Flavell, 1976; Georghiades, 2004; Swanson, 1990). Flavell (1976) defined metacognitive learning as the ability to understand one's cognitive products and processes. The concept was redefined by Flavell (1979) as people's self-awareness and understanding of their own cognition. This study identified definitions of metacognition from a review of all definitions that emphasized the importance of self-awareness and self-learning management.

Metacognitive awareness and metacognitive strategies are common constructs of the metacognition concept, where metacognitive awareness denotes an awareness of one's own learning needs and metacognitive strategies denote an individual's ability to self-manage and regulate the entire learning process (Flavell, 1976). On the same note, Brown (1987) mentioned that metacognitive strategies and metacognitive knowledge represent two unique and different components of metacognition. Oxford (2002) shared certain metacognitive strategies, such as the ability to relate newly acquired knowledge with old information, selecting wise learning strategies, and planning, monitoring, and assessing thinking patterns.

Effective metacognitive strategies allow the learner to gain conscious control over the whole learning process, including identifying learning needs, selecting effective strategies, evaluating the learning process, correcting mistakes, and modifying learning behavior as required (Raoofi et al., 2013; Ridley, Schutz, Glanz, & Weinstein, 1992). Flavell's (1979) metacognition model also supports these factors. However, that model divided these factors into four identifiable categories, including metacognitive knowledge, metacognitive experiences, metacognitive strategies/actions, and metacognitive goals/tasks. Studies have proposed that metacognition is fundamental across different language learning applications, including memorization, writing, reading, speaking, maintaining attention span, and social interactions (Iwai, 2011; Raoofi et al., 2013). All factors identified by Flavell's (1979) metacognition model may be relevant to the language learning process, specifically the mental language process.

Flavell's metacognition model emphasizes the importance of self-awareness and the ability to assess both strengths and weaknesses across different language learning dimensions (Iwai, 2011). Moreover, metacognitive knowledge refines the understanding of the nature and requirements of the learning task. Metacognitive experiences involve internal metacognitive

processing (Oxford, 2002), which includes the consciousness of uncertainty, failure, success, or satisfaction. Metacognitive goals and tasks indicate an individual's ability to outline the learning objectives of a cognitive enterprise. Actions or strategies are employed by students to accomplish their cognitive and metacognitive objectives (Meniado, 2016). Studies have shown that metacognitive learners who are consciously aware of their learning needs are more successful learners (e.g., Arrastia et al., 2016; Pei, 2014; Rahimi & Katal, 2012).

However, the existing literature also suggests that learners can face difficulty in enhancing their metacognitive awareness and making the most effective use of cognitive resources (Rahimi & Katal, 2012; Raoofi et al., 2013). More research is needed to guide learners on how they can use metacognitive strategies to control and monitor their thought patterns and determine whether their learning progress is adequate to accomplish the desired cognitive goals. The four categories identified by Flavell must also be integrated during the regulation and monitoring process (Iwai, 2011).

Following Flavell's model, reading metacognition attracted many researchers who examined the role of cognitive skills in reading comprehension. These researchers have explored the impact of metacognitive awareness on learning outcomes and achievement in different learning fields (Ghafournia, 2014; Rahimi & Katal, 2012; Tajedin, 2001). Studies have indicated that metacognition has a tremendous influence on learners and impacts the learning process and outcomes (Arrastia & Elnagar, 2016; Eilam & Aharon, 2003; Pei, 2014; Zimmerman & Schunk, 2001). For example, Tajedin (2001) found that improved metacognitive awareness enhanced students' performance through the implementation of metacognitive instructional techniques. Flavell (1979) also showed an overall positive influence of metacognition on learning in general. Flavell's discussion stresses the need to adopt metacognitive learning and teaching skills in the

language classroom. In addition, reading cognition researchers (e.g., Phakiti, 2003) usually differentiate between cognitive and metacognitive strategies. Cognitive strategies involve a reader's attending to the language of the text being read, whereas metacognitive strategies involve the reader's monitoring his or her own comprehension while reading.

Metacognitive Reading Strategies

Metacognitive reading strategies can be identified as a reader's ability to consciously monitor his/her reading process along with the ability to interfere and assess this process in the context of building reading comprehension (Başaran, 2013). Alternatively, metacognitive reading strategies refer to an individual's capability of monitoring his/her reading process overall, self-evaluating his/her own reading comprehension, and identifying drawbacks if necessary (Çöğmen & Saracaloğlu, 2010). One of the more specific definitions for metacognitive reading strategies was proposed by Hartman as "glancing, predicting, checking comprehension, clarifying, testing for comprehension, revising, summarizing, activating prior knowledge and connecting new knowledge with the former" (as cited in Asikcan & Saban, 2018, p. 24). To conclude, metacognitive reading strategies can be seen as any cognitive process strategy consciously conducted to assist in overall reading comprehension.

There is a positive relationship between metacognitive strategy awareness and higher reading comprehension, according to a number of practical studies (e.g., Block, 1992; Carrell, 1989; Garner, 1987; Olshavsky, 1976; Pressley & Afflerbach, 1995). These investigations revealed that print materials play an important role in determining the type of strategies used by learners during the reading comprehension process in their L1 or L2. Hence, advanced and sophisticated texts would require learners to implement more metacognitive strategies. Other researchers have confirmed that successful readers employ more metacognitive reading strategies

than unsuccessful readers do (e.g., Alsheikh, 2011; Block, 1992; Chamot & El-Dinary, 1999; Lau & Chan, 2003; Lau, 2006; Mokhtari, 2008; Mokhtari & Sheorey, 2008).

Many early cognitive studies pointed to the role of metacognitive awareness in reading comprehension in the L1 or L2. Indeed, strategic awareness and monitoring of comprehension processes are important aspects of skilled reading (Alsheikh, 2014). Awareness and monitoring are referred to in the literature as “metacognition,” which may be understood as knowledge of the readers’ cognition in the reading process and the self-control applied when reading to control and enhance comprehension (Ahmadi, Ismail, & Abdullah, 2013; Al-Sobhani, 2013; Hong-Nam, 2014; Kummin & Rahman, 2010; Magogwe, 2013; Memiş & Bozkurt, 2013; Phakiti, 2006; Pressley, Van Etten, Yokoi, Freebern, & Van Meter, 1998; Tavakoli, 2014; Yüksel & Yüksel, 2012; Zhang & Seepho, 2013). Overall, research has shown that both the “awareness and use of metacognitive reading strategies have positive and direct relationships with reading comprehension performance; thus, students who use these strategies perform better in reading proficiency tests / courses” (Meniado, 2016, p, 119).

In terms of reading metacognition, there are differences between metacognitive knowledge and metacognitive control processes. The first includes what learners know about cognition, whereas the second involves how learners utilize that knowledge to regulate actual cognition (Baker, 1991; Brown, 1987; Iwai, 2011). Accordingly, Brown (1987) stated that knowledge of cognition may be referred to as what one knows about one’s own cognition. Ahmadi et al. (2013) indicated the reading metacognition process typically consists of three types of metacognitive reading strategy awareness: 1) declarative knowledge, 2) procedural knowledge, and 3) conditional knowledge.

Declarative knowledge is knowing “about” things (Ahmadi et al., 2013). It is the

recognition of individual knowledge or information about one's knowledge as a learner, which also involves the factors that may affect one's performance. For example, research on knowledge about memory processes and meta-memory has indicated that learners can have knowledge about cognitive processes associated with memory. For example, learners may memorize some text information by connecting it to their knowledge background, such as connecting certain information about cars to specific car brands. Therefore, information will be easily remembered since it is directly connected to a car brand that learners are already familiar with.

Procedural knowledge refers to knowing "how" to do things (Veenman, 2005). It is knowledge related to the execution of procedural skills. Hence, skills are automatically used by individuals who have a high degree of procedural knowledge, and these individuals are likely to sequence reading strategies effectively and use dissimilar strategies to resolve problems (Meniado, 2016). For example, students who can automatically utilize topic sentences to look for the main ideas or automatically understand that the main idea is what a topic sentence is are applying a procedural metacognitive knowledge process.

Conditional knowledge is knowing when and why to apply different cognitive actions (Desoete, Roeyers, & De Clercq, 2003), such as when learners autonomously choose and apply certain strategies in reading comprehension without assistance from the teacher. This might be considered declarative knowledge about the relative utility of specific cognitive procedures.

In early studies of learning strategies, metacognitive strategies did not capture the attention of researchers. Hence, educators had only a general perception of metacognitive reading strategies. Metacognitive reading strategy studies started to become a topic of interest to many investigators after the 1990s (Oxford, 1990), and many scholars have defined metacognitive strategies as higher-order executive skills that depend on one's knowledge of

cognitive processes to manage learning through planning, monitoring, and evaluating (Alsheikh, 2014; Chamot & O'Malley, 1990; Iwai, 2011; Meniado, 2016; Oxford, 1990). When applied to reading, metacognitive strategies are “deliberate, conscious procedures” (Sheorey & Mokhtari, 2001, p. 433) that include self-regulating (planning) and self-monitoring activities (monitoring), such as making decisions or judgments (evaluation) on the cognitive requirements of a reading task (Baker & Brown, 1984b). More specifically, planning refers to choosing “appropriate strategies and the allocation of resources that affect one’s learning performance” (Schraw & Moshman, 1995, p. 354). Monitoring involves one’s recognition of comprehension and task performance. Anderson (2004) described cognition monitoring as the learners’ recognition of when they have to stop to do something because they do not understand. Evaluation refers to assessing the products and regulating the learning process because good learners must evaluate the efficiency of what they are doing (Nurfadhilah, 2017). According to Ilustre (2011), recognition cognitive reading processes can produce better reading comprehension.

Metacognitive reading strategies represent a broad area of study, although literacy researchers (e.g., Martinez, 2008; Mokhtari & Sheorey, 2002; Suharni, 2017; Yüksel & Yüksel, 2012) have attempted to define and categorize them to be able to teach and assess them. To more clearly assess metacognitive reading strategies, researchers have classified them into three categories: global metacognitive strategies, supporting metacognitive strategies, and problem-solving metacognitive strategies.

Global metacognitive reading strategies are also known as generalized or global reading strategies and assist in setting a reading stage, for example, setting a purpose for reading and previewing the text content (Martinez, 2008). This also includes any intentional, careful, arranged technique used by students in the reading process to control or manage reading

comprehension, such as previewing the text, observing its length and organization, or using tables and figures to assist in the comprehension process (Mokhtari & Sheorey, 2002).

Supporting metacognitive reading strategies refer to any strategy employed by readers to understand a text, such as using a dictionary, underlining, highlighting certain words, or taking notes (Mokhtari & Sheorey, 2002). Readers can get comprehension support by highlighting important sections to remember when they come back later or finding the meaning of an unknown word in a dictionary. Therefore, support strategies “provide the support mechanism aimed at sustaining responses to reading” (Suharni, 2017, p. 12).

Yüksel and Yüksel (2012) defined problem-solving strategies as any strategy that demands readers re-read and adjust reading rates, such as re-reading difficult texts to think about what has been read. These strategies are crucial since they make readers carefully re-examine the text before understanding it. Readers use these strategies when they encounter text comprehension problems. These strategies have been developed for the purpose of addressing problems that come from reading difficult texts (Mokhtari & Sheorey, 2002).

The most popular survey of online metacognitive reading is the Online Survey of Reading Strategies (OSORS), which was developed by Anderson (2003) and which adopted most of the survey items from Sheorey and Mokhtari (2001). Their Survey of Reading Strategies (SORS) examines reading strategies in post-secondary native and non-native speakers of English. The OSORS was developed by Anderson (2003) to include more cognitive reading items that could be used for examining reading metacognition.

The OSORS focuses on the use of metacognitive strategies within the context of academic reading (Anderson, 2003). It measures three categories of reading strategies: global reading strategies (16 items), problem-solving strategies (11 items), and support strategies (nine

items). First, it considers global reading strategies (GLOB), which can be thought of as either generalized or global reading strategies aimed at setting the stage for the actual reading act (e.g., setting a purpose for reading, previewing text content, predicting what the text is about). Second, it addresses problem-solving strategies (PROB), which are localized, focused problem-solving or repair strategies to use when problems develop in understanding textual information (e.g., checking one's understanding when encountering conflicting information, re-reading for better understanding). Finally, it includes support reading strategies (SUP), which involve using certain support mechanisms or tools to sustain the responsiveness to reading (e.g., using reference materials like dictionaries and other support systems).

Beyond the basic components of metacognitive reading strategy categories, the “cognitive process” exists as a consequence of the communication or interaction between the reader, the text, and the context in which the reading takes place. To complete the task of comprehending the text, the reader needs to utilize metacognitive knowledge, and more importantly, invoke conscious and deliberate strategies. A number of studies have indicated that a reader's metacognitive knowledge about reading involves having an awareness of different reading strategies, and the larger cognitive enterprise of reading is impacted by a clear metacognitive awareness of those reading strategies.

Arabic and Metacognitive Reading Strategies

Arabic bilingual and multilingual readers' metacognitive strategy use has not been examined thoroughly (Alsheikh, 2009, 2011, 2014; Malcolm, 2009; Mokhtari, 2008). For instance, Mokhtari (2008) examined the metacognitive reading strategies of three multilingual readers (Arabic, English, and French) and indicated that the perceived use of metacognitive reading strategies was quite similar for the study's three participants. In addition, participants

tended to use more reading strategies in their least proficient languages and fewer strategies in the languages in which they were more proficient.

Alsheikh (2011) compared the reading metacognitive strategy use of three advanced multi-literate and trilingual readers (Hausa, English, and French). These three multilingual readers displayed a high awareness of metacognitive reading strategies while deploying more reading strategies in their second and third languages than in their first. The more proficient readers deployed a wider range of strategies than the less proficient readers, who relied heavily on translation.

Alsheikh's (2014) study raised many questions about L1 metacognitive reading strategies. He examined the comprehension and use of metacognitive reading strategies in Arabic reading among 10th grade high school learners in the UAE. Learners consciously exceeded their actual use of metacognitive reading strategies more in Arabic reading than in English (Wright, 2015). Interestingly, this study cast doubt on the finding of Carrell et al. (1989) that effective use of reading strategies in the L2 would compensate for any L2 weaknesses. Even though the UAE students' L1 was Arabic, they used more metacognitive strategies for reading in their L1 than their L2 (Alsheikh, 2014).

Alsheikh (2009) examined the metacognitive reading strategies for Arabic and English by proficient native Arabic speakers who studied at Midwestern universities in the US. Participants were conscious or at least aware of the 30 strategies in the SORS. The study showed statistical differences in strategy use as participants reported and applied more strategies in English than they did in Arabic.

Gender and Metacognitive Reading Strategies

Relatively few studies of metacognitive reading strategies have considered gender as a factor, and even fewer have investigated the role gender may play in L2 learning and reading strategies (Phakiti, 2003; Poole, 2005). Green and Oxford (1995) found gender influenced college students' use of learning strategies, as women were greater users of learning strategies than men, especially for memory, cognitive, metacognitive, and social strategies. Sheorey and Mokhtari (2001) likewise considered gender when studying the reading strategies of EFL learners and native speakers. Their study of 302 college students found that gender influenced the choice of learning strategies, and women used learning strategies more frequently than men.

Teh et al. (2009) investigated the metacognitive learning strategies of Malaysian students who studied Arabic as their L2. Women tended to apply more learning strategies, including memory, cognitive, metacognitive, and compensation strategies. Lin (2001), who studied EFL Taiwanese high school students, likewise showed that women outweighed men in using metacognitive learning strategies. In contrast, Tran's (1988) study revealed that older Vietnamese men were more likely to differentiate their metacognitive learning strategies to develop their language proficiency than older women. Tercanlioglu (2004) examined Turkish male and female college students' learning strategies and discovered that men demonstrated overall higher use of the strategies than women even though in the study female participants outnumbered male participants.

Researchers have shown that women's metacognitive awareness in reading is generally higher than men (e.g., Al-Dawaideh & Al-Saadi, 2013; Ateş, 2013; Jimenez, Puente, Alvarado, & Arrebillaga, 2009; Temur & Bahar, 2011; Topuzkanamiş & Maltepe, 2010). Based on previous gender-based study outcomes, gender has an undeniable impact on employing learning

strategies, especially in more gender-segregated cultures like Saudi Arabia; therefore, the present study considered gender in the analysis of participants' responses to online metacognitive reading strategies.

ESL and EFL Metacognitive Reading Strategy Research

The ESL learning environment is “one in which English is used in the society in which the language is being studied” (Anderson, 2004, p. 18), such as the UK, US, Canada, or Australia. Thus, learners who acquire English in a native-English country are considered ESL learners, while those who learned the language in an environment where “English is not the primary language of the society in which the language is being studied” (Anderson, 2004, p. 18) are EFL learners. Studies on metacognition have sought to separately explore EFL and ESL strategies in reading (e.g., Alsheikh & Mokhtari, 2011; Arrastia et al., 2016; Eghlidi, Abdorrahimzadeh, & Sorahi, 2014; Hamdan, Ghafar, Sihes, & Atan, 2010). However, the EFL reading environment has attracted more attention from literacy scholars in order to understand the strategies used to compensate for language weaknesses. Many suggest significant differences between ESL and EFL environments. For example, according to Block (1986), EFL college students are not proficient readers in the language they encounter daily, so they are thus more conscious about reading strategies or cognitive strategies while they are reading.

Several studies have investigated patterns of metacognitive reading strategies used for EFL reading (Alsheikh & Mokhtari, 2011; Hong-Nam & Page, 2014; Malcolm, 2009; Sheorey & Mokhtari, 2001). Most EFL studies found that a problem-solving strategy was widely applied by EFL readers for English reading. Furthermore, there was a strong connection between the reported metacognitive strategy used and the learner's language proficiency. This means that

those with a high or low language proficiency use fewer strategies than those who have an average proficiency level (Arrastia et al., 2016).

Pei (2014) examined Chinese metacognitive reading strategies and explained that reading instruction does not usually improve EFL comprehension. Likewise, Mehrdad, Ahghar, and Ahghar (2012) found that students' reading comprehension and performance did not necessarily improve when applying metacognitive strategies. However, prior research indicated a strong connection between metacognitive reading strategy awareness and learners' reading success (e.g., Asikcan & Saban, 2018; Cakiroglu, 2007; Coskun, 2011; Dogan, 2002; Duman & Arsal, 2015; Eilers & Pinkley, 2006; Kaya, 2006; Muhtar, 2006; Temizkan, 2008).

The relationship between L2 and reading strategies attracted the attention of researchers several decades ago (Carrell, 1989; Wenden, 1998; Rahimi & Katal, 2012). First of all, L2 or foreign language reading is relatively influenced by or based on L1 reading because readers "bring to their reading a certain level of cognitive skill development, more or less well-formed schemata about the world and about text structure, and some first language reading skill" (Al-Mekhlafi, 2018, p. 299).

The L2 reading cognition process is not isolated from L1 cultural and linguistic processes. Therefore, understanding the L2 cognitive process requires understanding the L1 cognitive process since cognitive skill development is integrated with a reader's actual world as well as cultural and linguistic knowledge (of the L1), as all play a crucial role when selecting metacognitive reading strategies. Anderson (2003) was the first to explore strategy use in ESL and EFL contexts and developed the OSORS to measure online reading strategies. The study did not find significant differences between the two groups in their use of reading strategies. According to Jusoh and Abdullah (2015), the only strategy difference found in Anderson's study

was in the frequency of problem-solving strategies, which was reported to be higher among EFL students.

Pookcharoen (2009) found that students' language proficiency played an essential role in both the frequency and quality of any strategy used. Moreover, studies examining online metacognitive reading strategies indicated that support strategies were the least used while problem-solving strategies were the most frequently used (e.g., Jusoh & Abdullah, 2015; Omar, 2014; Taki & Soleimani, 2012; Vaičiūnienė & Užpalienė, 2013; Wijaya & Salam, 2013). Likewise, other studies have demonstrated that the least used strategies were support strategies (e.g., Ramli, Darus, & Abu Baker, 2011). Karbalaei (2010) examined the use of metacognitive reading strategies by EFL (Iranians) and ESL (Indians) college students in India. Although the groups represented different socio-cultural and linguistic backgrounds, they reported similar strategy awareness when reading academic materials. The study also reported that Indians used more metacognitive reading strategies than Iranians.

Coiro and Dobler (2007) examined the online reading cognitive process of advanced EFL students from sixth grade and found that prior knowledge sources, inferential knowledge strategies, and a self-regulated process were the most common comprehension or metacognitive strategies. Huang, Chern, and Lin (2009) studied EFL online reading strategies to learn which helped comprehension more via a Web-based reading program. Thirty English majors read two passages that represented high and low levels of reading difficulty. When students depended on global reading strategies, their scores were higher, while support strategies did not impact their comprehension scores at all. Hamdan et al. (2010) examined metacognitive strategies used by second-year English majors when reading an English text. Problem-solving strategies were found to be the most common.

A mixed-methods study by İnceçay (2013) examined how Turkish EFL students used metacognitive reading strategies for academic purposes. The 30 participants showed a wide range of strategies, especially when reading online academic materials. Eghlidi et al. (2014) examined 50 Iranian EFL graduate students' frequency of using online metacognitive reading strategies for proficient and less proficient readers. Participants reported significant differences when deploying 18 strategies. They encountered specific difficulties in dealing with vocabulary when reading online academic texts.

