English as a Foreign Language Learners' Major and Meta-cognitive Reading Strategy Use at Al-Balqa Applied University

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Abstract

This quantitative study aimed to investigate and compare the use of metacognitive reading Strategies among English as a foreign language students at Al-Balqa Applied University based on their academic field of study. The Survey of Reading Strategies (SORS) (Mokhtari & Sheory, 2002) was the instrument employed. This survey divides the strategies into three categories: global, problem solving and support strategies. The 86 participants are enrolled in different academic fields of study and were classified into two groups: students of the faculties of humanities (39=45.3%) and scientific faculties students (47=54.7%). The participants proved to be high users of the overall strategies (M=3.6023, S.D.=1.3189) and they employed the strategies in the following order: problem solving, support and global. No statistically significant changes were found between the two groups concerning at the significance level of 0.05. The most employed strategy by the humanities students was the support strategy "I go back and forth in the text to find relationships among ideas in it" (M=4.5385, S.D.=.83661). The scientific faculties students top ranked strategy was problem solving "I read slowly and carefully to make sure I understand what I am reading" (M=4.2128, S.D.=0.8831). The finding obtained would help EFL curricula planners and teachers to deepen their understanding of the learners' reading procedures.

Keywords: EFL, reading strategy, metacognitive, major, faculties of humanities, scientific faculties

1. Introduction

Although it is a confirmed truth that reading comprehension is essential for academic success and career progress, Jordanian students can be rated as unskilled readers. Their suffering usually waxes when they join university and face the large quantity of reading materials to be handled in English. In spite of the true faithful efforts undertaken by The Ministry of Education to turn out proficient readers, a deep understanding of how Jordanian learners approach a reading text remains the focal point that can wisely guide these efforts.

The way English as a Foreign Language learners use the metacognitive reading strategies has occupied a large space in the corpus of contemporary educational research. Many studies simply investigated the learners' awareness of these strategies (Marteniz, 2008; Singhal, 2001; Akkararitutthikun & Sappappan, 2013; Lien, 2014; Shikano, 2013) while a good number tried to investigate the existence of any relations between the employment of these strategies and other variables. For example, Jom'a (2013), Alsheikh and Mokhtari (2011), Mirzapour and Mozaheb (2015) and Hoang (2016) explored the relation between using the reading strategies and the learners' proficiency level.

The effect of utilizing metacognitive reading strategies on reading comprehension was given attention by Tavakoli (2014), Suharni (2017) and Rastegar, Kermani and Khabir (2017). A good number of papers tackled the how gender differences affected the use of metacognitive reading strategies like Mahasneh, Alkhawaldeh and Almakanin (2016), Sheory and Mokhtari (2012), Chen and Chen (2015), Kocaman and Beskardesler (2016). Some studies dealt with the metacognitive strategies employed while reading on-line texts like Genc (2008), Zarrabi (2015) and Darwish (2017). The effectiveness of subjecting the EFL learners to metacognitive reading strategies training program was dealt with in Sebias (2013) and Alkhawaldeh (2015). Studies comparing how differently students majoring in different fields of study employ the metacognitive reading strategies is a field that still needs more in-depth investigation, however.

Springing from a disbelief in a distorted image adapted by most EFL researchers stereotyping the scientific faculties students as more skilled readers than students of humanities (Dalili & Tavakoli, 2013), this study aims at comparing the metacognitive awareness of the students enrolled in the scientific faculties and those majoring in the fields of humanities.

1.1 Statement of the Problem

In spite of the remarkable quantity of research papers investigating the metacognitive reading strategies and how they affect the proficiency and reading comprehension, differences due to learners' majors is a route scarcely trodden by researchers worldwide as well as in the Arab world. The noticeable lack in our knowledge as EFL teachers, instructors and curricula planners in Jordan encouraged the researcher to investigate how differently EFL students at the faculties of humanities and the scientific faculties at Al-Balqa Applied University utilize the metacognitive reading strategies.

1.2 Theoretical Framework

Reading strategies are techniques that both native and non-native students employ to enhance their comprehension and overcome difficulties they face when reading passages in English (Lee, 2012). Utilizing these reading strategies also allows the students the chance to properly understand the texts they read. (Monsakorn, 2012). Researchers like Magogwe (2013) and Lein (2014) divide the reading strategies into two categories. The first category constitutes the cognitive reading strategies which support the learners with the skills that enable them to infer the meaning from the text they tackle. The second category is spared for the metacognitive strategies which are defined as the strategies that give the readers the abilities and arrangements needed to assess their reading process. The metacognitive strategies are divided into three subcategories: global, support and problem solving.

Studies highlighting the existence of a relation between the use of these metacognitive strategies and the major of the EFL learners still need to be conducted to give more value and intensity to the body of knowledge proposed so far.

1.3 Purpose of the Study

There are many studies investigating the factors that affect EFL students' use of metacognitive reading strategies, but little in-depth knowledge is available about the differences on the favorite reading strategy use due to students' academic fields of study at university level. This study aimed at examining how differently EFL students studying at the faculties of humanities and the scientific faculties employ reading comprehension metacognitive strategies.