Although metacognition in reading has been studied for more than three decades, the research investigating Arab EFL/ESL metacognitive reading strategy awareness remains low compared to studies on other L1s (Abbott, 2006; Abu Shmais, 2002; Alsheikh & Mokhtari, 2011; Arrastia et al., 2016; Malcolm, 2009). An early study that examined male Saudi college students' metacognitive reading strategy awareness was Al-Melhi (2000). The study found that learners tended to use a mixture of global and local strategies and reported on the difference between skilled and unskilled readers when using those strategies.

Alsheikh (2002, 2011) sought to explain the use and variety of metacognitive reading strategies by bilingual EFL/ESL-Arabic speakers who were seeking a graduate or undergraduate degree in the US or UAE. Alsheikh (2002) confirmed that reading strategies were extensively used in L2 reading but were used less in L1 reading due to the higher language proficiency required. The study also noted learners' high awareness of the relationship between Arabic and English. Alsheikh (2011) likewise examined the metacognitive reading strategies used by graduate and undergraduate Arabic-speaking students when reading in Arabic or English. The study noted an increase in support and problem-solving strategies in English reading, while there were no significant differences in using such global strategies in both languages. Alsheikh and

Mokhtari (2011) explored the metacognitive reading strategies used by 90 Arabic-speaking university students in the US. The findings revealed such strategies were used in both Arabic and English but were more common for reading in English.

Alsamadani (2009) examined the types and frequency of Saudi EFL college students' metacognitive reading strategies and found they tended to use planning strategies more than attending and evaluating strategies. In contrast to previous studies, Alsamadani (2011) discovered Saudi students' use of metacognitive reading strategies did not affect their reading comprehension. Jounto and Mustapha (2016) compared Libyan EFL secondary school students' use of metacognitive reading strategy domains, with problem-solving being the most common domain when reading online. The study also noted that students were moderate users of global strategies and that support strategies were the least common. These findings were consistent with those of Omar (2014) on Libyan postgraduate students' outcomes and similar to those of Sitindaon, Wijaya, and Salam (2013) and Ostovar-Namaghi and Noghabi (2014). Therefore, global metacognitive reading strategies are typically classified as the most common strategies employed in reading, while support strategies are typically the least common.

Despite the many studies on various aspects of L2 and foreign language reading, the researcher found only two that investigated the metacognitive reading strategies of successful and proficient readers in Arabic and English (i.e., Alsheikh & Mokhtari, 2011; Mokhtari, 2008). Unfortunately, there was no research on the online metacognitive reading strategies of Saudi learners. However, many studies do reveal a solid connection between the use of metacognitive strategies and reading, which can facilitate learning and text information processing (Asikcan & Saban, 2018; Cakiroglu, 2007; Coskun, 2011; Dogan, 2002; Duman & Arsal, 2015; Eilers & Pinkley, 2006; Kaya, 2006; Muhtar, 2006; Temizkan, 2008).

A study of online metacognitive awareness and strategy use by Arabic native speakers would improve the current understanding of their reading efforts in two languages, particularly since most recent academic texts are now delivered as online material. Since Saudi Arabic-English online metacognitive reading strategies have not been explored, it was the topic of this study.

Finally, few studies have investigated the influence of learning environment on metacognitive reading strategies (Anderson, 2004; Karbalaei, 2010; Riley & Harsch, 1999). Therefore, this study compared the online metacognitive reading strategies used by Saudi ESL students who learned English in a native English-speaking country (the US) and Saudi EFL learners who learned English in Saudi Arabia. In addition, this study was the first to compare the L1 (Arabic) online metacognitive reading strategies and L2 (English) strategies of this demographic.

Chapter 3

Methodology

This chapter explains the methodology of the study, including the hypotheses, research questions, research design, instruments (survey and interviews), recruitment, procedures, participants, data collection, and data analysis.

Hypotheses and Research Questions

The study formulated the following hypotheses:

1. Saudi men and women use different metacognitive strategies when reading academic material online.
2. Saudis who have studied where the native language is English use online metacognitive reading strategies more effectively than Saudis who have studied where the native language is Arabic.

The study sought to answer the following research questions:

1. Do Saudi L1 reading practices and the online reading environment affect reading comprehension skills?
2. Is there a difference in the use of metacognitive reading strategies when reading in an L1 as opposed to an L2?
3. Which online reading strategy categories are perceived as used more often in both languages?
4. Does gender influence the use of metacognitive strategies when reading academic material online?
5. Does English learning environment (ESL vs EFL) influence the use of metacognitive strategies when reading academic material online?

Research Design

This mixed-methods study collected qualitative and quantitative data. Since the study assessed the reading metacognition of a specific audience, Saudi ESL/EFL learners, a quantitative approach was used. A survey collected data about participants' strategy use as well as background information and their personal views. A qualitative approach was used by conducting interviews with some participants to gain further insight into the factors influencing and motivating their reading metacognition.

Instruments

Survey. In addition to examining participants' metacognitive online reading strategies, this project sought to understand the Saudi reading culture and its influence on these strategies. To that end, survey items were used from the Booktrust Reading Habits survey, which was designed for investigating reading culture (Gleed, 2013). Five multiple-choice items from said survey that fit the study's purpose were duplicated in the pre-test survey. Subsequent survey questions were drawn from the OSORS and included 16 items for global strategies, 11 for problem-solving strategies, and nine for support strategies. Finally, three questions regarding personal data were added to the beginning of the survey. Participants did one survey for Arabic metacognitive reading strategies and another for English strategies.

Interview. Interviews were used with open-ended questions to elicit richer responses. There was no specific order for the questions because the interview needed to be flexible to give participants enough space to express themselves. Robson's (2002) general advice on interviewing was taken into consideration, so listening occurred more than speaking, questions were clear and straightforward, and the researcher sought to remove all cues that might lead the interviewee to respond in a specific way. The following interview questions were formulated:

1. Do you practice reading out of school curricula? And does your family (parents) practice reading at home?
2. Do you usually read online? Tell me more about your online reading.
3. When reading either in Arabic or English, do you apply a specific reading strategy?
4. Do you know what metacognitive reading strategies are?

The questions were created to be like a conversation. The interviews were intended to be supportive of the survey, so the approximate length of each interview was 4–7 min to examine the reading culture of each participant and their views on metacognitive strategies.

All participants chose to conduct their interviews in Arabic to communicate freely and more easily express themselves. The interviews were transcribed in Arabic through Atlas.ti Software Analysis (Gibson, Callery, Campbell, Hall, & Richards, 2005), a program designed to assist researchers in transcribing Arabic interviews. The transcription was double-checked before moving to translation. As the study examiner had experience and a bachelor's degree in translation, he did the translation. The result was then checked by a translation professor.

Verbatim was used to transcribe the interviews. This software provides audio transcription that codes a word-for-word reproduction of verbal recording data (Poland, 1995). Written words are exactly replicated from the audio recording. Verbatim transcription captures not only meanings and precipitations of recordings, but also the context where it occurred.

Recruitment

This study mainly used social media tools to collect the data by distributing the survey link to participants. The researcher contacted colleagues, friends, and previous students who studied abroad using social media chat groups (WhatsApp, Facetime, Twitter, Facebook) and provided the survey link. In addition, US Saudi students and their club pages on Facebook shared

the survey link with hundreds of thousands of Saudi students in the US. The researcher also used prior academic connections to Saudi college professors to disseminate the survey link.

Procedure

The survey was divided into three sections: personal information, a pre-test survey, and a post-test survey (see Table 1). The survey was online, so participants could access the materials anywhere. Participants started by filling out the consent form before answering personal information. Then, they answered a short multiple-choice questionnaire on their reading habits. SurveyMonkey was used to collect the data.

Table 1

Survey Procedure Sections

Section	Content	Time
Part 1	Consent form, personal information	2 min
Part 2	Booktrust Reading Habits	3 min
Part 3	Reading a short passage	5 min
Part 3	Online Survey of Reading Strategies (OSORS)	7-12 min
Total		17-20 min

Once the participants completed the first part of the survey, they were asked to read a short academic passage. As soon as they were done reading the passage, they moved on to the last section of the survey, which was about their metacognitive reading strategies. Before submitting the survey, participants had the option to write about their experience with the survey and were asked if they were willing to take part in an interview.

The participants who volunteered to be interviewed provided their contact information so that the researcher could arrange for the interview. They were all men due to gender restrictions in Saudi culture. The interview location was carefully chosen to avoid noise and distractions. The researcher took notes during the recording to assist in observing any non-recorded issues. Table 2 gives a breakdown of the interviewees.

Table 2

Interview Description

Name	Age	Education Level	Major	Interview Length
Salem	21	First-year undergraduate	Computer Science	7.22 min
Saleh	24	Graduate student	English	8.22 min
Mohammed	22	Graduate student	Electronic Engineering	6.55 min
Eaid	21	First-year undergraduate	Pharmacy	8.10 min
Turki	23	Third-year undergraduate	English	7.08 min

Participants

A total of 114 participants were divided into two groups (53 ESL and 61 EFL). The participant numbers sometimes differ from one table or figure to another because some participants did not complete the survey or only finished some survey items. For example, the final approximate number of participants who completed all metacognitive online reading strategy surveys was 105 for the Arabic survey and 98 for the English survey.

EFL group. Most of the participants in the EFL group were pursuing their degrees at a Saudi university. Their approximate ages ranged from 18 to 30, and they were mostly sophomore students. Participants were more heavily weighted as male since 38 male and 23 female participants took the survey. Also, almost 80% of these participants were undergraduate students.

Over 92% of the EFL participants had studied English for more than two years in Saudi Arabia. Table 3 gives a breakdown of self-reported English proficiency for this group. The EFL participants appeared less confident about their English level than the ESL participants since 50% of EFL participants classified their English level as upper intermediate while 26.23% categorized themselves as lower intermediate. Even though most Saudi universities require their students to have a 5 or above in IELTS in order to enroll in one of the science majors, students still felt unconfident about their English ability. On the other hand, almost 22% of EFL participants categorized their language level as advanced, which reflected a self confidence in

learning English. The key finding in this part was that the upper intermediate and advanced levels were the highest percentages among the EFL participants because they represented almost 82% of this group.

Table 3

Overall Self-Evaluation of EFL Group's English Proficiency Levels

What is your English language level?		
Answer Choices	Responses	
Beginner level	1.64%	1
Lower intermediate level	26.23%	16
Upper intermediate level	50.82%	31
Advanced level	21.31%	13
Answered		61
Skipped		0

ESL group. The 53 ESL participants acquired English from studying abroad at English institutes, except for one student who learned English while studying in an American high school. The ESL participants mostly started learning English in Saudi Arabia but were not proficient enough to enroll in American universities. Therefore, they studied remedial English to pass qualification exams (TOFEL, IELTS). Over 70% of these participants were graduate students, ranged in age from 20 to 40, and most had spent more than two years studying English. Only 12 were female, while the remaining 41 were male.

In contrast to the EFL group, the ESL participants showed greater confidence in their English ability (see Table 4). Over 50% reported their English level as upper intermediate, 26% as lower intermediate. It was expected that most of the ESL would not be lower intermediate since most of them had fulfilled the language requirements to enroll in classes. However, only 39% described their English level as advanced.

Table 4

Overall Self-Evaluation of ESL Group's English Proficiency Level

What is your English language level?		
Answer Choices	Responses	
Beginner level	1.89%	1
Lower intermediate level	13.21%	7
Upper intermediate level	45.28%	24
Advanced level	39.62%	21
Answered		53
Skipped		0

Table 5

Participant Demographic Data

Group	N	Gender		Level of Education			
		Male	Female	High School	College	Diploma	Graduate / College
ESL	53	41 (78%)	12 (22%)	0	21	3	29
EFL	61	38 (62%)	23 (38%)	3	38	8	12
Total	114						

Data Analysis

Quantitative data analysis. SPSS was used to analyze the survey variables. Mean and standard deviation were computed for each variable. There was more than one category for the analysis based on gender or language learning background. In addition, a percentage analysis approach was used to draw a comparison between some of the survey items and provide more details about the participants' responses (Creswell & Creswell, 2017). Three main independent variables were therefore considered in analyzing the data: language (Arabic/English), learning background (ESL/EFL), and gender (male/female). This applied to the use of three categories of metacognitive reading strategies (global strategies, support strategies, and problem-solving strategies). Since there was more than one dependent variable, a multivariate analysis of variance (MANOVA) was used to assess the effects of the independent variables.

The study analysis was divided into two sections. The first shows the effect of learning background and gender on Saudi metacognitive reading strategies. The second examines the differences in deploying online metacognitive strategies in Arabic and English and the influence of gender on applying metacognitive strategies. Hence, the effects of gender (male or female) and learning background (EFL or ESL) were tested using MANOVA on the three metacognitive strategies (global, support, and problem-solving strategies) reported by the 98 participants who completed the survey in English. The same procedure was performed with the Arabic survey.

Qualitative data analysis. The interviews' transcription code was based on Poland's (1995) Verbatim audio transcription. The analysis of the interview data was centered on finding out about participants' reading practice background, especially online reading and their knowledge and use of metacognitive reading strategies. The data were analyzed using qualitative methods and presented within a thematic framework.

Chapter 4

Results

Reliability of the Instrument

Reliability refers to the consistency of the study results. A Cronbach's (1951) alpha coefficient was obtained for the responses to the two surveys (Arabic-English) on metacognitive reading strategies. The reliability of the 30 items on metacognitive strategies (in Arabic and English), as measured by internal consistency, was good ($\alpha = .89$, $N = 86$). Reliability of the 13-item global metacognitive strategies subscale ($\alpha = .78$, $N = 90$), nine-item support metacognitive strategies subscale ($\alpha = .77$, $N = 189$), and eight-item problem-solving metacognitive strategies subscale ($\alpha = .78$, $N = 191$) was satisfactory.

Background Reading and Literacy Comprehension Information

Participants answered questions about the influence of their general language learning background and literacy practices on reading metacognition (RQ1). This question included sub-questions regarding Saudi family bilingualism, Saudi family literacy, free time reading practices, reading comprehension, the type of device used in online reading, and metacognitive reading strategy awareness.

Results for the question regarding bilingual family members are shown in Figure 1. The percentage of mothers who could speak another language in Saudi homes was 2%, the lowest among all family member categories, while more than 24% of fathers were second or foreign language speakers. Over 53% of brothers could speak another language. However, only 22% of younger wives could speak another language.

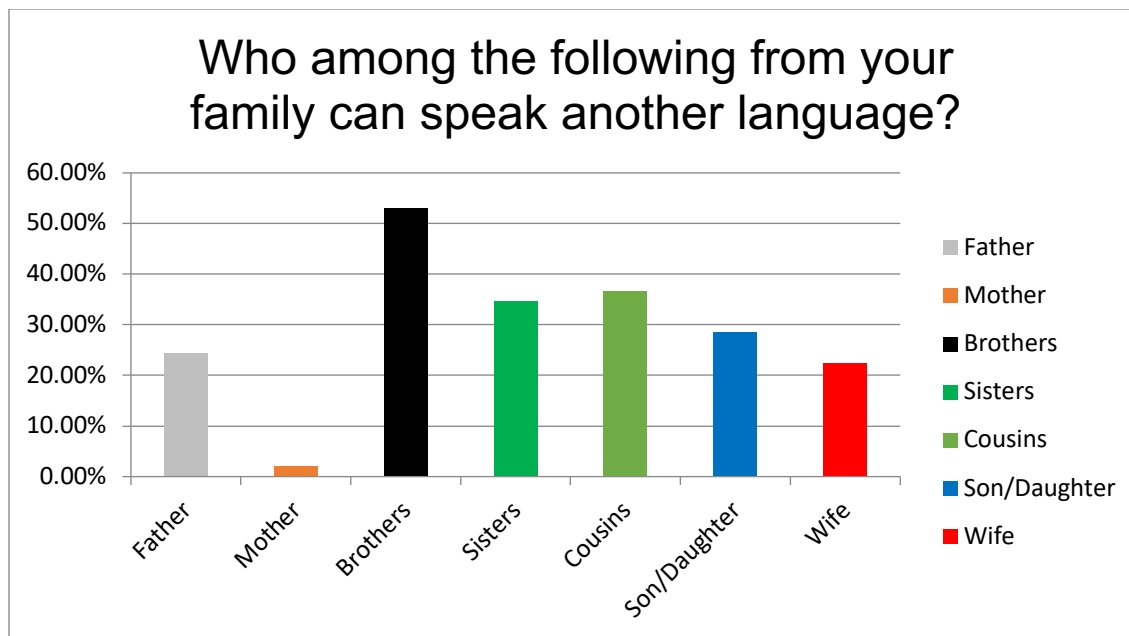


Figure 1. Saudi family second/foreign language speakers.

The interview provided more details about the status of Saudi family literacy. Three out of five participants had one or two parents who could not read or write, as illustrated in the interview samples below (see Appendix A):

Interviewer: DO your parents READ and WRITE.

Salem: [um] NO, my MOM doesn't READ or WRITE while my DAD does READ and WRITE.

Interviewer: [mmh] HOW about your sibling?

Salem: YEAH, they read and write.

Interviewer: YOUR PARENTS can read and write.

Turki: JUST my dad [pause].

Interviewer: [um] YOUR DAD has a college degree.

Turki: NO just high school.

Another survey question probed participants' reading practices by exploring their free time reading habits. Over 43.06% of EFL Saudi students and 34.07% of ESL Saudi students reported spending little or no free time reading. Free time reading in Arabic had the lowest response (8.26%), while EFL free time reading has the highest (25.59%). Most participants spent very little or at most some free time reading, as shown in Table 6.

Table 6

Free Time Spent Reading in Arabic and English

When I have free time, I spend	ESL			EFL			Arabic Readers		
	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall
None of my time reading	14.45%	9.62%	15.09%	24.33%	21.31%	22.95%	17.75%	7.67%	18.35%
Very little of my time reading	45.03%	42.31%	18.87%	57.41%	48.10%	13.11%	26.22%	24.44%	27.52%
Some of my time reading	28.55%	36.54%	47.17%	13.21%	23.30%	39.34%	33.87%	38.53%	45.87%
A lot of my time reading	13.07%	11.54%	18.87%	14.03%	9.28%	25.59%	24.23%	30.36%	8.26%
Number of Participants	41	12	53	38	23	61	79	35	109

Gender differences appeared since Saudi female participants spent more of their free time in reading in either language. Over 30% of women read in Arabic in their free time, while only 24% of men did. On the other hand, both ESL (13.07%) and EFL (14.03%) men were more likely to read in English during their free time than women, and female EFL learners had the lowest reported rate of reading in English during free time (9.28%).

Table 7 presents background information about Saudi reading comprehension. Saudis displayed a very low rate in Arabic reading comprehension as only 8.26% responded that they could always think of an answer to Arabic reading comprehension questions. Interestingly, Saudi English reading comprehension was higher than Arabic reading comprehension as 18.87% of the ESL group and 25.59% of the EFL group stated that they could think of an answer to English reading comprehension questions, while only 8.26% responded similarly with regard to Arabic.

Table 7

Class Reading Comprehension

When my teacher asks me about what I have read	ESL			EFL			Arabic Readers		
	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall
I can never think of an answer	21.45%	24.62%	15.09%	35.33%	32.31%	22.95%	24.75%	12.67%	18.35%
I almost never think of an answer	13.55%	26.54%	18.87%	47.41%	42.10%	13.11%	29.22%	16.44%	27.52%
I sometimes think of an answer	51.03%	39.31%	47.17%	13.21%	22.30%	39.34%	32.87%	26.53%	45.87%
I can always think of an answer	14.07%	11.54%	18.87%	4.03%	3.28	25.59	14.23%	45.36%	8.26%
Number of Participants	41	12	53	38	23	61	79	35	109

Gender differences appeared again in terms of reading comprehension. Generally, Saudi women rated themselves as more capable in reading comprehension in Arabic, and there was a substantial difference between women (45.36%) and men (14.23%). Men generally reported higher English reading comprehension, although this difference was not as vast as it was regarding Arabic reading comprehension. ESL participants of both genders reported better English reading comprehension than EFL participants.

Another background question investigated which devices participants used to read online (see Table 8). The overwhelming majority read online more often using smartphones (70.18%), while 35.96% used computers. No major differences were found in terms of gender (male/female) or learning background (ESL/EFL) in the use of online reading devices.

Table 8

Devices Used for Online Reading

Which of the following devices do you mostly use to read online?		
Response Choices	Actual Responses/Percent	
Phone	70.18%	80
iPad or tablet	14.91%	17
Computer	35.96%	41
Answered		114
Skipped		1

The last background question examined Saudi learners' awareness of metacognitive reading strategies. The interviews found that regardless of language level or major, all five interviewees expressed a lack of knowledge about metacognitive reading strategies in Arabic or English:

Interviewer: OKAY, DO you KNOW metacognitive reading strategies? and Do you usually APPLY them in READING?

Salem: YEAH, skimming, scanning in READING.... [um] I USE them in ENGLISH reading. *Interviewer:* [ah] WELL, what're your reading STRATEGIES?

Salem: [mmh] BY GOD I would start with trying to understand the topic of the reading, THEN, I read SLOWELY or STEP by step to read in anyway and I use my phone to read it to me.

Saleh: In ENGLISH sometimes the vocabulary can't be understood, [mmh] I mean meaning is hard to be fully understood WORD by WORD, though in Arabic I don't face PROBLEMS in reading.

Interviewer: HOW do you deal with ENGLISH reading PROBLEMS?

Saleh: I USE my phone to translate the TEXTS... [uh] I try to GUESS the meaning of vocabulary.

Interviewer: [um] DO you KNOW metacognitive reading strategies and do you USE them?

Saleh: YEAH, I USE guessing to understand difficult words in texts.

Interviewer: OKAY, do you know metacognitive reading STRATEGIES? If yes, DO you USE THEM?

Mohammed: No, I do scanning when I READ...[um] I also GUESS the meaning of difficult words in a text.

Metacognitive Reading Strategy Use Based on Language and Gender

This section covers the results that addressed Research Questions 2–4. In this study, the effects of gender (male, female) and language background (Arabic, English) were tested through MANOVA on the metacognitive strategies (global strategies, support strategies, and problem-solving strategies) of 98 participants who filled out the two surveys (English and Arabic). The data were screened to check outliers and were run through univariate and multivariate normality tests to make sure the normality assumption was reasonable since nonnormality causes severe problems that the robustness of the test would not overcome because variables were not normally distributed. The study dependent variables must be equally distributed to fulfill the normality assumption. The MANOVA assumes a linear relationship among dependent variables with a specific cell or groups; hence, the occurrence of curvilinear relationships would reduce the power of the MANOVA. The MANOVA presumed the assumptions within the group's covariance matrices were equal. Therefore, the preliminary analyses revealed no important violations of the assumptions of normality, linearity, univariate and multivariate effect, homogeneity of matrices of variances and covariances, or multicollinearity.

Table 9 presents the main descriptive statistical outcomes of global, support, and problem-solving strategies according to gender and language. According to the results of the multivariate tests, there was no statistically significant effect from gender (Wilk's $\lambda = .98$, $F(3, 197) = 1.46$, $p = .23$, partial $\eta^2 = .02$) or language (Wilk's $\lambda = .98$, $F(3, 197) = 1.00$, $p = 1.00$, partial $\eta^2 < .001$) on the linear combination of the three metacognitive online reading strategies. However, there was a crossover interaction effect for gender and language, Wilk's $\lambda = .94$, $F(3, 197) = 4.28$, $p = .006$, partial $\eta^2 = .06$.

Table 9

Strategy Use by Gender and Language

Global Strategies			Gender						
Language	Male			Female			Total		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
English	3.51	0.53	70	3.04	0.71	28	3.37	0.62	98
Arabic	3.23	0.68	66	3.33	0.71	39	3.27	0.69	105
Total	3.37	0.62	136	3.21	0.72	67	3.32	0.66	203
Support Strategies			Gender						
Language	Male			Female			Total		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
English	3.16	0.68	70	2.68	0.78	28	3.03	0.74	98
Arabic	2.90	0.77	66	2.94	0.71	39	2.91	0.74	105
Total	3.03	0.73	136	2.83	0.75	67	2.97	0.74	203
Problem-Solving Strategies			Gender						
Language	Male			Female			Total		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
English	3.69	0.60	70	3.12	0.75	28	3.53	0.69	98
Arabic	3.32	0.72	66	3.53	0.90	39	3.40	0.80	105
Total	3.51	0.68	136	3.36	0.86	67	3.46	0.75	203

The criterion for the significance of between-subjects effects was readjusted to $p = .02$.

The results of the tests on between-subjects effects revealed that men and women differed in all three types of metacognitive strategies when combined with language, as displayed in Table 10.

Table 10

Tests of Between-Subjects Effects for Gender and Language

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	<i>p</i>	Partial η^2
Global strategies	3.51	1	3.51	8.49	.004	.04
Support strategies	2.97	1	2.97	5.57	.02	.03
Problem-solving strategies	6.80	1	6.80	12.90	< .001	.06

As the previous multivariate analysis of variance included only English speakers, a post-hoc MANOVA analysis with gender as the independent variable was conducted only on Arabic reading. The results of the multivariate tests revealed no effect from gender on the linear

combination of metacognitive online reading strategies for Arabic participants, Wilk's $\lambda = .98$, $F(3, 101) = 1.46$, $p = .85$, partial $\eta^2 = .02$.

Therefore, when reading online Arabic texts, men and women did not significantly differ in their use of global, support, and problem-solving metacognitive strategies. However, women tended to use more metacognitive strategies with online Arabic texts than with English texts, while male participants did the opposite. In addition, problem-solving strategies were used more by both men and women in Arabic and English in online reading. Participants did not differ in using online metacognitive reading strategies with English and Arabic when gender was not considered. However, men used global, support, and problem-solving strategies more than women when reading in English.

Metacognitive Reading Strategy Use Based on Learning Background and Gender

This section covers the results that addressed Research Questions 3–5. Table 11 presents the main descriptive findings regarding global, support, and problem-solving strategies based on gender and language learning background (EFL/ESL). According to the multivariate tests, gender had a statistically significant effect on metacognitive reading strategies overall, Wilk's $\lambda = .84$, $F(3, 92) = 6.05$, $p = .001$, partial $\eta^2 = .16$. There was no significant effect from learning background (Wilk's $\lambda = .97$, $F(3, 92) = 1.05$, $p = .38$, partial $\eta^2 = .03$) or the interaction of gender and learning background (Wilk's $\lambda = .99$, $F(3, 92) = .40$, $p = .75$, partial $\eta^2 = .01$). This means there was no significant difference between female ESL and EFL participants in applying the metacognitive reading strategies or between male ESL and EFL participants in applying the strategies.

The significance criterion for between-subject effects was readjusted using the Bonferroni correction, i.e., by dividing the usual significance threshold of $p = .05$ by the number

of post-hoc analyses. Consequently, the new threshold was $p = .02$. The tests on between-subjects effects revealed men and women differed in all three types of metacognitive strategies, as displayed in Table 12, especially in global and problem-solving strategies. Problem-solving strategies had the largest univariate subject effect ($\eta^2 .16$) on both genders, followed by global strategies ($\eta^2 .13$). Therefore, there was a noticeable statistical effect from gender on metacognitive reading strategies.

Table 11

Strategy Use by Gender and Learning Background

Global Strategies		Gender								
Learning Background	Male			Female			Total			
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	
EFL	3.51	.57	32	3.15	.53	17	3.39	.58	49	
ESL	3.50	.51	38	2.87	.93	11	3.36	.67	49	
Total	3.51	.53	70	3.04	.71	28	3.37	.62	98	

Support Strategies		Gender								
Learning Background	Male			Female			Total			
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	
EFL	3.07	.68	32	2.75	.74	17	2.96	.71	49	
ESL	3.24	.68	38	2.59	.87	11	3.09	.77	49	
Total	3.16	.68	70	2.68	.78	28	3.03	.74	98	

Problem-Solving Strategies		Gender								
Learning Background	Male			Female			Total			
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	
EFL	3.74	.56	32	3.25	.48	17	3.57	.58	49	
ESL	3.65	.63	38	2.92	1.04	11	3.49	.79	49	
Total	3.69	.60	70	3.12	.75	28	3.53	.69	98	

Table 12

Tests of Between-Subjects Effects for Gender

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	<i>p</i>	Partial η^2
Global strategies	4.74	1	4.74	13.56	< .001	.13
Support strategies	4.60	1	4.60	8.97	.004	.09
Problem-solving strategies	7.16	1	7.16	17.24	< .001	.16

Chapter 5

Discussion

Background Reading and Literacy Information in Saudi Culture

Mass literacy is a relatively new addition to Saudi culture, as most Saudi schools were founded in the middle of the twentieth century. This means that most Saudi grandmothers and grandfathers, and sometimes even many parents, are illiterate. According to the interviews, three out of five participants had one parent who could not read or write. This illustrates that most Saudis suffer from the absence of a home model of literacy practice since illiteracy is still quite common among the older generations. Kachala (2007) explained that the real starting point of a reading culture occurs in early childhood and grows through adulthood. Young people cannot absorb this reading culture without an adult role model. Banihani and Abu-Ashour (2015), who conducted interviews with school teachers and administrators in Jordan, saw a similar trend in Jordanian family literacy practice, namely, that young people did not have reading role models in the home. Dempsey (2010) stated that young children cannot be good readers unless their parents read themselves and set an example for their children. Saudi reading culture thus suffers from a lack of a strong reading practice model.

Khan (2011) and Alharbi (2015) agreed that Saudis lack English practice since few Saudi people speak English in any community or family setting. Alharbi (2019) demonstrated that cultural factors (e.g., gender, the influence of L1, society, culture, and religion) have a profound impact on Saudi English achievements. Al-Saraj (2014) explained that Saudi society has a conservative, religious culture where people have strong traditions and may be more likely to resist change. As a result, it can be inferred that the expansion of English practice to situations outside of the EFL classroom is unlikely for more most Saudis, especially female students, who

may have more restricted contact with people outside their schools or families, due to cultural and religious factors.

In a related area, since the Saudi education system is comparatively new, speaking another language is uncommon in Saudi homes. This study showed that the older generation had a smaller percentage of educated Saudi family members, especially women since public female education arrived 30 years after male education (Al Ghazali, 2017). The percentage of Saudi mothers who could speak another language was the lowest among family members, at 2%, while more than 24% of Saudi fathers were foreign language speakers. Young Saudi men were most often the family's bilingual speakers, with over 53% speaking another language. Saudi society is considered a masculine community, where men spend more time outside the home interacting with people. Saudi men are thus more likely to be bilingual than women because they have more opportunities to reach out to people. Saudi female accessibility and interactions are mostly limited to relatives and close friends. However, better education has increased Saudi female language exposure (Alrabai, 2017a), and more and more women have now become second or foreign language speakers; more than 35% of women were bilingual in the current study. Recognizing the current Saudi language and literacy environment is necessary to understand the metacognitive reading strategies used in Arabic and English.

Strong reading comprehension or metacognitive skills come from extensive reading practice. Successful readers are those who are actively engaged in reading. Therefore, "readers who have achieved some fluency are more likely to engage in more extensive amounts of reading than readers who lack fluency" (Pikulski & Chard, 2005, p. 3). Stanovich (2009) also noted that when readers are exposed to an extensive amount of reading, they consequently develop those skills that contribute to reading fluency.

Therefore, extensive reading practice would influence the Saudi cognition skills because extensive readers are more likely to automatize reading cognition. Free time reading practice clearly influences literacy or comprehension skills (Curry, Reeves, & McIntyre, 2016; Owodally, 2014), and it may also lead to increased confidence about one's reading comprehension skills. The responses of the Saudi participants to the free time reading questions indicated their practice of Arabic reading in the current study. This provided more detailed background information about Saudi reading habits and comprehension, which aids in understanding and interpreting responses related to their use of metacognitive reading strategies.

Interestingly, the study showed that Saudis tended to practice English reading in their free time more than they did with Arabic. This went against the expected outcome because logically L1 reading should be much easier than L2 reading. This outcome requires further investigation to understand the reason for preferring L2 over L1 reading. Moreover, Saudi English reading practices are generally not better than L1 (Arabic) reading practices. However, the study revealed that EFL participants practiced English reading more than ESL or Arabic reading participants. In spite of the fact that ESL students should be more familiar with English reading practices since most were academic students, they were overall unsure about their free time reading. The fact that less than 8% of all Saudi ESL respondents practiced free time reading indicated that Saudi ESL learners were not practicing English reading regularly.

The results revealed gender differences related to free time reading. Saudi women were more likely to spend their free time reading in Arabic (over 30%) than Saudi men (24%). This supported previous studies that highlighted the significant improvements in female education in Saudi Arabia (Al Ghazali, 2017; Faruk, 2014). On the other hand, both ESL (13.07%) and EFL (14.03%) Saudi men reported higher rates of English free time reading than women (9.28%).

This might be a result of the influence of the Saudi career market, where more business job opportunities exist for men, and business careers require English proficiency. Hence, men may be more motivated to improve their English literacy skills.

A popular article describing this issue in Arab literacy practice by the journalist Ursula Lindsey tried to answer the question of “Why Arabs Don’t Read” (as cited in Martin, Martins, & Naqvi, 2017). Martin et al. (2017) also attempted to answer this question:

Arabs in two of the three countries with large expatriate populations—Saudi Arabia and the UAE— reported significantly lower levels of book reliance than Asian and Western expatriates. The study also found that Arabs rely less on books than on TV, interpersonal sources, or the Internet for information and entertainment. (p. 387)

These researchers concluded that Arab residents, specifically in Gulf states, used books for learning and leisure far less than some other countries. This finding was consistent with the UNESCO (2015) literacy report, which examined literacy practices in 22 Arab countries and supported the claim that Arabs simply read less. Egypt had the lowest rate of literacy at 75% while Qatar had the highest at 97%.

Several studies have examined potential reasons behind this discrepancy in literacy practice and suggested cultural variables have influenced the Saudi reading environment (Al Ghazali, 2017; Alrabai, 2016; Charise, 2007). The spread of English in communities decreases the dominance of the native culture, especially among the younger generation (Hopkyns, 2014). The entry of English into Arab society is popularly regarded as a domination of Western over Arab cultures, especially among the elderly (Charise, 2007). Supporting English teaching in the Arab world, especially for elders, can thus be seen as moving the culture away from its Islamic principles and values. English can also be associated with new and implicit colonialism, which can directly or indirectly influence the view of the older generation regarding the use and spread of English (Al Ghazali, 2017; Charise, 2007).

Hence, there are many cultural factors that affect English learning and literacy in Saudi communities. Some factors are “attributed to the point that cultural effects in the form that they occur may be due to stereotyping of the Arab culture and the belief that the advancement of English may hinder their cultural identity” (Al Ghazali, 2017, p. 137). Such cultural variables may influence Saudi English reading culture and practices. However, globalization and new technology have made remarkable changes to the Saudi perspective on English learning, such that more Saudis, male and female, have studied English in recent years (Alrabai, 2017b).

There is a common assumption that the acquisition of higher skills in reading and metacognitive strategies needed by adults to understand complex texts requires more active engagement in reading class activities (Carnegie Council on Advancing Adolescent Literacy, 2010; Torgesen et al., 2007). This finding implies that reading skills are learned in early childhood and practiced effectively throughout adolescence. Based on this point, if learners successfully acquire literacy practice skills and cognition strategies, they will be able to actively engage in discussion during reading class. Despite this, the Saudi participants’ reaction to the survey question regarding comprehension of reading class questions revealed generally lower reading comprehension for Arabic than English; only 8.26% of respondents claimed they could always think of an answer to Arabic reading comprehension class questions, while over 18.87% of the ESL and 25.59% of the EFL group were confident in their ability to answer English comprehension questions in a reading class. This points to obvious literacy teaching issues in Saudi Arabia, especially with L1 literacy (Alateeq, 2016; Al-Mashary, 2006; Alrabai, 2017b).

This also reflects the fact that Saudis do not widely apply metacognitive and reading strategies when they read in Arabic. Both Saudi ESL and EFL students applied metacognitive and reading strategies in English reading because they could engage in reading class and respond

to class comprehension questions. Even though the ESL students showed more ability to comprehend reading materials and engage in reading class, the EFL students reported a higher rate (25.59%) of being able to answer reading comprehension questions and engage in reading classes. Conversely, because ESL students had more exposure to English, it was assumed they would be more capable of engaging in such activities.

The analysis of the EFL learners' ability to engage in English reading classes revealed important information about Saudi teaching of English reading, which has been noted to have problems and dramatic weaknesses on different levels by many researchers (e.g., Al Ghazali, 2017; Alrabai, 2016; Khan, 2011; Liton, 2012). Surprisingly, less than 25% of both EFL or ESL Saudi participants demonstrated a firm ability to engage in reading and discuss readings with their English teacher. On the other hand, over 35% of ESL/EFL participants indicated their complete inability to engage in English reading classes, meaning they were unable to be involved in classroom reading comprehension activities.

The extremely limited effectiveness of teaching English literacy in Saudi schools was illustrated by these results, which showed that more than a third of graduate or undergraduate students were incapable of comprehending texts and interacting in a reading class. Consequently, these outcomes suggest Saudi teaching practices need to undergo reform and that English teachers need to have more intensive training and academic preparation to teach reading skills (Alharbi, 2019; Al-Seghayer, 2014; Rahman & Alhaisoni, 2013).

A large number of studies have examined the performance of Saudi English teachers (e.g., Alharbi, 2019; Al-Seghayer, 2014; Faruk, 2014; Rahman & Alhaisoni, 2013; Zohairy, 2012) to understand the factors affecting Saudi language learning and the issues that contribute

to high or low achievement. Researchers have pointed out problems with Saudi teachers in the public schools that must be dealt with in order to enhance English instruction.

One of the most critical issues for Saudi teachers that has been highlighted by many researchers is the reliance on literature and the grammatical approach of teaching rather than implementing communicative approaches to develop learners' language skills (Al-Seghayer, 2014). Memorizing grammatical rules, drilling reading passages, translating sentences word by word, using L1 in class communications, and other teaching problems are apparent in the Saudi classroom. Enhancing English teacher training programs is one of the most important ways to improve English instruction in Saudi Arabia, as Rahman and Alhaisoni (2013) stated:

[We] promote the implementation of a systematic approach to Saudi EFL teacher-preparation programs because the current programs are inadequate for the preparation of Saudi EFL teachers, especially with regard to disciplinary knowledge, pedagogical content knowledge, and technological pedagogical knowledge. (p. 146)

Due to the insufficient training received by EFL teachers, there is a desperate need to establish support programs to enhance their knowledge and skills. Al-Seghayer (2014) further indicated the need for professional development in English teaching for Saudis to “enable them to enhance other additional skills that are needed in their profession by talking to colleagues in schools and through working with other experienced teachers” (p. 146). Reaching out with greater professionalism in the field would assist EFL teachers and reinforce their teaching skills. Using their individual experience in learning the language could profoundly influence their classroom competence (Alharbi, 2019). A major issue in Saudi EFL classes is where full language skills are not been efficiently delivered to learners.

The EFL reading skills (specifically, reading comprehension and reading strategies), like other language skills, are not being adequately taught to Saudi learners (AlAbik, 2014; Al-Seghayer, 2014). The concept of reading for many EFL teachers is associated with oral reading

inside the classroom where a few students read a portion of a passage (Al-Seghayer, 2014). This approach is the preferred method for many EFL teachers according to Alshumaimeri (2011). This issue was affirmed by Alsamaani (2012), who also indicated that most reading class time is designated for silent reading activities with answers given to reading comprehension questions without teaching students reading skills or comprehension strategies. Al-Rojaie (2011) further revealed that oral decoding for reading passages word by word is commonly and extensively practiced in these reading classes.

The present study supported the claim (cf. AlAbik, 2014; Alharbi, 2019; Alsamaani, 2012; Al-Seghayer, 2014) that Saudi EFL teaching has significant issues; when the five interviewees were asked about their knowledge of cognitive or metacognitive reading strategies in Arabic and English, all of them mentioned reading strategies (e.g., skimming, scanning). Regardless of language level or major, interviewees showed no understand of metacognitive strategies (e.g., underlining main points, using tables or figures, rereading, and other strategies to assist comprehension). This would suggest they had never been taught such strategies.

Since the interviews revealed some participants were not aware of metacognitive reading strategies, some Saudi EFL teachers might also be unaware of them. In his study, Alsamaani (2012) shed light on a crucial finding about EFL teacher knowledge: 75% of Saudi EFL teachers expressed a lack of knowledge about metacognitive reading strategies while they did understand certain cognitive reading skills. Consequently, these teachers tended to avoid applying any metacognitive reading strategies in their classes. Bamanger and Gashan (2014) explored reading strategies in Saudi EFL classes and found that reading aloud, scanning, demonstrating vocabulary, translating words, asking students about the reading to check their comprehension, and teaching them to practice guessing for unknown words were common practices.

Thus, this study has shown that Saudi culture has had a strong influence on Saudi reading culture. Widespread literacy and public education are relatively recent, and illiteracy among the older generations affects the younger generations' reading practices and comprehension. Most participants indicated a lack of knowledge about metacognitive reading strategies, pointing to issues with teaching practices. Limited research has been done on Saudi online reading skills, especially metacognitive strategies. As a result, this study considered the issue of online reading before discussing online metacognitive reading strategies.

Online Reading and Metacognitive Reading Strategies

Al-Saraj (2014) explained that Saudi Arabia has been undergoing enormous changes stemming partially from new technology. Therefore, investigating the types of devices used for online reading can provide valuable information about learners' reading preferences, which may affect their reading comprehension. This study has thus taken into consideration the type of multimedia used by participants for online reading. Over 70% of participants (see Table 8) reported their preference for using smartphones for online reading, even though smartphone readers encounter difficulties because of font size, text visibility, and difficulty in scrolling up or down (Bernard, Chaparro, Mills, & Halcomb, 2002; Darroch, Goodman, Brewster, & Gray, 2005; Rello, Pielot, & Marcos, 2016). In contrast, less than 36% identified computers as their primary device for online reading, and less than 15% reported using a tablet or iPad for that purpose. Consequently, the use of smartphones in education is rapidly increasing, and more students are using their phones to practice literacy skills or use those skills to learn and communicate with the rest of the world.

One of the most significant factors for achieving success in reading is awareness of certain metacognitive strategies (Grabe, 2009). A reader needs the ability to monitor and be

aware of the comprehension process during reading (Mokhtari & Reichard, 2004). Metacognitive awareness makes readers able to activate successful reading strategies since it is related to mind strategies and techniques and the actions being considered when reading (Mokhtari & Sheorey, 2002). Therefore, the use of reading strategies plays a significant role in reading comprehension, especially L2 reading comprehension (Block, 1992).

Metacognitive Reading Strategy Use Based on Learning Background and Gender

Since this study started by examining Saudi college students' Arabic metacognitive reading strategies, a further possible explanation for choosing certain reading strategies is discussed so as to understand the link between metacognition and actual ongoing literacy practice. Based on Oxford and Crookall's (1989) classification of factors that impact the choice of reading strategies (e.g., education level, cultural background, gender, education background, learning style), this study also considered gender and language learning background when examining Saudi online metacognitive reading strategies.

Block (1986) showed that EFL college students who were not as proficient at reading as native students were more conscious about metacognitive strategies while reading. However, the current study revealed no significant differences between EFL and ESL students when using metacognitive strategies during English online reading. Moreover, level of language proficiency had no significant impact on frequency of applying the metacognitive strategies. According to Table 11, no significant differences were found between EFL and ESL participants when employing reading strategies, even though most ESL participants reported language levels of upper intermediate or advanced and thus were more proficient than the EFL participants.

This result means that both those with high and low language proficiency were moderate users of metacognitive reading strategies, casting doubt on the findings of Arrastia et al. (2016),

which claimed that those with both high and low language proficiency were lower users of strategies than those at an average level. In fact, while most studies have revealed that EFL students tended to widely use metacognitive reading strategies, especially problem-solving strategies, in English reading (e.g., Alsheikh & Mokhtari, 2011; Hong-Nam & Page, 2014; Malcolm, 2009; Sheorey & Mokhtari, 2001), the study results showed no significant differences between Saudi EFL and ESL participants when deploying metacognitive reading strategies or problem-solving strategies.

Still, problem-solving strategies were used more often than other categories by EFL and ESL participants. Additionally, very slight differences (see Table 11) were apparent between the EFL and ESL groups in applying online metacognitive reading strategies; hence, EFL students of both genders had a slightly higher rate in using global and problem-solving strategies compared to ESL participants. This was especially true of male EFL participants. One of the most interesting outcomes was that male ESL participants used more metacognitive support strategies than male EFL participants. Abu Shmais (2002), who studied Palestinian college students' learning strategies, especially metacognitive strategies, found gender had no significant effect on learning strategies. However, Table 11 shows a statistically significant effect from gender in all three types of metacognitive reading strategies (global, support, and problem-solving).

Global reading and problem-solving strategies were used more by both genders than support strategies in online reading. In contrast, Alsheikh's (2011) found an increase in the use of support and problem-solving strategies in English reading but no significant differences in the use of global strategies. Even though most prior studies found Saudi women outweighed men in English achievements (e.g., Al-Nujaidi, 2003; Ismail, 2015), this study indicated that regardless

of learning background, Saudi men and women tended to use more global and problem-solving strategies for online reading.

Gender differences between Saudi EFL and ESL participants when applying online metacognitive English reading strategies were repeatedly found in the survey responses. Interestingly, men reported employing more reading strategies than women for all three metacognitive strategy categories. These outcomes challenge previous studies on gender differences, where women applied learning and reading strategies more than men (e.g., Al-Nujaidi, 2003; Green & Oxford, 1995; Ismail, 2015; Lin, 2001; Sheorey & Mokhtari, 2001; Teh et al., 2009). It also supports claims that men are bigger users of reading and learning strategies, especially for second or foreign languages (Tercanlioglu, 2004; Tran, 1988).

Only minor differences were found between Saudi ESL and EFL readers when using online English reading strategies. Global and problem-solving reading strategies were used more than support strategies during English reading. Language proficiency level did not have an impact on choosing English metacognitive reading strategies. Finally, men used global, support, and problem-solving metacognitive online reading strategies more than women, regardless of language learning background (EFL/ESL).

Metacognitive Reading Strategies Based on Language and Gender

To date, only a few research efforts have examined bilingual speakers' metacognitive reading strategies. Specifically, there is a noticeable shortage of studies that have examined Arab learners and their reading struggles (Endley, 2018; Mukhlif & Amir, 2017). Therefore, Arabic-speaking students' metacognitive reading strategy awareness has not been widely studied (Abbott, 2006; Arrastia et al., 2016; Malcolm, 2009). Alsheikh and Mokhtari (2011) investigated the use of metacognitive reading strategies in Arabic and English among Arabic-speaking

college students in the US and found that problem-solving and support strategies were used in both languages (although they were used more frequently in Arabic), while fewer global strategies were used. Some more recent studies have investigated Arab metacognitive reading strategies (e.g., Alhaqbani & Riazi, 2012; Jounto & Mustapha, 2016; Omar, 2014; Ostovar-Namaghi & Noghabi, 2014; Sitindaon et al., 2013) and found that Arab learners extensively used problem-solving strategies for reading, were only moderate users of global reading strategies, and used support strategies even less frequently.

Since no previous studies had explored Saudi Arabic metacognitive online reading strategies, this study sought to learn more about such strategies while investigating English use as a second or foreign language. It should be noted that Arabic and English come from different language families and differ considerably in many major linguistic and ethnographic areas (Alsamadani, 2010). Recent ethnographic theory claims that reading difficulties come as a result of differences between L1 and L2 ethnographic knowledge (Barcroft, 2015). Based on this assumption, L1 has an undeniable interrelationship with L2, especially for the reading process. This understanding implies that if the L1 (Arabic) has a close ethnographic relationship with the second or foreign language, that connection will make the processing of reading content easier. It is necessary, therefore, to understand major Arabic ethnographic and linguistic features before discussing Saudi L1 processing strategies.

The way readers process Arabic texts is different from English; the processing of Arabic is not only connected to sentence structure but is also tied to parallel and coordinated sentence construction (Al-Shormani, 2010). This implies Arabic readers are likely to be more careful and slower readers since they have to pay more attention to all the words and letters when they read. Ryan and Meara (1991) in their study of ESL Arabic speakers' invisible vowels observed that

lower intermediate and intermediate readers of English were much slower than other non-native readers. Consequently, the nature of the Arabic language requires readers to put more mental effort into the process of reading, which might imply they use different metacognitive reading strategies compared to other languages.

Overall, the study found that regardless of gender, Saudi participants, especially women, tended to use more metacognitive strategies in reading Arabic texts online. Specifically, global and problem-solving strategies were applied more frequently in Arabic and English, while support strategies were less frequently used. This study supports Alsheikh and Mokhtari's (2011) findings that problem-solving and support strategies were used in both languages even though they were used more frequently in Arabic and global strategies were used less by Saudi students, especially women. In contrast, this study's findings do not support the claim that Arabic multilingual speakers use more metacognitive reading strategies with their least proficient language (Alsheikh, 2011; Mokhtari, 2008) since Saudis in this study tended to use more metacognitive strategies with their L1.

However, there were no significant differences between the two languages (Arabic and English) in terms of the use of online metacognitive reading strategies, excluding gender as a factor. The study addresses Alsheikh's (2002) study, which claimed there was an extensive use of metacognitive reading strategies in L2 reading but much less for L1 reading due to high language proficiency. Although support strategies were used more by Saudis with the L2 than the L1, there were no major differences between the use of global or problem-solving strategies between the two languages. Furthermore, this study does not support previous researchers (e.g., Alhaqbani & Riazi, 2012; Jounto & Mustapha, 2016; Omar, 2014; Ostovar-Namaghi & Noghabi,

2014; Sitindaon et al., 2013) who claimed Arabic speakers are extensive users of problem-solving strategies and only moderate users of global reading strategies.

Given recent advancements in technology, more people use small devices as the primary medium for their literacy practices. In this study, Saudi men and women showed a significant difference in their use of global, support, and problem-solving metacognitive online reading strategies when the language used (Arabic or English) was not taken into consideration. Similarly, EFL/ESL and Arabic speakers did not differ in their use of metacognitive online reading strategies when gender was not considered.

However, male English speakers used global, support, and problem-solving strategies more often than female English speakers, while Arabic speakers did not significantly differ in their use of these strategies based on gender. Nevertheless, women tended to use more metacognitive reading strategies in Arabic than men, while men employed more English metacognitive reading strategies than women for all three metacognition strategies.

In terms of the difference between EFL and ESL, global and problem-solving strategies were used more often during English reading. Language proficiency did not play an influential role in choosing metacognitive strategies. However, gender did play a crucial role as men used global, support, and problem-solving strategies more often than women, regardless of language background (EFL/ESL).

Chapter 6

Conclusions

Implications of the Study

This study demonstrated that Saudi participants were below average in their reading practices in Arabic and English. The outcomes encourage further study and call for Saudi social and educational reform in literacy practices to resolve the issues identified. These issues include, but are not limited to, the following.

In family education, literacy is oriented around the parents and other caregivers' education and literacy practices. Consequently, it is clear that Saudi families overall have a low level of literacy practice, and Saudi parents must spend more time and effort to invest in their family education by reading and encouraging more family reading because more reading leads to better comprehension skills.

Literacy education in Saudi schools needs to undergo reform to enhance teachers' ability to develop students' comprehension skills. The study found that none of the Saudi college students recognized metacognitive reading strategies, a finding that suggests the need to provide education related to this concept when reforming Saudi literacy education.

Metacognitive reading strategies must be considered in teaching Saudi reading classes in Arabic or English, especially in students' L1, in order to develop their reading comprehension skills. Consequently, Saudi students will be more engaged in reading classes.

Finally, for a stronger focus on Saudi reading skills, cultural issues and online reading practice need to become a priority that must be properly taught to students so they can cope with recent advancements in education tools. The study showed Saudis had not been taught how to use online reading tools effectively and tended to use their phones rather than computers for

reading. Lack of proper knowledge of online reading affects the application of online metacognitive reading strategies.

Limitations of the Study

This study sought to examine Saudi use of online metacognitive reading strategies. Exploring the online comprehension practices of any community must start by understanding their online reading practices. Such practices are best studied longitudinally to investigate the environment and home and school online literacy practices in order to establish a conceptual image of Saudi online reading practices. Most studies that have examined literacy cultures and practices have been longitudinal, giving them more time to explore home and school roles in literacy development. This was a mixed-methods study with a limited timeframe. Examining Saudi literacy culture more comprehensively requires more time to review and explore concepts related to current cultural literacy practices.

In addition, the researcher was not able to conduct interviews with women due to cultural and religious barriers. Thus, the study focused on Saudi male assumptions about their metacognition reading practices. Female points of view about such practices should be considered in greater depth in future studies.

Finally, metacognitive reading strategies cannot be studied well using surveys alone, especially for Saudis who live in a culture where social media is extensively used for multiple purposes. Social media plays a crucial role in the lives of Arabs, especially following the Arab Spring. Hence, understanding Saudi online reading and its characteristics and practices cannot be fulfilled without sufficient field experience to detect participants' online reading processes and practices.

Future Research Directions

This study leaves many avenues for further research. Future studies should ask alternative or more specific questions to reveal more in-depth educational information Saudi Arabia's evolving literacy practices.

Almost no studies have explored Saudi home and social literacy practices. Future studies on Saudi home literacy practices should gather more information about the influence of parents, siblings, and family members on the development of reading comprehension.

Information about formal Saudi teaching of reading comprehension is limited, especially regarding primary school literacy teaching practices. There is thus a need for research on these practices since most studies have focused on teaching methodologies.

There is a shortage of studies on Saudi online reading even though recent advancements in technology have made online reading skills an essential component of academic success. Arab social media reading practices and their impact on Arab literacy practices should also be explored, especially after the Arab Spring, where it became clear social media can have a powerful influence on people's lives in the region.

Study Summary

This study's purpose was to examine Saudi online metacognitive reading strategies. It also detailed current Saudi literacy practices and their impact on reading comprehension. Language learning background (EFL/ESL) and gender (male/female) were considered. The study recruited 114 participants: 61 EFL students from Saudi Arabia and 53 ESL Saudi learners pursuing a degree or were working in native speaking English countries. Quantitative and qualitative methods were employed. The quantitative data were collected through an integrative survey that provided details about Saudi literacy practices and online metacognitive reading

strategies. The study focused on investigating the use of three subcategories of metacognitive reading strategies (global, support, and problems-solving strategies). The qualitative data were collected through interviews with five participants to enrich the survey data.

Conclusion

Results showed that men and women did not significantly differ in their use of global, support, and problem-solving metacognitive online reading strategies when language was not taken into consideration. When language background was considered, gender had an influential role in applying metacognitive reading strategies. EFL participants of both genders reported a slightly higher rate of using global and problem-solving strategies than ESL participants. One of the most interesting outcomes was that male ESL learners reported using more metacognitive support strategies than male EFL learners.

Similarly, EFL/ESL and Arabic speakers did not differ in their use of any of the metacognitive online reading strategies when gender was not considered. However, male English speakers used global, support, and problem-solving strategies more often than female English speakers, while men and women did not differ in their use of any strategies when reading in Arabic. In general, gender did play a crucial role in applying metacognitive strategies as it was found that men used global, support, and problem-solving strategies more than women, regardless of language background (EFL/ESL). Specifically, men reported employing more reading strategies than women for global, support, and problem-solving strategies. These findings challenge those of previous studies in which women reported greater use of learning and reading strategies (cf. Green & Oxford, 1995; Lin, 2001; Sheorey & Mokhtari, 2001; Teh et al., 2009). However, problem-solving strategies were used more by participants of both genders in both languages.

Regarding the differences between EFL and ESL students, global and problem-solving strategies were used more when reading in English. Language proficiency did not play an influential role for Saudis when choosing metacognitive online reading strategies. While most of the data revealed that EFL participants tended to widely use metacognitive reading strategies, especially problem-solving strategies, in English reading (cf. Alsheikh & Mokhtari, 2011; Hong-Nam & Page, 2014; Malcolm, 2009; Sheorey & Mokhtari, 2001), the results showed no significant differences between Saudi EFL and ESL participants when deploying metacognitive strategies.

References

- Abu Radwan, A. (2011). Effects of L2 proficiency and gender on choice of language learning strategies by university students majoring in English. *The Asian EFL Journal Quarterly*, 13(1), 115–163.
- Abu Shmais, W. A. (2002). Identifying the metacognitive reading strategies of Arab university students: A case study. *An-Najah University Journal for Research*, 16, 633–661.
Retrieved from http://journals.najah.edu/media/journals/full_texts/identifying-metacognitive-reading-strategies-arab-university-students-case-study.pdf
- Adesope, O. O., Lavin, T., Thompson, T., & Ungerleider, C. (2010). A systematic review and meta-analysis of the cognitive correlates of bilingualism. *Review of Educational Research*, 80(2), 207–245.
- Ahmadi, M. R., & Hairul, N. I. (2012). Reciprocal teaching as an important factor of improving reading. *Journal of Studies in Education*, 2(4). <https://doi.org/10.5296/jse.v2i4.2584>
- Ahmadi, M. R., Ismail, H. N., & Abdullah, M. K. K. (2013). The importance of meta cognitive reading strategy awareness in reading comprehension. *English Language Teaching*, 6(10), 235–244.
- Al Ghazali, F. (2017). Scrutinizing the factors affecting fluency of English among Arab learners. *European Journal of Educational Research*, 6(2), 135–144.
- AlAbik, W. (2014). Assessment of reading comprehension of Saudi students' majoring in English at Qassime University, Saudi Arabia. *Studies in Literature and Language*, 9(1), 155–162.

- Alateeq, Z. (2016). *Understanding the factors influencing Saudi primary students' reading engagement: A mixed methods approach* (Doctoral dissertation). Retrieved from <http://etheses.whiterose.ac.uk/13796/1/Ziyad%27s%20Thesis%20August%202016.pdf>
- Al-Buainain, H. (2010). Language learning strategies employed by English majors at Qatar University: Questions and queries. *Asiatic: IIUM Journal of English Language and Literature*, 4(2). Retrieved from <https://journals.iium.edu.my/asiatic/index.php/AJELL/article/view/525/492>
- Al-Dawaideh, A. M., & Al-Saadi, I. A. (2013). Assessing metacognitive awareness of reading strategy use for students from the faculty of education at the University of King Abdulaziz. *Mevlana International Journal of Education*, 3(4), 223–235.
- Alexander, P. A., & Fox, E. (2004). Historical perspectives on reading research and practice. In R. B. Ruddell & N. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 33–59). Newark, DE: International Reading Association.
- Alhaisoni, E. (2012). Language learning strategy use of Saudi EFL students in an intensive English learning context. *Asian Social Science*, 8(13), 115–127.
- Alhaqbani, A., & Riazi, M. (2012). Metacognitive awareness of reading strategy use in Arabic as a second language. *Reading in a Foreign Language*, 24(2), 231–255.
- Alharbi, H. (2015). Improving students' English speaking proficiency in Saudi public schools. *International Journal of Instruction*, 8(1), 105–116.
- Alharbi, Y. G. (2019). A review of the current status of English as a foreign language (EFL) education in Saudi Arabia. *Global Journal of Education and Training*, 2(1). Retrieved from <http://www.gjetonline.com/wp-content/uploads/2018/11/vol2-Issue1-Paper1.pdf>

- Alhaysony, M. (2017). Language learning strategies use by Saudi EFL students: The effect of duration of English language study and gender. *Theory and Practice in Language Studies*, 7(1), 18–28.
- Alkhazim, M. A. (2003). Higher education in Saudi Arabia: Challenges, solutions, and opportunities missed. *Higher Education Policy*, 16(4), 479–486.
- Al-Mashary, A. (2006). *The problems of teaching English to the secondary schools students in KSA from teachers and supervisors perspectives* (Unpublished master's thesis). King Saud University, Riyadh, Saudi Arabia.
- Al-Mekhlafi, A. M. (2018). EFL learners' metacognitive awareness of reading strategies. *International Journal of Instruction*, 11(2), 297–308.
- Al-Melhi, A. M. (2000). *Analysis of Saudi college students' reported and actual reading strategies along with their metacognitive awareness as they read in English as a foreign language* (Doctoral dissertation). <https://doi.org/10.25335/M5Z60C54J>
- Al-Nujaidi, A. (2003). *The relationship between vocabulary size, reading strategies, and reading comprehension* (Master's thesis). Retrieved from <https://shareok.org/bitstream/handle/11244/44607/Thesis-2003D-A452r.pdf?sequence=1>
- Al-Otaibi, G. (2004). *Language learning strategy use among Saudi EFL students and its relationship to language proficiency level, gender and motivation* (Unpublished doctoral dissertation). Indiana University of Pennsylvania, Indiana, PA.
- Arabai, F. (2016). Factors underlying low achievement of Saudi EFL learners. *International Journal of English Linguistics*, 6(3), 21–37.
- Arabai, F. (2017a). Exploring the unknown: The autonomy of Saudi EFL learners. *English Language Teaching*, 10(5), 222–233.

- Alrabai, F. (2017b). From teacher dependency to learner independence: A study of Saudi learners' readiness for autonomous learning of English as a foreign language. *Learning and Teaching in Higher Education: Gulf Perspectives*, 14(1), 1–28.
- Al-Rasheed, M. (2010). *A history of Saudi Arabia*. New York, NY: Cambridge University Press.
- Alrashidi, O., & Phan, H. (2015). Education context and English teaching and learning in the Kingdom of Saudi Arabia: An overview. *English Language Teaching*, 8(5), 33–44.
- Al-Rojaie, Y. (2011). Saudi EFL reading teachers' pedagogical beliefs and practices: A qualitative case study. *Journal of Arabic and Human Sciences-Qassim University*, 5(1), 1–19.
- Alsamaani, A. (2012). Assessing Saudi learners' beliefs about English language learning. *International Journal of English and Education*, 1(2), 31–55.
- Alsamadani, H. A. (2009). *The relationship between Saudi EFL college-level students' use of reading strategies and their EFL reading comprehension* (Doctoral dissertation). Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.842.5495&rep=rep1&type=pdf>
- Alsamadani, H. A. (2010). The relationship between Saudi EFL students' writing competence, L1 writing proficiency, and self-regulation. *European Journal of Social Sciences*, 16(1), 53–63.
- Alsamadani, H. A. (2011). Saudi students' awareness of reading strategies and factors affecting their EFL reading comprehension. *British Journal of Arts and Social Sciences*, 2(2), 75–87.
- Al-Saraj, T. M. (2014). Foreign language anxiety in female Arabs learning English: Case studies. *Innovation in Language Learning and Teaching*, 8(3), 257–278.

- Al-Seghayer, K. (2014). The four most common constraints' affecting English teaching in Saudi Arabia. *International Journal of English Linguistics*, 4(5), 17–26.
<http://dx.doi.org/10.5539/ijel.v4n5p17>
- Alsheikh, N. (2009). *The strategic reading of native speakers of Arabic*. Saarbrücken, Germany: VDM Verlag.
- Alsheikh, N. (2011). Three readers, three languages, three texts: The strategic reading of multilingual and multiliterate readers. *The Reading Matrix*, 11(1), 34–53.
- Alsheikh, N. (2014). The perceived and actual use of meta cognitive reading strategies by the UAE high school students. *Journal of ELT and Applied Linguistics*, 2(1), 140–153.
- Alsheikh, N. O., & Mokhtari, K. (2011). An examination of the metacognitive reading strategies used by native speakers of Arabic when reading in English and Arabic. *English Language Teaching*, 4(2), 151–160.
- Al-Shormani, M. (2010). *Semantic errors committed by Arab learners of English: Classifications and L1 and L2 sources*. Retrieved from <http://www.scribd.com/doc/25280229/Semantic-Errors-Committed-by-Arab-Learnersof-Engl>
- Alshumaimeri, Y. (2011). The effects of reading method on the comprehension performance of Saudi EFL students. *International Electronic Journal of Elementary Education*, 4(1), 185–195.
- Alshumaimeri, Y. A. (2008). Perceptions and attitudes toward using CALL in English classrooms among Saudi secondary EFL teachers. *The JALT CALL Journal*, 44(2), 29–66.
- Al-Sobhani, Y. A. Y. (2013). Metacognitive reading strategies use by Yemeni EFL undergraduate university students. *Frontiers of Language and Teaching*, 4, 121–133.

- Anderson, N. (2003). Scrolling, clicking, and reading English: Online reading strategies in a second/foreign language. *The Reading Matrix*, 3(3), 1–33. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.110.2782>
- Anderson, N. J. (2004). Metacognitive reading strategy awareness of ESL and EFL learners. *The CATESOL Journal*, 16(1), 11–28.
- Arrastia, M. C., Zayed, A. M., & Elnagar, H. Z. (2016). Metacognitive awareness of reading strategies among English as a foreign language (EFL) preservice teachers: An exploration of gender and developmental differences. *International Research in Higher Education*, 1(2), 46–55.
- Asikcan, M., & Saban, A. (2018). Prospective teachers' metacognitive awareness levels of reading strategies. *Cypriot Journal of Educational Sciences*, 13(1), 23–30.
- Ateş, A. (2013). The university students' metacognitive awareness of reading strategies (İnönü University case). *International Journal of Turkish Literature Culture Education (TEKE)*, 2(4). Retrieved from <http://dergipark.ulakbim.gov.tr/teke/article/view/5000013754>
- Auerbach, E. R., & Paxton, D. (1997). “It’s not the English thing”: Bringing reading research into the ESL classroom. *TESOL Quarterly*, 31(2), 237–261.
- Baddeley, A. (2007). *Working memory, thought, and action*. New York, NY: Oxford University Press.
- Baddeley, A., Eysenck, M. W., & Anderson, M. C. (2009). *Memory*. New York, NY: Oxford University Press.
- Baker, E. (Ed.). (2010). *The new literacies: Multiple perspectives on research and practice*. New York, NY: Guilford.

- Baker, L. (1991). Metacognition, reading, and science education. In C. M. Santa & D. E. Alvermann (Eds.), *Science learning: Processes and applications* (pp. 2–13). Newark, DE: International Reading Association.
- Baker, L., & Brown, A. L. (1984a). Cognitive monitoring in reading. *Understanding Reading Comprehension, 12*(2), 21–44.
- Baker, L., & Brown, A. L. (1984b). Meta cognitive skills and reading. In D. P. Pearson (Ed.), *Handbook of reading research* (pp. 353–394). New York, NY: Longman.
- Bamanger, E., & Gashan, A. (2014). In-service EFL teachers' beliefs about teaching reading strategies. *English Language Teaching, 7*(8), 14–22.
- Banihani, M. S., & Abu-Ashour, K. M. (2015). The role of Jordanian schools in encouraging students' outside reading. *Journal of Education and Social Policy, 2*(1). Retrieved from http://jespnet.com/journals/Vol_2_No_1_March_2015/8.pdf
- Barcroft, J. (2015). Can retrieval opportunities increase vocabulary learning during reading? *Foreign Language Annals, 48*(2), 236–249.
- Baron, N. S. (2015). *Words onscreen: The fate of reading in a digital world*. New York, NY: Oxford University Press.
- Başaran, M. (2013). 4th grade students' using metacognitive reading strategies conditions and between the relationship reading comprehension and using these strategies. *Turkish Studies: International Periodical for the Languages, Literature and History of Turkish, 8*(8), 225–240.
- Bell, F. L. (2017). *Comprehension aids, internet technologies, and the reading of authentic materials by adult second language learners* (Doctoral dissertation). Retrieved from <https://diginole.lib.fsu.edu/islandora/object/fsu:175851/datastream/PDF/download/citatio>

n.pdf

- Bergey, B. W., Deacon, S. H., & Parrila, R. K. (2017). Meta cognitive reading and study strategies and academic achievement of university students with and without a history of reading difficulties. *Journal of Learning Disabilities, 50*(1), 81–94.
- Bernard, M. L., Chaparro, B. S., Mills, M. M., & Halcomb, C. G. (2002). Examining children's reading performance and preference for different computer-displayed text. *Behaviour & Information Technology, 21*(2), 87–96.
- Block, E. (1986). The comprehension strategies of second language readers. *TESOL Quarterly, 20*(3), 463–494.
- Block, E. (1992). See how they read: Comprehension monitoring of LI and L2 readers. *TESOL Quarterly, 26*, 319–343.
- Bowen, W. H. (2014). *The history of Saudi Arabia* (2nd ed.). Boston, MA: Credo Reference.
- Breznitz, Z. (2006). *Fluency in reading: Synchronization of processes*. New York, NY: Routledge.
- Brown, A. (1987). Meta cognition, executive control, self-regulation, and other more mysterious mechanisms. In F. Weinert & R. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65–116). Hillsdale, NJ: Erlbaum.
- Cakiroglu, A. (2007). *Ustbilissel strateji kullaniminin okudugunu anlama duzeyi dusuk ogrencilerde erisi artirimina etkisi* [Can reading strategies be successfully taught] (Unpublished doctoral dissertation). Gazi Universitesi, Ankara, Turkey.
- Carnegie Council on Advancing Adolescent Literacy. (2010). *Time to act: An agenda for advancing adolescent literacy for college and career success*. New York, NY: Carnegie Corporation of New York.

- Carrell, P. L. (1989). Meta cognitive awareness and second language reading. *The Modern Language Journal*, 73, 121–130.
- Carrell, P. L. (1991). Second language reading: Reading ability or language proficiency? *Applied Linguistics*, 12(2), 159–179.
- Carrell, P. L., Pharis, B. G., & Liberto, J. C. (1989). Metacognitive strategy training for ESL reading. *TESOL Quarterly*, 23(4), 647–678.
- Chamot, A. U., & El-Dinary P. (1999). Children's learning strategies in language immersion classroom. *The Modern Language Journal*, 83(3), 319–338.
- Chamot, A. U., & O'Malley, J. M. (1990). *Learning strategies in second language acquisition*. Oxford, UK: Oxford University Press.
- Charise, A. (2007). *More English, less Islam? An overview of English language functions in the Arabian/Persian Gulf*. Retrieved from <http://homes.chass.utoronto.ca/~cpercy/courses/eng6365-charise.htm>
- Çöğmen, S., & Saracaloğlu, S. A. (2010). Üst bilişsel okuma stratejileri ölçeğinin Türkçeye uyarlama çalışmaları [Adaptation of metacognitive reading strategies questionnaires into Turkish reading]. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 28(2), 91–99.
- Coiro, J. (2011). Predicting reading comprehension on the Internet: Contributions of offline reading skills, online reading skills, and prior knowledge. *Journal of Literacy Research*, 43(4), 352–392. doi:10.1177/1086296X11421979
- Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly*, 42(2), 214–257. doi:10.1598/RRQ.42.2.2

- Cook, V., & Bassetti, B. (Eds.). (2005). *Second language writing systems*. Bristol, UK: Multilingual Matters.
- Corkett, J. K., Parrila, R., & Hein, S. F. (2006). Learning and study strategies of university students who report a significant history of reading difficulties. *Developmental Disabilities Bulletin, 34*, 57–79.
- Coskun, S. (2011). *Bilissel farkindalik stratejilerine dayali okuma egitimi etkinliklerinin okudugunu anlama becerilerini gelistirmeye etkisi* [The effect of reading learning activities which based on cognitive awareness strategies on improving reading comprehension skills] (Unpublished master's thesis). Abant Izzet Baysal Universitesi, Bolu, Turkey.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles, CA: Sage.
- Cummins, J. (1991). Interdependence of first-and second-language proficiency in bilingual children. In E. Bialystok (Ed.), *Language processing in bilingual children* (pp. 70–89). Cambridge, UK: University of Cambridge Press.
- Curry, D. L., Reeves, E., & McIntyre, C. J. (2016). Connecting schools and families: Understanding the influence of home literacy practices. *Texas Journal of Literacy Education, 4*(2), 69–77.
- Darroch, I., Goodman, J., Brewster, S., & Gray, P. (2005). The effect of age and font size on reading text on handheld computers. In *IFIP conference on human-computer interaction* (pp. 253–266). Berlin, Germany: Springer.
- Deacon, S., Cook, K., & Parrila, R. (2012). Identifying high-functioning dyslexics: Is self-report of early reading problems enough? *Annals of Dyslexia, 62*, 120–134.

- Deacon, S., Parrila, R., & Kirby, J. (2006). Processing of derived forms in high-functioning dyslexics. *Annals of Dyslexia*, *56*, 103–128.
- Delgado, P., Vargas, C., Ackerman, R., & Salmerón, L. (2018). Don't throw away your printed books: A meta-analysis on the effects of reading media on reading comprehension. *Educational Research Review*, *25*, 23–38.
- Desoete, A., Roeyers, H., & De Clercq, A. (2003). Can offline meta cognition enhance mathematical problem solving? *Journal of Educational Psychology*, *95*(1), 188–200.
- Dillon, A. (1994). Designing usable electronic text: Ergonomic aspects of human information usage. *Educational Research*, *2*(7), 1248–1257.
- Dogan, B. (2002). *Okudugunu anlama stratejilerinin ogretimi ile ilgili alan yazin taramasi* [The influence of reading literature on reading comprehension strategies]. *Uludag Universitesi Egitim Fakultesi Dergisi*, *15*(1), 97–107.
- Duman, M., & Arsal, Z. (2015). *Turkce dersinde bilissel farkındalık okuma stratejileri ogretiminin etkililigi* [The effectiveness of teaching reading cognitive awareness strategies in Turkish]. *Milli Egitim*, *44*(206), 5–15.
- Eghlidi, M., Abdorrahimzadeh, S. J., & Sorahi, M. A. (2014). Metacognitive online reading strategies among graduate students: Does the proficiency level make a difference? *Modern Journal of Language Teaching Methods*, *4*(4), 57–70.
- Eilam, B., & Aharon, I. (2003). Students' planning in the process of self-regulated learning. *Contemporary Educational Psychology*, *28*(3), 304–334.
- Eilers, H. L., & Pinkley, C. (2006). Metacognitive strategies help students to comprehend all text. *Reading Improvement*, *43*(1), 13–29.

- Endley, M. J. (2018). When Arabic speakers read English words. *World English Journal*, 9(1).
<https://dx.doi.org/10.24093/awej/vol9no1.1>
- Faruk, S. (2014). Saudis' attitude towards English: trend and rationale. *Professional Communication and Translation Studies*, 7, 173–180.
- Feng, X., & Mokhtari, K. (1998). Reading easy and difficult texts in English and Chinese: Strategy use by native speakers of Chinese. *Asian Journal of English Language Teaching*, 8, 19–40.
- Flavell, J. H. (1976). Meta cognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231–235). Hillsdale, NJ: Lawrence Erlbaum.
- Flavell, J. H. (1979). Meta cognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906–911.
- Gallego, M., & Hollingsworth, S. (1992). Multiple literacies: Teachers' evolving perceptions. *Language Arts*, 69(3), 206–213.
- Garner, R. (1987). *Metacognition and reading comprehension*. Norwood, NJ: Ablex Publishing.
- Gee, J. P. (2007). *What video games have to teach us about learning and literacy* (2nd ed.). New York, NY: MacMillan.
- Georghiades, P. (2004). From the general to the situated: Three decades of metacognition. *International Journal of Science Education*, 26(3), 365–383.
- Ghafournia, N. (2014). Language learning strategy use and reading achievement. *English Language Teaching*, 7(4), 64–73.
- Gibson, W., Callery, P., Campbell, M., Hall, A., & Richards, D. (2005). The digital revolution in qualitative research: Working with digital audio data through Atlas.ti. *Sociological Research Online*, 10(1), 1–10.

- Gleed, A. (2013). *Booktrust reading habits survey 2013: A national survey of reading habits and attitudes toward books amongst adults in England*. London, UK: Booktrust.
- Goh, C. (2008). Meta cognitive instruction for second language listening development: Theory, practice and research implications. *RELC Journal*, 39(2), 188–213.
- Goldman, S. R., Braasch, J. L., Wiley, J., Graesser, A. C., & Brodowinska, K. (2012). Comprehending and learning from Internet sources: Processing patterns of better and poorer learners. *Reading Research Quarterly*, 47(4), 356–381.
- Goodman, K. S. (1973). Analysis of oral reading miscues: Applied psycholinguistics. In F. Smith (Ed.), *Psycholinguistics and reading*. New York, NY: Holt, Rinehart and Winston.
- Gough, P. B. (1972). One second of reading. *Visible Language*, 6(4), 291–320.
- Grabe, W. (2009). *Reading in a second language: Moving from theory to practice*. New York, NY: Cambridge University Press.
- Grabe, W. P., & Stoller, F. L. (2002). *Teaching and researching reading* (1st ed.). Harlow, UK: Longman.
- Grabe, W. P., & Stoller, F. L. (2013). *Teaching and researching reading* (2nd ed.). New York, NY: Routledge.
- Green, J. M., & Oxford, R. (1995). A closer look at learning strategies, L2 proficiency, and gender. *TESOL Quarterly*, 29(2), 261–297.
- Hamdan, A. R., Ghafar, M. N., Sihes, A. J., & Atan, S. B. (2010). The cognitive and metacognitive reading strategies of foundation course students in teacher education institute in Malaysia. *European Journal of Social Sciences*, 13(1), 133–144.
- Hartman, D. K., Morsink, P. M., & Zheng, J. (2010). From print to pixels: The evolution of cognitive conceptions of reading comprehension. In E. A. Baker (Ed.), *The new*

- literacies: Multiple perspectives on research and practice* (pp. 131–164). New York, NY: The Guilford Press.
- Henry, L. A. (2007). *Exploring new literacies pedagogy and online reading comprehension among middle school students and teachers: Issues of social equity or social exclusion?* (Doctoral dissertation). Retrieved from digitalcommons.uconn.edu/dissertations/AAI3282520
- Hermena, E. W., Sheen, M., AlJassmi, M., AlFalasi, K., AlMatroushi, M., & Jordan, T. R. (2017). Reading rate and comprehension for text presented on tablet and paper: Evidence from Arabic. *Frontiers in Psychology, 8*. doi:10.3389/fpsyg.2017.00257
- Herold, B. (2014). Q&A: Judging online vs. offline reading skills. *Education Week, 34*(8). Retrieved from <https://www.edweek.org/ew/articles/2014/10/15/08readingqa.h34.html>
- Hong-Nam, K. (2014). ELL high school students' metacognitive awareness of reading strategy use and reading proficiency. *TESL-EJ, 18*(1). Retrieved from <https://files.eric.ed.gov/fulltext/EJ1045201.pdf>
- Hong-Nam, K., & Page, L. (2014). Investigating metacognitive awareness and reading strategy use of EFL Korean university students. *Reading Psychology, 35*, 1–26. <http://dx.doi.org/10.1080/02702711.2012.675418>
- Hopkyns, S. (2014). The effects of global English on culture and identity in the UAE: A double-edged sword. *Learning and teaching in higher education: Gulf perspectives, 11*(2), 1–20.
- Hou, J., Rashid, J., & Lee, K. M. (2017). Cognitive map or medium materiality? Reading on paper and screen. *Computers in Human Behavior, 67*, 84–94. 10.1016/j.chb.2016.10.014
- Huang, H. C., Chern, C. L., & Lin, C. C. (2009). EFL learners' use of online reading strategies and comprehension of texts: An exploratory study. *Computers & Education, 52*, 13–26.

- Hudson, T. (2007). *Teaching second language reading*. New York, NY: Oxford University Press.
- Ilustre, C. A. (2011). Beliefs about reading, metacognitive reading strategies and text comprehension among college students in a private university. *Philippine ESL Journal*, 7, 28–47.
- İnceçay, G. (2013). Metacognitive online reading strategies applied by EFL students. *Eğitimde Kuram ve Uygulama*, 9(4), 390–407.
- Ismail, N. M. (2015). EFL Saudi students' class emotions and their contributions to their English achievement at Taif University. *International Journal of Psychological Studies*, 7(4), 19–42. <http://dx.doi.org/10.5539/ijps.v7n4p19>
- Iwai, Y. (2011). The effects of meta cognitive reading strategies: Pedagogical implications for EFL/ESL teachers. *The Reading Matrix*, 11(2), 150–159.
- Jimenez, V., Puente, A., Alvarado, J., & Arbillaga, L. (2009). Measuring metacognitive strategies using the reading awareness scale ESCOLA. *Electronic Journal of Research in Educational Psychology*, 7(2), 779–804.
- Jounto, A. A., & Mustapha, S. M. (2016). Libyan secondary school students' metacognitive online reading strategies and their English language performance. *International Journal of Humanities and Social Science Invention*, 5(12), 38–48.
- Jusoh, Z., & Abdullah, L. (2015). Online survey of reading strategies (OSORS): Students' online reading in academic context. *Malaysian Journal of Distance Education*, 17(2), 67–81.
- Kachala, F. (2007). *Developing a reading culture among the rural masses of Mwambo, Zomba District, Malawi: A concept for the 21st century and beyond*. Retrieved from <https://archive.ifla.org/IV/ifla73/papers/101-Kachala-en.pdf>

- Karbalaei, A. (2010). A comparison of the metacognitive reading strategies used by EFL and ESL readers. *The Reading Matrix*, 10(2). Retrieved from http://www.readingmatrix.com/articles/sept_2010/alireza_karbalaei.pdf
- Kaya, F. (2006). *Ilkogretim 4. sinif Turkce dersinde bazi ogrenme stratejilerinin okudugunu anlama ve tutuma etkisi* [The effect of learning strategies on reading comprehension and attitudes] (Unpublished master's thesis). Mustafa Kemal Universitesi, Hatay, Turkey.
- Kemp, N., Parrila, R. K., & Kirby, J. R. (2009). Phonological and orthographic spelling in high-functioning adult dyslexics. *Dyslexia*, 15(2), 105–128. doi:10.1002/dys.364
- Kerr, M. A., & Symons, S. E. (2006). Computerized presentation of text: Effects on children's reading of informational material. *Reading and Writing*, 19(1), 1–19.
- Khan, I. (2011). Learning difficulties in English: Diagnosis and pedagogy in Saudi Arabia. *Educational Research*, 2(7), 1248–1257.
- Kim, H., & Kim J. (2013). Reading from an LCD monitor versus paper: Teenagers' reading performance. *International Journal of Research Studies in Educational Technology*, 2, 15–24. doi:10.5861/ijrset.2012.170
- Kingsley, T., & Tancock, S. (2014). Internet inquiry: Fundamental competencies for online comprehension. *The Reading Teacher*, 67(5), 389–399. doi:10.1002/trtr.1223
- Klingner, J. K., Artiles, A. J., & Barletta, L. M. (2006). English language learners who struggle with reading: Language acquisition or LD? *Journal of Learning Disabilities*, 39(2), 108–128.
- Koda, K. (1994). Second language reading research: Problems and possibilities. *Applied Psycholinguistics*, 15(1), 1–28.
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. New

- York, NY: Cambridge University Press.
- Koda, K. (2007). Reading and language learning: Crosslinguistic constraints on second language reading development. *Language Learning*, 57, 1–44.
- Koda, K., & Reddy, P. (2008). Cross-linguistic transfer in second language reading. *Language Teaching*, 41(4), 497–508.
- Koda, K., & Zehler, A. M. (Eds.). (2008). *Learning to read across languages: Cross-linguistic relationships in first-and second-language literacy development*. New York, NY: Routledge.
- Kong, A. (2006). Connection between L1 and L2 readings: Reading strategies used by four Chinese adult readers. *The Reading Matrix*, 6(2), 19–45.
- Kummin, S., & Rahman, S. (2010). The relationship between the use of metacognitive strategies and achievement in English. *Procedia: Social and Behavioral Sciences*, 7, 145–150.
<http://dx.doi.org/10.1016/j.sbspro.2010.10.021>
- Langer, J. A., Bartolomé, L., Vásquez, O., & Lucas, T. (1990). Meaning construction in school literacy tasks: A study of bilingual students. *American Educational Research Journal*, 27, 427–471.
- Lankshear, C., & Knobel, M. (2006). *New literacies* (2nd ed.). Maidenhead, UK: Open University Press.
- Lau, K. (2006). Reading strategies used between Chinese good and poor readers: A think-aloud study. *Journal of Research in Reading*, 29(4), 383–399.
- Lau, K., & Chan, D. (2003). Reading strategy use and motivation among Chinese good and poor readers in Hong Kong. *Journal of Research in Reading* 26(2), 177–190.

- Leu, D. J. (2000). Literacy and technology: Deictic consequences for literacy education in an information age. In M. Kamil, P. Mosenthal, P. Pearson, & R. Barr (Eds.), *Handbook of reading research* (pp. 743–770). Mahwah, NJ: Lawrence Erlbaum.
- Leu, D. J., Kinzer, C. K., Coiro, J., & Cammack, D. W. (2004). Toward a theory of new literacies emerging from the Internet and other information and communication technologies. In R. B. Ruddell & N. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed., pp. 1570–1613). Newark, DE: International Reading Association.
- Leu, D. J., Kinzer, C. K., Coiro, J., Castek, J., & Henry, L. A. (2013). New literacies: A dual level theory of the changing nature of literacy, instruction, and assessment. In D. E. Alvermann, N. J. Unrau, & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 1150–1181). Newark, DE: International Reading Association.
- Lin, X. (2001). Designing metacognitive activities. *Educational Technology, Research and Development*, 49(2), 23–40.
- Liton, H. (2012). Developing EFL teaching and learning practices in Saudi colleges: A review. *International Journal of Instruction*, 5(2), 129–152.
- Magogwe, J. M. (2013). Metacognitive awareness of reading strategies of University of Botswana English as second language students of different academic reading proficiencies. *Reading & Writing: Journal of the Reading Association of South Africa*, 4(1), 1–8.
- Mangen, A., Walgermo, B. R., & Brønnick, K. (2013). Reading linear texts on paper versus computer screen: Effects on reading comprehension. *International Journal of Educational Research*, 58, 61–68.

- Margolin, S. J., Driscoll, C., Toland, M. J., & Kegler, J. L. (2013). E-readers, computer screens, or paper: Does reading comprehension change across media platforms? *Applied Cognitive Psychology, 27*, 512–519. doi:10.1002/acp.2930
- Martin, J. D., Martins, R. J., & Naqvi, S. (2017). Do Arabs really read less? “Cultural tools” and “more knowledgeable others” as determinants of book reliance in six Arab countries. *International Journal of Communication, 11*. Retrieved from <https://ijoc.org/index.php/ijoc/article/view/6550/2116>
- Martinez, A. C. L. (2008). Analysis of ESP university students’ reading strategy awareness. *IBERICA, 15*(1) 165–176.
- Mehrdad, A. G., Ahghar, M. R., & Ahghar, M. (2012). The effect of teaching cognitive and metacognitive strategies on EFL students’ reading comprehension across proficiency levels. *Procedia: Social and Behavioral Sciences, 46*, 3757–3763.
<http://dx.doi.org/10.1016/j.sbspro.2012.06.142>
- Melby-Lervåg, M., & Lervåg, A. (2014). Reading comprehension and its underlying components in second-language learners: A meta-analysis of studies comparing first-and second-language learners. *Psychological Bulletin, 140*(2), 409–433.
- Memiş, A., & Bozkurt, M. (2013). The relationship of reading comprehension success with metacognitive awareness, motivation, and reading levels of fifth grade students. *Educational Research and Reviews, 8*(15), 1242–1246.
- Meniado, J. C. (2016). Meta cognitive reading strategies, motivation, and reading comprehension performance of Saudi EFL students. *English Language Teaching, 9*(3), 117–129.
- Mokhtari, K. (2008). Perceived and real-time use of reading strategies by three proficient tri-literate readers: A case study. In K. Mokhtari & R. Sheorey (Eds.), *Reading strategies of*

- first- and second-language learners: See how they read* (pp. 143–160). Norwood, MA: Christopher-Gordon Publishers.
- Mokhtari, K., & Reichard, C. (2004). Investigating the strategic reading processes of first and second language readers in two different cultural contexts. *System*, 32(3), 379–394.
- Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education*, 25(3), 2–10.
- Mokhtari, K., & Sheorey, R. (Eds.). (2008). *Reading strategies of first- and second-language learners: See how they read*. Norwood, MA: Christopher-Gordon Publishers.
- Muhtar, S. (2006). *Ust bilissel strateji egitiminin okuma becerisinde ogrenci basarisina olan etkisi* [The effects of the metacognitive strategies training on reading performance] (Unpublished master's thesis). Ankara Universitesi, Ankara, Turkey.
- Mukhlif, Z., & Amir, Z. (2017). Investigating the metacognitive online reading strategies employed by Iraqi EFL undergraduate students. *Arab World English Journal*, 8(1). <http://dx.doi.org/10.2139/ssrn.2945916>
- Muljani, M., Koda, K., & Moates, D. (1998). Development of L2 word recognition: A connectionist approach. *Applied Psycholinguistics*, 19(1), 99–114.
- Nunan, D. (1992). *Research methods in language learning*. New York, NY: Cambridge University Press.
- Nurfadhilah, G. (2017). The investigation of students' metacognition in reading comprehension. *Journal of English and Education*, 4(1), 23–39.
- Olshavsky, J. E. (1976). Reading as problem solving: An integration of strategies. *Reading Research Quarterly*, 12, 654–674.
- Omar, N. A. (2014). Online metacognitive reading strategies use by postgraduate Libyan EFL

- students. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 8(7). Retrieved from <http://waset.org/publications/9998887>
- Onsman, A. (2011). It is better to light a candle than to ban the darkness: Government led academic development in Saudi Arabian universities. *Higher Education*, 62(4), 519–532.
- Ostovar-Namaghi, S. A., & Noghabi, A. E. (2014). A comparison of perceived use of the metacognitive reading strategies by Iranian master of science students for hypertext and printed academic materials. *Journal of Language Teaching and Research*, 5(4), 865–872.
- Owodally, A. M. (2014). Maternal reports of home literacy experiences in multilingual Mauritius: A case study of pre-schoolers. *Early Child Development & Care*, 184(11), 1615–1635.
- Oxford, R. (1990). *Language learning strategies: What every teacher should know*. Boston, MA: Heinle and Heinle.
- Oxford, R. (2002). Language learning strategies. In R. Carter & D. Nunan (Eds.), *The Cambridge guide to teaching English to speakers of other languages* (pp. 166–172). Cambridge, MA: Cambridge University Press.
- Oxford, R., & Crookall, D. (1989). Research on language learning strategies: Methods, findings, and instructional issues. *Modern Language Journal*, 73, 404–419.
- Pei, L. (2014). Does metacognitive strategy instruction indeed improve Chinese EFL learners' reading comprehension performance and metacognitive awareness? *Journal of Language Teaching and Research*, 5(5), 1147–1152. <http://dx.doi.org/10.4304/jltr.5.5.1147-1152>
- Perfetti, C. A., & Zhang, S. (1995). The universal word identification reflex. In D. L. Medin (Ed.), *Psychology of learning and motivation* (Vol. 33, pp. 159–189). San Diego, CA: Academic Press.

- Phakiti, A. (2003). A closer look at the relationship of cognitive and metacognitive strategy use to EFL reading achievement test performance. *Language Testing*, 20(1), 26–56.
- Phakiti, A. (2006). Modeling cognitive and metacognitive strategies and their relationships to EFL reading test performance. *Melbourne Papers in Language Testing*, 1(1), 53–96.
- Pikulski, J. J., & Chard, D. J. (2005). Fluency: Bridge between decoding and reading comprehension. *The Reading Teacher*, 58(6), 510–519.
- Poland, B. D. (1995). Transcription quality as an aspect of rigor in qualitative research. *Qualitative Inquiry*, 1(3), 290–310.
- Pookcharoen, S. (2009). *Metacognitive online reading strategies among Thai EFL university students* (Doctoral dissertation). Retrieved from ProQuest Dissertations Publishing. (3390322)
- Poole, A. (2005). Gender and academic reading strategies: A survey of adult EFL learners in Mainland China. *Hong Kong Journal of Applied Linguistics*, 10(2), 38–51.
- Porion, A., Aparicio, X., Megalaki, O., Robert, A., & Baccino, T. (2016). The impact of paper-based versus computerized presentation on text comprehension and memorization. *Computers in Human Behavior*, 54, 569–576. doi:10.1016/j.chb.2015.08.00
- Pressley, M., & Afflerbach, P. (1995). *Verbal reports of reading: The nature of constructively responsive reading*. Hillsdale, NJ: Lawrence Erlbaum.
- Pressley, M., Van Etten, S., Yokoi, L., Freebern, G., & Van Meter, P. (1998). The metacognition of college studentship: A grounded theory approach. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Metacognition in educational theory and practice* (pp. 347–363). Mahwah, NJ: Lawrence Erlbaum.
- Rahimi, M., & Katal, M. (2012). Metacognitive strategies awareness and success in learning

- English as a foreign language: An overview. *Procedia: Social and Behavioral Sciences*, 31, 73–81.
- Rahman, M., & Alhaisoni, E. (2013). Teaching English in Saudi Arabia: Prospects and challenges. *Academic Research International*, 4(1), 112–118.
- Ramli, N. F. M., Darus, S., & Abu Bakar, N. (2011). Metacognitive online reading strategies of adult ESL learners using a learning management system. *Theory and Practice in Language Studies*, 1(3), 195–204. <http://dx.doi.org/10.4304/tpls.1.3.195-204>
- Raoofi, S., Chan, S. H., Mukundan, J., & Rashid, S. M. (2013). Metacognition and second/foreign language learning. *English Language Teaching*, 7(1), 36–49.
- Rasmusson, M. (2014). Reading paper – reading screen: A comparison of reading literacy in two different modes. *Nordic Studies in Education*, 35, 3–19.
- Rello, L., Pielot, M., & Marcos, M. C. (2016). Make it big! The effect of font size and line spacing on online readability. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (pp. 3637–3648). New York, NY: ACM.
- Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). *Generation M2: Media in the lives of 8- to 18-Year-Olds*. Oakland, CA: Henry J. Kaiser Family Foundation.
- Ridley, D. S., Schutz, P.A., Glanz, R. S., & Weinstein, C. E. (1992). Self-regulated learning: The interactive influence of metacognitive awareness and goal-setting. *The Journal of Experimental Education*, 60(4), 293–306.
- Riley, L. D., & Harsch, K. (1999). Enhancing the learning experience with strategy journals: Supporting the diverse learning styles of ESL/EFL students. Paper presented at the 1999 HERDSA Annual International Conference, Melbourne, Australia. Retrieved July 11, 2004. Retrieved from <http://herdsa.org.au/branches/vic/Cornerstones/authorframeset.html>

- Robson, C. (2002). *Real world research: A resource for social scientists and practitioner-researchers* (2nd ed.). Cambridge, MA: Blackwell.
- Rockinson-Szapkiw, A. J., Courduff, J., Carter, K., & Bennett, D. (2013). Electronic versus traditional print textbooks: A comparison study on the influence of university students' learning. *Computers & Education, 63*, 259–266. doi:10.1016/j.compedu.2012.11.022
- Roschke, K., & Radach, R. (2016). Perception, reading, and digital media. In C. M. Connor (Ed.), *The cognitive development of reading and reading comprehension* (pp. 33–52). New York, NY: Routledge.
- Royer, J. M., & Carlo, M. S. (1991). Transfer of comprehension skills from native to second language. *Journal of Adolescent & Adult Literacy, 34*(6), 450–455.
- Schraw, G., & Moshman, D. (1995). Metacognitive theories. *Educational Psychology Review, 7*, 351–371.
- Shaw, P., & McMillion, A. (2008). Proficiency effects and compensation in advanced second-language reading. *Nordic Journal of English Studies, 7*(3), 123–143.
- Sheorey, R., & Mokhtari, K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. *System, 29*, 431–449.
- Singer, L. M., & Alexander, P. A. (2017). Reading across mediums: Effects of reading digital and print texts on comprehension and calibration. *The Journal of Experimental Education, 85*(1), 155–172.
- Sitindaon, M., Wijaya, B., & Salam, U. (2013). Metacognitive online reading strategy practiced by English students. *Jurnal Pendidikan dan Pembelajaran, 2*(11). Retrieved from <https://www.neliti.com/publications/217307/metacognitive-online-reading-strategy-practiced-by-english-students>

- Snow, C. E. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. Santa Monica, CA: RAND Corporation.
- Sofi, L. A. (2015). *Teaching English in Saudi Arabia through the use of multimedia* (Master's thesis). Retrieved from <https://repository.usfca.edu/cgi/viewcontent.cgi?article=1143&context=capstone>
- Stanovich, K. E. (2009). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Journal of Education*, 189(1–2), 23–55.
- Stevenson, M., Schoonen, R., & Gloopers, K. (2003). Inhibition or comprehension? A multidimensional comparison of reading processes in Dutch and English. *Language Learning*, 53(4), 765–815.
- Street, B. V. (1993). Introduction: The new literacy studies. In B. V. Street (Ed.), *Cross-cultural approaches to literacy* (pp. 1–21). Cambridge, MA: Cambridge University Press.
- Suharni, T. (2017). The use of metacognitive reading strategies by EFL learners in reading. *Research in English and Education Journal*, 2(1), 9–18.
- Swanson, H. L. (1990). Influence of metacognitive knowledge and aptitude on problem solving. *Journal of Educational Psychology*, 82, 306–314.
- Taj, I. H., Ali, F., Sipra, M. A., & Ahmad, W. (2017). Effect of technology enhanced language learning on EFL reading comprehension at tertiary level. *Arab World English Journal*, 8(1). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2941443
- Tajedin, Z. (2001). *Language learning strategies: A strategy-based approach to L2 learning, strategic competence, and test validation* (Unpublished doctoral dissertation). Allameh Tabataba'i University, Tehran, Iran.

- Taki, S., & Soleimani, G. H. (2012). Online reading strategy use and gender differences: The case of Iranian EFL learners. *Mediterranean Journal of Social Sciences*, 3(2), 173–184.
- Tavakoli, H. (2014). The effectiveness of metacognitive strategy awareness in reading comprehension: The case of Iranian university EFL students. *Reading*, 14(2), 314–336.
- Teh, K. S. M., Embi, M. A., Yusoff, N. M. R. N., & Mahamod, Z. (2009). A closer look at gender and Arabic language learning strategies use. *European Journal of Social Sciences*, 9(3), 399–407.
- Temizkan, M. (2008). Bilissel okuma stratejilerinin Turkce derslerinde bilgiye dayali metinleri okudugunu anlama uzerindeki etkisi [The effects of cognitive reading strategies on the reading comprehension expository texts in Turkish lessons]. *GU Gazi Egitim Fakultesi Dergisi*, 28(2), 129–148.
- Temur, T., & Bahar, O. (2011). Metacognitive awareness of reading strategies of Turkish learners who learn English as a foreign language. *European Journal of Educational Studies*, 3(2), 421–427.
- Tercanlioglu, L. (2004). Exploring gender effect on adult foreign language learning strategies. *Issues in Educational Research*, 14. Retrieved from www.iier.org.au/iier14/tercanlioglu.html
- Topuzkanamiş, E., & Maltepe, S. (2010). Öğretmen adaylarının okuduğunu anlama ve okuma stratejilerini kullanma düzeyleri [Difference between the level of comprehension and the use of reading strategies]. *Journal of Türklük Bilimi Arastirmalari*, 15(27), 655–677.
- Torgesen, J. K., Houston, D. D., Rissman, L. M., Decker, S. M., Roberts, G., Vaughn, S., ... Lesaux, N. (2007). *Academic literacy instruction for adolescents: A guidance document*

- from the Center on Instruction*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Tran, T. (1988). Sex differences in English language acculturation and learning strategies among Vietnamese adults aged 40 and over in the United States. *Sex Roles, 19*(11–12), 747–758.
- Troike, R. C. (1978). Research evidence for the effectiveness of bilingual education. *Nabe Journal, 3*(1), 13–24.
- UNESCO. (2015). *Education: Literacy rates*. Retrieved from <http://data.uis.unesco.org/Index.aspx?queryid=166>
- Urquhart, S., & Weir, C. (1998). *Reading in a second language: Process, product and practice* (1st ed.). New York, NY: Longman.
- Vaičiūnien, V., & Užpalienė, D. (2013). Metacognitive online reading strategies in foreign language learning context at university. *Social Technologies, 3*(2), 316–329.
- Veenman, M. V. J. (2005). The assessment of metacognitive skills: What can be learned from multimethod designs? In C. Artelt & B. Moschner (Eds), *Lernstrategien und Metakognition: Implikationen für Forschung und Praxis* (pp. 75–97). Berlin, Germany: Waxmann.
- Wang, M. C., Heartel, G. D., & Walberg, H. J. (1990). What influences learning? A content analysis of review literature. *Journal of Educational Research, 84*, 30–43.
- Warschauer, M. (1999). *Electronic literacies: Language, culture, and power in online education*. Mahwah, NJ: Lawrence Erlbaum.
- Wenden, A. L. (1998). Metacognitive knowledge and language learning. *Applied Linguistics, 19*, 515–537. <http://dx.doi.org/10.1093/applin/19.4.515>
- Winne, P. H., & Baker, R. S. (2013). The potentials of educational data mining for researching

- meta cognition, motivation and self-regulated learning. *Journal of Educational Data Mining*, 5(1), 1–8.
- Wiseman, A. W. (2010). The uses of evidence for educational policymaking: Global contexts and international trends. *Review of Research in Education*, 34(1), 1–24.
<http://dx.doi.org/10.3102/0091732X09350472>
- Wright, W. E. (2015). *Foundations for teaching English language learners: Research, theory, policy, and practice*. Philadelphia, PA: Caslon.
- Xu, B., Chen, G., Sun, Y., & Huang, R. (2017). The effectiveness of media platforms on reading comprehension: A meta-analysis. In W. Chen (Ed.), *Proceedings of the 25th International Conference on Computers in Education* (pp. 638–643). Taoyuan City, Taiwan: Asia-Pacific Society for Computers in Education.
- Yüksel, İ., & Yüksel, İ. (2012). Metacognitive awareness of academic reading strategies. *Procedia: Social and Behavioral Sciences*, 31, 894–898.
- Zhang, L. J., & Wu, A. (2009). Chinese senior high school EFL students' metacognitive awareness and reading-strategy use. *Reading in a Foreign Language*, 21(1), 37–59.
- Zhang, L., & Seepho, S. (2013). Metacognitive strategy use and academic reading achievement: Insights from a Chinese context. *Electronic Journal of Foreign Language Teaching*, 10(1), 54–69.
- Zimmerman, B. J., & Schunk, D. H. (Eds.). (2001). *Self-regulated learning and academic achievement: Theoretical perspectives*. New York, NY: Routledge.
- Zohairy, S. (2015). *Applying DDL approach in teaching grammar interactively*. Retrieved from https://www.academia.edu/8234438/Applying_DDL_Approach_in_Teaching_Grammar_Interactively

Appendix A

Interviews

Interview Questions

1. Do you practice reading out of school curricula?
2. Do you usually read online? Tell me more about your online reading?
3. When read either in Arabic or English, do you apply a specific reading strategy?
4. Do you know metacognitive reading strategies?

1 Salem's Interview

Interviewer: How's your semester?

Salem: SO far SO good.

Interviewer: [ah] How do you find reading in ARABIC OR ENGLISH?

Salem: Well [um], it's somewhat enjoyable especially reading biographies and stories.....

Interviewer: You like stories?

Salem: Yeah [pause]

Interviewer: What makes reading STORIES and BIOGRAPHIES enjoyable?

Salem: [huh] there's NO specific REASON.

Interviewer: Okay [pause] how MANY PAGES do you read per hour, week, or month?

Salem: [um] I read biographies for an HOUR or a quarter of an hour.

Interviewer: Aha before reading biographies, have you read another TOPICS or BOOKS? And have you read a WHOLE story or book

Salem: I read MANY short STORIES from my CELLPHONE.

Interviewer: You read them in middle or high school.

Salem: YEAH, I read them in MIDDLE AND HIGH SCHOOL.

Interviewer: [huh] how did the reading teacher GUIDE you in class? DID he read the first line for you or show you the reading PICTURES?

Salem: [mmh] NO, NO, there was NO guidance.

Interviewer: [mmm] SO what're the most DIFFICULT ISSUES you face when you read.

Salem: Writer STYLE and DIFFICULT words make me a slower reader.

Interviewer: [um] do you face this problem in both LANGUAGES (Arabic, English) or just in ENGLISH?

Salem: NO, just in ENGLISH.

Interviewer: HOW do you deal with IT?

Salem: [um] I use a dictionary to translate... and I reread the PARAGRAPH trying to comprehend it.

Interviewer: OKAY, DO you KNOW metacognitive reading strategies? And do you usually APPLY them in READING?

Salem: YEAH, skimming, scanning in READING.... [um] I USE them in ENGLISH reading.

Interviewer: Well [pause] I assume that you are a SPEED reader in ARABIC,

Salem: [ah] yeah I'M a good reader in ARABIC.

Interviewer: In a quarter of an hour, how many pages do you read?

Salem: Almost SIX to SEVEN pages but I THINK about what I read.

Interviewer: DO your parents READ and WRITE.

Salem: [um] NO, my MOM doesn't READ or WRITE while my DAD does READ and WRITE.

Interviewer: [mmh] HOW about your sibling?

Salem: YEAH, they read and write.

Interviewer: [pause] when you were a kid, did ONE of your brothers or sister read a story to YOU?

Salem: [huh] YEAH, [pause] one of my sisters.

Interviewer: [mmh] THEY were NARRATING a story to you or READING a story?

Salem: [ah] they were NARRATING a story to me and a FEW times they were READING a story.

Interviewer: [um] DO you remember ONE of these stories?

Salem: [ha] NO, but most of them were SCARY stories.

Interviewer: [umm] it seems to me these stories were scarier than educational.

Salem: [um] [pause] THERE were NO educational stories where you can get real LESSONS.

Interviewer: OKAY, have you ever read a WHOLE book in a summer such as a novel or stories? You got a book that attracted you to read it from the beginning until the end.

Salem: [mmh] NO I swear to GOD.

Interviewer: WELL, have you ever seen one of your PARENTS read in home?

Salem: [um] YES, my dad has a library and he ALWAYS reads.

Interviewer: [pause] YOUR DAD'S library is an Islamic library?

Salem: [ah] Yeah, Islamic history books.

Interviewer: Has your dad ever TALKED about what he read to you as a FAMILY?

Salem: [um] YEAH, he had talked about it.

Interviewer: HE always does it or sometimes,

Salem: SOMETIMES during breakfast when he was in a good mood, he would narrate to us one of the prophets' stories or old stories.

Interviewer: [ah] WELL, what're your reading STRATEGIES?

Salem: [mmh] BY GOD I would start with trying to understand the topic of the reading, THEN, I read SLOWELY or STEP by step to read in anyway and I use my phone to read it to me.

Interviewer: [um] how do you use your PHONE to assist you in reading?

Salem: BY SOUND, I read it to MY PHONE then it shows the meaning and the picture of the word in English.

Interviewer: [um] if you face a reading PROBLEM, and it can't be solved by phone, how would you go over it?

Salem: [mmh] WELL, none of my family members can understand ENGLISH, so when I got in such difficult situations, I would go to my friend or send the word to him by WhatsApp.

Interviewer: [aha] you mean one of your colleagues who is in ADVANCED level.

Salem: NO NO he is with me in class but his LANGUAGE level is better than mine.

Interviewer: [um] OKAY, your colleagues would use a dictionary or how would he would assist you?

Salem: [pause] YEAH, he had travelled OUTSIDE of Saudi Arabia and his language is good.

Interviewer: [ah] WELL, Salem, is there something else about reading you would like to talk about?

Salem: [ah] NO, not at all.

2 Saleh's Interview

Interviewer: How're your CLASSES?

Saleh: FINE, it's midterms.

Interviewer: [um] How LONG have you been studying English?

Saleh: Over THREE years.

Interviewer: [pause] well, do you like READING?

Saleh: From books [huh].

Interviewer: From a book or a cellphone or iPad EITHER one?

Saleh: YEAH, I do.

Interviewer: What KIND of books do you like to read?

Saleh: Stories or SPORT history books....

Interviewer: What's the most INTERESTING thing you find in these books, What ATTRACTS you to read or in other words, are there any SPECIFIC features that motivate you to read about sport history?

Saleh: [ha] I THINK my interest in sports and its history attracts me to read about it.

Interviewer: [yeah] OKAY, you went to kindergarten before elementary school, RIGHT?

Saleh: NO, I directly got into elementary school.

Interviewer: [ah] WELL, your elementary school has a library.

Saleh: YEAH.

Interviewer: DID your reading teachers take you to the LIBRARY?

Saleh: [um] NOT on the first or second grade, they almost start to take us to the library from the FOURTH grade.

Interviewer: [pause] DO you remember the NAME of the reading teacher who usually took you to the library?

Saleh: [mmh] I remember his FAMILY name but I don't remember his FIRST name [coughing].

Interviewer: OKAY [tapping], [pause] FINE how about the books you were reading in the library.

Saleh: Mostly the books we read were PROPHET'S stories [mmh].

Interviewer: [yeah] well, do you REMEMBER anything from these stories,

Saleh: [ah] NO, I don't.

Interviewer: When your TEACHER took you to the library, the teacher would give a BOOK to each one of you and you would SIT to read it or you chose the book and the teacher went around one by one to teach you reading strategies.

Saleh: [um] NO NO, the books were already distributed on seats and WE read them.

Interviewer: When you took the book, what DID the teacher do after that?

Saleh: WE sat on a round table and everyone SILENTLY read for 40 to 45 minutes.

Interviewer: THE TEACHER, what was he doing during this TIME?

Saleh: [yeah] HE was sitting on his TABLE reading.

Interviewer: EVERYONE read alone and no INSTRUCTIONS on reading?

Saleh: YEAH, and the teacher mostly read the QURAN on his table.

Interviewer: [pause] HOW about the rest of the students, they were READING or what?

Saleh: [um] WELL, some of them DID, others NO.

Interviewer: AND [pause] the teacher was not READING or instructing those who didn't read.

Saleh: NO NEVER he reacted.

Interviewer: [ha] HOW was he teaching you about reading?

Saleh: AS LONG AS NO NOISE, he wouldn't ask.

Interviewer: What's the most difficult PROBLEM you face when you read?

Saleh: [yeah] in ENGLISH?

Interviewer: BOTH LANGUAGES.

Saleh: In ENGLISH sometimes the vocabulary can't be understood, [mmh] I mean meaning is hard to be fully understood WORD by WORD, though in Arabic I don't face PROBLEMS in reading.

Interviewer: HOW do you deal with ENGLISH reading PROBLEMS?

Saleh: I USE my phone to translate the TEXTS... [uh] I try to GUESS the meaning of vocabulary.

Interviewer: [um] DO you KNOW metacognitive reading strategies and do you USE them?

Saleh: YEAH, I USE guessing to understand difficult words in texts.

Interviewer: [ah] OKAY, HAVE you ever read a WHOLE story or a sport book?

Saleh: [um] [pause] NO, [pause] a full book no, just pieces from a book from my phone.

Interviewer: Have you EVER thought about reading a book?

Saleh: [huh] OF course.

Interviewer: HAVE you tried?

Saleh: [huh] [pause] NO I will do.

Interviewer: YOUR PARENTS can read and write?

Saleh: [ah] yeah you MEAN they are able to read, YES.

Interviewer: [yah] DO they have a college degree?

Saleh: NO, NO, my DAD has a high school and my MOM has just THIRD grade.

Interviewer: [ah] your DAD read in home?

Saleh: No, No, at all.

Interviewer: [ah] SO you don't have a library in your HOME?

Saleh: YEAH, we DON'T have one.

Interviewer: [aha] YOUR SIBLINGS study in a college?

Saleh: YES [pause].

Interviewer: [um] THEY have their bedroom libraries.

Saleh: A FULL library NO, just a couple of books.

Interviewer: These books are on their college major?

Saleh: NO, NO, these books aren't for university; they read them for pleasure such as stories...

Interviewer: [ah] HAVE one of your BROTHERS or sisters told you about what they read?

Saleh: [pause] NO, you mean a FULL story? NO, just something interesting from the books they read.

Interviewer: [uha] OKAY, when you face PROBLEMS in reading such as comprehension issues, what you would do, or what reading strategies would you use?

Saleh: ENGLISH [pause]?

Interviewer: [nodding "yes"]

Saleh: I would immediately translate words to understand and comprehend the meaning WHILE in Arabic I don't face any PROBLEMS in reading.

Interviewer: [um] IS there anything you would like to add about your reading experience?

Saleh: [ah] [pause] No nothing.

3 Mohammed's Interview

Interviewer: HOW do you find ENGINEERING?

Mohammed: [um] NOT bad.

Interviewer: [pause] SO, HOW do you find reading either Arabic or English?

Mohammed: IN Arabic, Hah.

Interviewer: [yeah] WHAT do you usually READ about?

Mohammed: [huh] I often read about the PROPHET companions and Islamic HISTORY.

Interviewer: [ah] what makes you enjoy reading Islamic history, or what attract you to reading history?

Mohammed: WRITER'S style, some writers integrate lessons with the history stories like Ali Mohammed Aslabee. I read all his books in Islamic history.

Interviewer: [umm] WERE you in kindergarten before elementary school?

Mohammed: NO [pause].

Interviewer: [aha] YOUR elementary school has a library?

Mohammed: NO.

Interviewer: NO library in your school?

Mohammed: JUST video tapes.

Interviewer: [aha], educational video tapes? Do you remember the teacher's NAME who usually took you to the video library?

Mohammed: Yeah, the reading teacher taught me reading from second grade until seventh grade and his name was Rashed.

Interviewer: DID your reading teacher give you something out of the curriculum?

Mohammed: HE was making reading COMPETITIONS in the class.

Interviewer: [mmh] INTERESTING, you don't have a library in the village or in the MOSQUE?

Mohammed: [aha] no but in the mosque there were some books, but I wasn't interested in reading.

Interviewer: [aha] and NOBODY ever took your class to read out of the class?

Mohammed: [ah] NO, there was a SOCIAL trend in 1998 or 1997 to get back to mudrasat (mosques lessons) after school to recite Quran and learn some Islamic teachings.

Interviewer: [umm] THEN, what?

Mohammed: [um] we got motivated to read.

Interviewer: What's the most difficult issue you face with reading either in Arabic or English?

Mohammed: English comprehension since I can't stay long in reading, I get BORED even if I try my best to work it out. On the other hand, in Arabic there are no problems. Even if there is something, it encourages me to search for it from another books.

Interviewer: [ah] regarding Arabic, have you ever read a WHOLE book?

Mohammed: YES [pause].

Interviewer: WHEN did you start to read Arabic books out of your school curriculum?

Mohammed: [hah] AFTER high school.

Interviewer: DO you remember the last time you read a book?

Mohammed: ALMOST a year ago.

Interviewer: [um] DO you remember the name of the book or what the book was about?

Mohammed: [aha], it was the history of BANE Aumea (an Islamic country in the 800s) country.

Interviewer: [ah], WHEN you have read these books, have you faced any struggles in connecting between meaning and dates.

Mohammed: [mmh] in dates and names sometimes happen between THE FATHER and THE UNCLE when I read history so I GOT confused who was performing the action and eventually I found that they all are cousins, and most of Arabic poems, classical Arabic poems, I just understand 40% from it and I need to search for meanings.

Interviewer: [aha] okay, when you have such issues, DO you have a specific strategy you use or do you just continue reading until you finish the reading?

Mohammed: [mmh] yeah, mostly I keep moving especially in poems because I don't understand it but dates and events I underline to return to them when I need them.

Interviewer: OKAY, do you know metacognitive reading STRATEGIES? If yes, DO you USE THEM?

Mohammed: NO, I do scanning when I READ.....[um] I also GUESS the meaning of difficult words in a text.

Interviewer: [aha] YOUR PARENTS can read and write?

Mohammed: YES.

Interviewer: THEY have a COLLEGE degree?

Mohammed: NO NO, they just can recite and memorize the QURAN.

Interviewer: [ya] YOU mean they can read and write but most of the stories they MEMORIZE by listening to them.

Mohammed: [um] YEAH YEAH, they learned stories from their ancestors and they narrate them to us.

Interviewer: WHEN did they start to narrate stories to you?

Mohammed: Since I was a kid; my DAD made me love stories and poems, he was saying he wished he could read. He INSPIRED me to read stories and I talked about them to my dad.

Interviewer: [ah] you remember the first story your dad told you about?

Mohammed: YEAH it was about Alwaleed bin Amugerah.

Interviewer: [um] THIS was before elementary school or during it?

Mohammed: NO after elementary school when I got more CONNECTED to my dad and I listened to him; before I wasn't close to him and I didn't care about stories.

Interviewer: YOUR MOM can't read or write?

Mohammed: [aha] NO she can READ and write but she's not interested in reading or writing.

Interviewer: [mmm] DOES anyone in your FAMILY have a library in the home?

Mohammed: I do [pause] I created a library in the home.

Interviewer: [um] your older SIBLINGS don't have a library?

Mohammed: NO, MY LIBRARY became a source for the whole family.

Interviewer: [aha] SO when did you start collecting books in your library?

Mohammed: Ten years ago or more.

Interviewer: In which SCHOOL level?

Mohammed: IN [ah] MIDDLE school.

Interviewer: Most of your library BOOKS are in HISTORY and LITERATURE?

Mohammed: [um] YEAH most of the books are history of PROPHET companions.

Interviewer: [pause] DO you have books in another language?

Mohammed: NO NO, just a simple shelf of books...

Interviewer: [huh] these books are college textbooks?

Mohammed: NOOOH NO, I don't put school textbooks with the rest of my library books because I DON'T like to see them there.

Interviewer: WHAT kind of books do you have in your home LIBRARY?

Mohammed: I [um] ADDED the politeness book for James Horne because I got a good discount deal on it from the library and I bought it, and another book in ENGLISH culture for Brien, [pause] I read but I got bored, hhh.

Interviewer: YOU read from these books?

Mohammed: [aha] YES, I READ but I only understand a little so comprehension makes me depressed.

Interviewer: [mmh] THEN, you give up.

Mohammed: YEAH, exactly.

Interviewer: YOU want to ADD something from your reading experience either in Arabic or in English?

Mohammed: YES, I decide to set a certain TIME [pause] TIME in my daily schedule to read a certain number of pages because I read for knowledge and KNOWLEDGE gives you a social position in the Majles [a place where local communities meet to drink coffee and chat].

Interviewer: [aha] SO how many pages do you read per week?

Mohammed: I read TEN pages because I try to CLOSELY look to each line when I read... SOMETIMES I try to summarize a chapter to be able to move to another one, [pause] then I find out that I FORGET most of the points that I read, but I put a certain TIME between my classes when I drink my coffee to REREAD the ten pages to memorize dates and names.

Interviewer: [pause] this happens during courses, how about the summer?

Mohammed: [um] I SWEAR to GOD, the schedule is the same.

Interviewer: [mmm] OKAY, thanks for your time, Mohammed.

4 Eaid's Interview

Interviewer: HOW do you find working with DRUGS?

Eaid: [laughing] VERY enjoyable.

Interviewer: [laughing] OKAY, what's your college level?

Eaid: Second YEAR.

Interviewer: [umm] HOW do you categorize your language level?

Eaid: Very GOOD, [aha] intermediate or upper intermediate, like that...

Interviewer: SO HAVE you ever studied outside Saudi Arabia?

Eaid: YEAH in the U.S.

Interviewer: FOR ONE semester or more?

Eaid: NOOH NO, just SIX months BUT it wasn't in the summer, it was at the beginning of the year and I studied in an English INSTITUTE.

Interviewer: [aha] WHAT do you find ENJOYABLE in reading either in Arabic or English?

Eaid: DISCOVERY differs from ARABIC to English, I MEAN in English you look for topics that you would ACQUIRE new vocabulary more like debatable topics and I look for such topics more in English... though [ha] in Arabic I DON'T look for topics that I may learn vocabulary from, I LOOK for topics that I gain more knowledge from because this is your MOTHER tongue.

Interviewer: [umm] can you give me an EXAMPLE?

Eaid: In ARABIC you can read research ARTICLES about the exploration of new medicine, BUT in English you read about NEWS, conflicts, elections, things like that...

Interviewer: [aha] YOU avoid English readings that you don't find NEW vocabulary you can benefit from?

Eaid: [um] IT'S NOT a matter of benefit or knowledge [pause]. YOU'RE currently in a STAGE of building yourself and [mmm] YOU need to collect more vocabulary in English to use in your daily interactions because science terminology is only used in specific contexts.

Interviewer: [umm] WHEN did you start to learn English?

Eaid: WHN I was a kid, [pause] it was AROUND the early years of elementary school.

Interviewer: YOUR PARENTS taught you or YOU learned it by yourself?

Eaid: NO, BY GOD it was a personal interest [pause] and my parents supported me.

Interviewer: [aha] SO YOUR elementary school had a library.

Eaid: YEAH, there was a library.

Interviewer: DID you usually go to it when you were in the early years of school?

Eaid: YEAH.

Interviewer: [mmh] YOUR reading teacher took you to it.

Eaid: YES.

Interviewer: DO you remember the name of the teacher?

Eaid: SURE [mmh] [pause] ALL my elementary school teachers I remember them.

Interviewer: What were their NAMES?

Eaid: ABO MOMMED and ABO ALI [mmm]

Interviewer: OKAY, regarding the CHILDREN'S library, do you remember the books you used to read?

Eaid: [aha] IT was not a children library, it was a resources room and it had books, most of THE BOOKS were religious books.

Interviewer: [ah] WELL, how many library tables were there?

Eaid: BIG round tables where SIX students sit beside each other.

Interviewer: [aha] BOOKS were on the table or on bookshelves?

Eaid: [um] NO, they were on shelves and you chose a book by yourself, AND the resources employer was the person who would help us...

Interviewer: OKAY, the reading teacher, what was he doing?

Eaid: OUR READING teacher or resources employer?

Interviewer: EITHER one.

Eaid: The RESOURCES employer would assist you if you were looking for a book... and the reading teacher [aha], [pause] it differs from one to another, he lets us look for information from reading and he will ask about them, it's a kind of brain storming [mmh].

Interviewer: The reading TEACHER would go around to check if you read [pause], he assisted you if you needed help?

Eaid: YEAH, definitely he did.

Interviewer: [aha] WHAT'S the most DIFFICULT problem you face when you read either in Arabic or in English.

Eaid: IN ENGLISH and ARABIC [mmh] [pause] I don't THINK I have some problems.

Interviewer: [aha] YOU don't encounter any difficulties when you READ.

Eaid: YEAH, sure.

Interviewer: What do you do?

Eaid: I TRY to guess the MEANING...OR I use my PHONE dictionary.

Interviewer: Do you know about metacognitive reading STRATEGIES? And do YOU use THEM?

Eaid: YEAH, SCANNING, SKIMMING...[uh] when I read in ENGLISH.

Interviewer: WELL [pause], your parents have a COLLEGE degree.

Eaid: YES, they do.

Interviewer: [um] DID any of your parents or older siblings read a STORY to you?

Eaid: ONE of my parents DID it, but my siblings NO because I'M the OLDER one.

Interviewer: [ah] any of your parents take a BOOK and read in front of you?

Eaid: YEAH, when I was a kid.

Interviewer: [um] DO you remember the STORIES that one of your parents read to you?

Eaid: YES, [pause] [ah] traditional STORIES like LILA and the WOLF and the PROPHET'S stories, BUT nobody read a story to me, they made me read these stories.

Interviewer: [mmh] HAVE you read a WHOLE book?

Eaid: [um] NO NO.

Interviewer: EVEN a story?

Eaid: [huh] WELL some short stories BUT not a novel.

Interviewer: NOT even CHAPTERS from a book?

Eaid: NO.

Interviewer: [mmm] HAVE you ever seen one of your parents reading a book at home?

Eaid: YEAH, my DAD read books at home.

Interviewer: HE has a library?

Eaid: YES, he has ONE.

Interviewer: [um] WHAT kind of books does your dad usually read?

Eaid: From every FIELD!

Interviewer: [aha] HAVE you ever looked in your dad's books?

Eaid: NO, I swear to god.

Interviewer: [ya] WHEN your dad read, he would TALK about what he read at lunch or dinner?

Eaid: SOMETIMES he would, not with ALL topics. IF I open the discussion and ask him, he would go further in speaking [pause] BUT he would not start speaking about what he read, NOT always.

Interviewer: [ha] WHEN you read, DO you have a specific strategy?

Eaid: In BOTH Arabic and English?

Interviewer: YEAH.

Eaid: [um] I read by myself [pause] [aha].

Interviewer: OKAY, how do you read?

Eaid: [um] there is a DIFFERENCE when I read in college or out of the college. When I read in college, [pause] I have to keep in mind that I need to GUESS and summarize as well as face new vocabulary, so

[ah] STRATEGIES need to be applied and in English I have to look for GRAMMAR when I look for the meaning of a word from the context [um].

Interviewer: YEAH, DO you use a lot of rereading the context when you don't comprehend the context?

Eaid: [mmh] YES OF COURSE, trying to understand more than one time.

Interviewer: SO you MEAN focusing on the BEGINNING of the context or the conclusion?

Eaid: [ha] THE BEGINNING and the end of the context has the same information in different words, [pause] BUT most of questions are in details.

Interviewer: [umm] HOW do you classify your reading, ARE you a FAST reader or ANALYTICAL reader?

Eaid: [mmh] FROM MY EXPERIENCE, I read in two ways. [pause] FIRST time fast reading I go quickly in the context until the end like skimming. THEN [pause], I START over to analyze step by step each point.

Interviewer: [aha] OKAY, DO you have ANYTHING else you would like to share with me regarding your reading experience either in Arabic or English?

Eaid: [um] READING LEVEL in college is good but in HIGH school and MIDDLE school was so poor.

Interviewer: YOU MEAN the curriculum or the teaching method?

Eaid: [mmh] NO NO, it was in CURRICULUM not on teachers because they were good. GRAMMAR was good in curriculum but VOCABULARY was poor and no readings in the books.

Interviewer: [um] SO from your experience studying outside Saudi Arabia, what's the difference?

Eaid: PRACTICE [pause] PRACTICE, [pause] practice. THEY COCENTRATE on practice in reading, speaking or writing which profoundly enriches your language and AMERICANS are so friendly and cooperative.

Interviewer: [aha] NICE, anything else?

Eaid: NO, that's all.

5 Turki's Interview

Interviewer: HI, TURKI, HOW'RE your ENGLISH courses?

Turki: IT'S fine, NO problems.

Interviewer: GREAT, so how do you see your language LEVEL?

Turki: [um] LESS than intermediate.

Interviewer: OKAY, TURKI, when did you start learning English?

Turki: [pause] AT the end of my high school I MEAN writing skill, but ORAL language from middle school.

Interviewer: [um] EVEN reading skills you started practicing on high school?

Turki: YEAH.

Interviewer: SO, what motivates you to read, or WHAT is the thing you enjoy reading either in Arabic or in English?

Turki: BIOGRAPHIES [pause].

Interviewer: [aha] YOU enjoy reading biographies, WHY?

Turki: [mmh] BECAUSE it comes from real life and it talks about real people.

Interviewer: [ya] IS there any OTHER reading topic that has attracted you to reading?

Turki: [um] FICTION either in Arabic or English, just a little from English.

Interviewer: DO you remember any novel you've read?

Turki: [aha] I REMEMBER one Arabic novel that I read [pause] when I was in high school, BUT I don't remember its name [pause].

Interviewer: [mmh] WELL, were you in KINDERGATEN before elementary school?

Turki: [huh] NO NO, I directly went to the elementary school.

Interviewer: DID your ELEMENTRAY school have a library?

Turki: YES [pause].

Interviewer: [aha] WELL, had you visited the library.

Turki: There was a SPECIFIC LESSON for library, almost every FREE class we IMMEDIATELY went to the library; nearly three times a week.

Interviewer: SO, WHEN you were going to the library, you were reading books or JUST playing in the library?

Turki: [mmh] WE SOMETIMES read books, a quarter of the time reading simple books like PROPHET stories.

Interviewer: [aha] COULD you explain how it WAS?

Turki: THERE was a square table where each FOUR sitting opposite each other and books ON the table.

Interviewer: WHEN you go to the library [pause], THE READING teacher goes with you!

Turki: [um] the same teacher who took us to the library WOULD be with us in the library.

Interviewer: When the reading teacher took you to the library, he would teach you how to find books in the library?

Turki: [mmh] the teacher would LOOK to what attracted each student to reading [ah] [pause].

Interviewer: THEN, what else.

Turki: [aha] WHO would like to read and who didn't like it?

Interviewer: OKAY, [pause] WHO would like to read, YOUR TEACHER would like to walk around to assist them and discuss what they read.

Turki: [um] NO JUST at the beginning of the semester the teacher would do it.

Interviewer: How about reading at English class?

Turki: DO you MEAN reading passages in English classes?

Interviewer: YEAH.

Turki: [mmh] usually the teacher would read the passage and translate each sentence to the class; then, we work together on passage questions...[um] that's what happened in high school.

Interviewer: SO DO you remember the name of the reading teacher?

Turki: NO, I don't remember his name BUT I do remember his nickname, he was called ABO Abudallh

Interviewer: [pause] WHAT'S the most difficult issue you face when you READ either in Arabic or in English?

Turki: IN ARABIC no problem, BUT in ENGLISH vocabulary is difficult since I have less knowledge of English vocabulary, so definitely I have problems in reading.

Interviewer: FINE, [pause] DO you employ any specific STRATEGY to go over such a problem, for example, SKIMMING or scanning either in Arabic or in English?

Turki: IN Arabic NO [pause], BUT in English it DEPENDS on the importance of the reading. If I need something from it, I would do scanning or skimming.

Interviewer: [huh] HAVE you ever read a whole book?

Turki: IN Arabic there is the GREATEST ONE HUNDRED and the END OF THE WORLDS, [aha] BUT in English I read just ten pages then I GIVE UP.

Interviewer: YOUR PARENTS can read and write.

Turki: JUST my dad [pause].

Interviewer: [um] YOUR DAD has a college degree?

Turki: NO just high school.

Interviewer: SO, you are an OLDER sibling.

Turki: NO, I have older ones.

Interviewer: Your OLDER siblings study in college.

Turki: ALMOST three out of four who study in college.

Interviewer: [aha] WELL [pause], DO they have a library in home or their bedrooms.

Turki: There are SOME books but NOT a library and everyone has almost FIVE to six books, [mmh] [pause] CURRENTLY I read a book.

Interviewer: [aha] WHAT'S the kind of the book?

Turki: IT talks about DICTATORSHIP and how behind every dictatorship is a DIFFICULT childhood.

Interviewer: Your SIBLINGS share what they read when you or your family sit together on lunch or coffee.

Turki: IT DEPENDS on WHO is sitting on the lunch or coffee, [pause] because if they are the reader siblings, they DEFINITELY would talk about what they read.

Interviewer: [ah] HAVE they ever talked to you about what they read?

Turki: YEAH, SURE.

Interviewer: OKAY, WHEN you struggle in an Arabic CONTEXT like you read two pages and you don't get it, what do you do?

Turki: IT HAS NOT occurred to me when I read in Arabic.

Interviewer: [aha] HOW about English, WHAT'S your strategy?

Turki: I ALWAYS face PROBLEMS in English reading especially with vocabulary, [pause] so I TRANSLATE them, it takes time and I get bored.

Interviewer: OKAY [pause], anything else you would add from your reading experience?

Turki: NO that's ALL.

Appendix B

Online Arabic Metacognitive Reading Strategies Survey

1. Arabic Metacognitive Online Reading Strategies

الاستراتيجيات	قطعا لا أقوم بهذا	نادرا ما أقوم بهذا	أقوم بهذا بعض الأحيان	أقوم بهذا غالبا	أقوم بهذا دائما	Total	Weighted Average					
لدي هدف عندما أقوم بالقراءة	11.93%	13	14.68%	16	33.03%	36	22.94%	25	17.43%	19	109	3.19
اكتب ملاحظات حينما اقرأ من الانترنت	30.28%	33	30.28%	33	21.10%	23	13.76%	15	4.59%	5	109	2.32
استخدم معرفتي لفهم ما اقرأ	4.59%	5	14.68%	16	24.77%	27	33.94%	37	22.02%	24	109	3.54
أعيد النظر فيما اقرأ من الانترنت للتعرف على موضوعه قبل القراءة	12.96%	14	14.81%	16	29.63%	32	29.63%	32	12.96%	14	108	3.15
حينما يكون النص في الانترنت صعبا اقرأ بصوت عالي	24.77%	27	22.94%	25	29.36%	32	8.26%	9	14.68%	16	109	2.65
الخص ما اقرانه لاستخراج العناصر المهمة	18.35%	20	20.18%	22	23.85%	26	22.02%	24	15.60%	17	109	2.96
أفكر في محتوى ما اقرأ هل يخدم غرضي من القراءة	10.19%	11	13.89%	15	26.85%	29	24.07%	26	25.00%	27	108	3.4
أفكر بتأني لكي أتأكد من فهم ما اقرأ	8.26%	9	11.01%	12	27.52%	30	27.52%	30	25.69%	28	109	3.51
انظر سريعا لطول وخصائص النص وتنظيمه قبل القراءة	12.96%	14	15.74%	17	24.07%	26	30.56%	33	16.67%	18	108	3.22
ناقش ما قراته في الانترنت مع الآخرين للتأكد من صحة فهمي	14.02%	15	21.50%	23	36.45%	39	17.76%	19	10.28%	11	107	2.89
أحاول الرجوع لبداية النص الذي قراته حينما أفقد التركيز	7.55%	8	16.04%	17	28.30%	30	16.04%	17	32.08%	34	106	3.49
أظلم ما أجده مفيدا خلال قارنتي للنص عبر النت لتذكره	14.95%	16	18.69%	20	28.97%	31	14.95%	16	22.43%	24	107	3.11
سرعة قارنتي على الانترنت تعتمد على طبيعة النص	6.54%	7	10.28%	11	36.45%	39	27.10%	29	19.63%	21	107	3.43
أقر بتمتع ما اقرأ وما لا اقرأ من النص	10.28%	11	15.89%	17	38.32%	41	19.63%	21	15.89%	17	107	3.15
استخدم المراجع التقنية كالموس لمساعدتي في فهم ما اقرأ	22.43%	24	14.95%	16	32.71%	35	17.76%	19	12.15%	13	107	2.82
اركز بشكل كبير حينما يكون النص على النت صعبا	10.28%	11	13.08%	14	31.78%	34	23.36%	25	21.50%	23	107	3.33
أقف لأفكر فيما اقرأ من وقت لآخر	12.26%	13	12.26%	13	39.62%	42	22.64%	24	13.21%	14	106	3.12
أستخدم مفاتيح أو عناصر النص الرئيسية للمساعدة في فهم النص	16.98%	18	9.43%	10	36.79%	39	16.98%	18	19.81%	21	106	3.13
أعيد في ذهني صياغة النص المقروء لمساعدتي في الفهم	3.81%	4	8.57%	9	40.95%	43	29.52%	31	17.14%	18	105	3.48
أصور ذهنيا ما اقرأه من معلومات لمساعدتي في الفهم	3.81%	4	12.38%	13	36.19%	38	27.62%	29	20.00%	21	105	3.48
استخدم الخط العريض أو المائل لفهم العناصر المهمة للنص	12.26%	13	20.75%	22	30.19%	32	22.64%	24	14.15%	15	106	3.06
أقوم بتحليل ونقد ما اقرأه من معلومات تعرض على النت	11.43%	12	19.05%	20	40.00%	42	13.33%	14	16.19%	17	105	3.04
أعيد النظر فيما اقرأ لأجد العلاقة بين أفكار النص	8.65%	9	13.46%	14	37.50%	39	25.96%	27	14.42%	15	104	3.24
أتأكد من فهمي للنص حينما يكون هناك تعارض	2.86%	3	5.71%	6	32.38%	34	25.71%	27	33.33%	35	105	3.81
أحاول تخمين محتوى ما اقرأه	6.67%	7	13.33%	14	32.38%	34	30.48%	32	17.14%	18	105	3.38
أعيد النظر فيما اقرأ حينما يصعب علي فهم النص	5.77%	6	8.65%	9	29.81%	31	27.88%	29	27.88%	29	104	3.63
اسأل نفسي أسئلة عما اقرأه من نص	14.42%	15	17.31%	18	35.58%	37	21.15%	22	11.54%	12	104	2.98
أتأكد من صحة فهمي للنص المقروء	5.71%	6	9.52%	10	34.29%	36	29.52%	31	20.95%	22	105	3.5
أحاول تخمين ما لم أفهمه من مصطلحات أتتا قرأتها	8.41%	9	12.15%	13	31.78%	34	25.23%	27	22.43%	24	107	3.41
Answers	109											
Skipped	0											

2. English Metacognitive Online Reading Survey

	I always or almost always do this	N	I usually do this	N	I sometimes do this	N	I do this only occasionally	N	I never or almost never do that	N	Total	weight d average
Saudi Metacognitive Online Reading Strategies												
1. I have a purpose in mind when I read online.	26.85%	29	32.41%	35	34.26%	37	5.56%	6	6.48%	7	108	1.10
2. I take online notes or highlight while reading to help me understand what I read.	9.35%	10	21.50%	23	25.23%	27	26.17%	28	21.50%	23	107	1.25
3. I think about what I know to help me understand what I read.	27.88%	29	33.65%	35	30.77%	32	6.73%	7	2.88%	3	104	1.02
4. I preview the online text to see what it's about before reading it.	23.81%	25	31.43%	33	33.33%	35	3.81%	4	9.52%	10	105	1.16
5. When online text becomes difficult, I read aloud to help me understand what I read.	15.38%	16	22.12%	23	38.46%	40	6.73%	7	21.15%	22	104	1.30
6. I summarize what I read online to reflect on important information in the text.	2.91%	3	19.42%	20	28.16%	29	24.27%	25	28.16%	29	103	1.16
7. I think about whether the content of the online text fits my reading purpose.	17.31%	18	30.77%	32	30.77%	32	10.58%	11	10.58%	11	104	1.19
8. I read online slowly but carefully to be sure I understand what I'm reading.	21.57%	22	28.43%	29	38.24%	39	11.76%	12	8.82%	9	102	1.16
9. I discuss what I online read with others to check my understanding.	9.90%	10	20.79%	21	26.73%	27	20.79%	21	24.75%	25	101	1.29
10. I skim the online text first by noting characteristics like length and organization.	17.35%	17	18.37%	18	35.71%	35	10.20%	10	19.39%	19	98	1.32
11. I try to get back on track when I lose concentration.	20.59%	21	33.33%	34	31.37%	32	9.80%	10	7.84%	8	102	1.14
12. I highlight information in the online text to help me remember it.	11.88%	12	20.79%	21	33.66%	34	18.81%	19	16.83%	17	101	1.23
13. I adjust my online reading speed according to what I'm reading.	16.83%	17	33.66%	34	32.67%	33	9.90%	10	9.90%	10	101	1.15
14. I decide what to read closely and what to ignore.	21.57%	22	38.24%	39	27.45%	28	8.82%	9	5.88%	6	102	1.09
15. I use online reference materials such as dictionaries or translators to help me understand what I read.	31.68%	32	27.72%	28	18.81%	19	11.88%	12	9.90%	10	101	1.31
16. When online text becomes difficult, I pay closer attention to what I'm reading.	22.55%	23	35.29%	36	27.45%	28	9.80%	10	7.84%	8	102	1.16
17. I use online tables, figures, and pictures in online text to increase my understanding.	15.84%	16	24.75%	25	36.63%	37	11.88%	12	11.88%	12	101	1.19
18. I stop from time to time and think about what I'm reading.	14.00%	14	29.00%	29	37.00%	37	16.00%	16	5.00%	5	100	1.05
19. I use online context clues to help me better understand what I'm reading.	12.12%	12	32.32%	32	35.35%	35	7.07%	7	13.13%	13	99	1.16
20. I paraphrase (restate ideas in my own words) to better understand what I read.	11.00%	11	26.00%	26	38.00%	38	17.00%	17	9.00%	9	100	1.10
21. I try to picture or visualize online information to help remember what I read.	14.00%	14	26.00%	26	35.00%	35	16.00%	16	10.00%	10	100	1.16
22. I use typographical aids like bold face and italics to identify key information.	7.07%	7	23.23%	23	36.36%	36	15.15%	15	19.19%	19	99	1.18
23. I critically analyze and evaluate the online information presented in the text.	7.00%	7	27.00%	27	35.00%	35	20.00%	20	13.00%	13	100	1.11
24. I go back and forth in the online text to find relationships among ideas in it.	12.00%	12	27.00%	27	39.00%	39	9.00%	9	14.00%	14	100	1.17
25. I check my understanding when I come across conflicting information.	17.17%	17	29.29%	29	37.37%	37	10.10%	10	7.07%	7	99	1.09
26. I try to guess what the material is about when I read.	26.26%	26	29.29%	29	31.31%	31	6.06%	6	9.09%	9	99	1.19
27. When online text becomes difficult, I re-read to increase my understanding.	30.30%	30	35.35%	35	23.23%	23	7.07%	7	6.06%	6	99	1.13
28. I ask myself questions I like to have answered in the text.	15.15%	15	26.26%	26	30.30%	30	13.13%	13	15.15%	15	99	1.26
29. I check to see if my guesses about the online text are right or wrong.	13.13%	13	31.31%	31	38.38%	38	8.08%	8	9.09%	9	99	1.09
30. I try to guess the meaning of unknown words or phrases.	34.34%	34	36.36%	36	26.26%	26	3.03%	3	3.03%	3	99	0.98
										Answered	108	
										Skip	7	

Appendix C

Consent Form

Dear student,

You are being invited to voluntarily participate to this study. Research studies include only people who choose to take part. This letter is the informed consent form. Please read this information carefully and take your time making your decision. Ask the researcher or your instructor to discuss this consent form with you. If there is any word or information that you do not understand, please ask me or your instructor.

You are being invited to participate in this research study entitled exploring Saudi Online Metacognitive Reading Strategies. Your volunteer participation in this research study will enable you to be among fifty adult students in different educational levels who will help the researcher to successfully complete his research on the above-cited topic.

I am Hamad Alluhaydan, a graduate student at the University of Memphis, Department of English, being guided in this research by Professor. Teresa Dalle, Department of English at the University of Memphis. There may be other people on the research team assisting at different times during the study.

The purpose of this study is to explore the Saudi online metacognitive reading strategies. This study will include participants from both Saudi ESL and EFL students. This study will highlight the literacy practice of adult Saudi students especially in online metacognitive reading strategies.

the survey will be divided into three sections: personal information, pre-test survey, and post-test survey. Participants have to start with filling the consent form before answering personal information. Then, they will take a multiple-choice questionnaire (The Booktrust Reading Habits) to study reading habits and attitudes of learners to discover their reading culture.

The questionnaire includes (14-16) items including the personal information. The questionnaire can be completed in about 10 minutes. The survey will be online and participants can access to materials anywhere.

Survey Parts	Survey Items	Timeline
Part One	Consent form	2-3 min
Part Two	Booktrust Reading Habits	5-7 min
Part Three	Reading a Short Passage	5-10 min
Part Three	Metacognitive online reading Strategies	5-10 min
Total		30 min

Chart 1

Whenever participants complete the first survey, they will be asked to move forward to read a short academic passage. As soon as they are done reading the article, they will be moved to the last section of the survey which is the metacognitive reading strategies survey. It will take 15 minutes to complete the Anderson's (2003) metacognitive reading strategies survey. So, the total time for all section is about 25 to 30 minutes, adding 5 to 10 minutes for reading the article. Finally, before they submit the survey, they have an option to write about their experience with the survey and they will be asked if they are willing to take part in an interview.

Interviews will be conducted with those who agree to be interviewed. All interviews will be conducted online via Skype or Facetime. Participants will be asked open-ended questions and they will not be restricted to specific questions. Instead, they will be free to express their attitudes towards reading and how they read in both languages (Arabic-English). Approximate time for the interview will be 10 to 15 minutes and the researcher will ensure that interviewee will express themselves freely.

You have the alternative to choose not to participate in this research study. You have the right to decide not to participate in this study on any point during any designated research activities or withdraw from the study at any time.

There are three main benefits from this study:

- a) Students who participate in this study will have the opportunity to reflect on their own reading experiences and strategies they employ when they read in either first or second language.
- b) The findings of this study may provide data about Saudi culture of reading that could assist with understanding the distinctiveness of Saudi reading culture.
- c) The findings also will be beneficial for ESL/ EFL teachers since it can provide them with a visible image on the current situation of Saudi literacy which can enhance their teaching methodology.

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

I must keep your study records as confidential as possible. However, certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are the researcher and his advisor. More importantly, I may publish what we learn from this study. If I do so, I will not let anyone know your name. I will not publish anything else that would let people know who you are.

You should only participate in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study, to please the investigator or your instructor. You are free to participate in this research or withdraw at any time. There will not be any penalty or any loss of benefits when the subjects withdraw or decide not to participate.

For any concerns and queries with regard to this research study, please let me know via hmllydn@memphis.edu or contact me at 551-227-1404 or if you have questions about your

rights as a research subject, contact Beverly Jacobik, Administrator for the Institutional Review Board for the Protection of Human Subjects either via email at irb@memphis.edu or by phone at 901-678-2705 or both. You can also contact Dr. Teresa Dalle, the advisor for this study via (901) 678-3542 or tsdalle@memphis.edu or both.

By signing this form, you acknowledge that you understand the nature of the study, the potential risks to you (if any) as a participant, and the means by which your identity will be kept confidential. Your signature on this form also indicates that you are 18 years old or older, and that you give your permission to voluntarily serve as a participant in the study described and to digitally record your short interview.

Thank you for volunteering and I appreciate your efforts for sparing time for this research study.

Sincerely,

Hamad Alluhaydan

Graduate student, Applied Linguistics

The University of Memphis, TN, USA

_____	_____
Signature of person agreeing to take part in the study	Date

_____	_____
Printed name of person agreeing to take part in the study	Date

_____	_____
Name of [authorized] person obtaining informed consent	Date

Appendix D

IRB Approval



Institutional Review Board
Division of Research and Innovation
Office of Research Compliance
University of Memphis
315 Admin Bldg
Memphis, TN 38152-3370

PI: Hamad Alluhaydan
Co-Investigator:
Advisor and/or Co-PI: Teresa Dalle
Department: English, Users loaded with unmatched Organization affiliation.
Study Title: Saudi Metacognitive Online Reading Strategies
IRB ID: PRO-FY2018-81
Submission Type: Renewal

Date: May 17, 2019 10:51 AM CDT

Dear Hamad Alluhaydan,

The U.S. Department of Health and Human Services and Office for Human Subjects Protections announced that the revisions to the Common Rule went into effect January 19, 2019. Under the new regulations protocols in the expedited category no longer require continuing review. As investigators you are responsible for complying with the following:

When the project is finished a completion submission is required.

1. Any changes to the approved protocol requires board approval prior to implementation.
2. When necessary submit incidents/adverse events to the board for review

3. Human subjects training is required to be kept current at citiprograms.org every 2 years

For any additional question or concerns please contact us at irb@memphis.edu or 901.678.2705

Thank you,

James Whelan, Ph.D.
Institutional Review Board Chair
The University of Memphis