1.4 Research Questions

The aim of the current study is to explore the metacognitive reading strategies employed by EFL students of Humanities and Scientific Faculties at Al-Balqa Applied University. The proposed research questions are

1) How frequently do EFL students of humanities and scientific Faculties at Al-Balqa Applied University use the metacognitive reading strategies?

2) Is there a significant difference in the frequency of metacognitive reading strategy use between EFL students of the faculties of humanities and the scientific faculties students at Al-Balqa Applied University?

3) Which metacognitive reading strategies are employed most by EFL humanities students at Al-Balqa Applied University?

4) Which metacognitive reading strategies are employed most by EFL scientific faculties students at Al-Balqa Applied University?

1.5 Significance of the Study

The current study gets its significance from the fact that it highlights the differences concerning the use of the metacognitive reading strategies due to the different academic fields of study of Jordanian EFL students at Al-Balqa Applied University.

Although research in the field of reading strategies has become the center of attention since they help us gain more information about how learners sort out their problems while dealing with a written text, up to the researcher's knowledge, this study is one of the few attempts that examine this field in the region. Therefore, this study is meant to be a contribution in the effort to bridge this gap since reading comprehension is the most needed skill for any learners' educational and career opportunities in EFL countries.

Findings of this study his should be allowed to find their way to the practical levels of education to motivate

school teachers and curricula planners to improve their awareness of these strategies and approaches.

1.6 Definition of Terms

For reasons of clarity, providing definitions of the important terms used in this study depending on Mokhtari and Sheory (2002) is thought to be important

<u>English as a foreign language or EFL</u> refers to societies where English is studied by non-native speakers and is not used as medium of daily communication.

<u>Reading strategies</u> are the methods the readers utilize in order to increase their comprehension and overcome any possible problems confronting them when reading English passages.

<u>Metacognitive strategies</u> are the techniques which learners carefully employ to assess or manage their reading process.

<u>Support strategies</u> are the group of techniques that help the reader to comprehend the text during reading. Examples of these strategies are when learners choose to underline key words, highlight important points and pay attention to the typographical aspects of the text. Support strategies also cover the areas of using reference materials from the text such as notes in the margins, summarizing, or simple underlining of important information.

<u>Global Reading Strategies</u> refer to the techniques through which learners arrange their process of reading and comprehension. The pre-reading activities as using existing knowledge and setting a goal before reading are examples of these strategies.

<u>Problem-Solving Strategies</u> constitute techniques that readers resort to so that they can overcome difficulties facing them while reading an English text. "Rereading hard to understand text" and "adapting one's reading rate to the difficulty level of what they're reading" are examples of these strategies.

1.7 Limitations of the Study

The current study is limited to EFL students at the center faculties of Al-Balqa Applied University, during the spring semester of the academic year 2016-2017.

2. Literature Review

A good bulk of studies probing the area of metacognitive reading strategies dealt with students' use and awareness of these strategies in general or tried to trace the existence of a remarkable relation between second language proficiency and the use of reading strategies, while a limited number of studies have tried to turn the spotlight on how a student's field of study may affect his employment of certain reading strategies.

2.1 EFL Learners' Awareness and Use of the Metacognitive Reading Strategies

Mahasneh, Alkhawaldeh and Almakanin (2016) examined how EFL Jordanian students employ the metacognitive reading strategies. The sample consisted of 148 participants who completed the Metacognitive Awareness of Reading Strategies Inventory (MARSI). The results and findings obtained demonstrated that the participants were high users of the overall strategies. It was found that the students preferred problem solving strategies most while the support strategies were the least favored.

The use of the metacognitive reading strategies by university students was the topic of a study by Tavakoli (2014). The participants completed the Survey of Reading Strategies (SORS) and were interviewed and set for a reading comprehension test. The findings demonstrated that the participants were moderate users of the metacognitive reading strategies and that the support strategies were the most used, followed by global strategies and problem solving, successively.

Mogogwe (2013) conducted his study to investigate how frequently university students in Botswana employ the metacognitive reading strategies. The analysis of the data obtained through the SORS instrument proved that the participants were high users of the overall strategies. Problem solving strategies were the most used, global strategies were used moderately and support strategies were the least employed.

The metacognitive reading strategies were found to be moderately to highly employed by the participants in Martinez (2008). The students of the faculty of Chemistry at the University of Ovido reported using problem solving strategies then global strategies, placing the support strategies as the least used.

2.2 The Relation Between Metacognitive Reading Strategy Use and EFL Learners' Proficiency

The Vietnamese students pursuing their education in England proved by Hoang (2016) to be medium users of the metacognitive reading strategies. The high proficiency students employed global strategies most, while the low

proficiency learners opted for support strategies most often.

Mirzapour and Mozaheb (2015) conducted a study to explore the use of metacognitive reading strategies among university students with different proficiency levels. The data collection instruments employed were the Preliminary English Test (PET) and the Survey of Reading Strategies The findings demonstrated that the global strategies were more relied on by the students with high proficiency. The support strategies were employed equally by the two groups, however.

Akkararitwutthikun and Sappan (2013) explored how the Thai postgraduate students utilize the metacognitive reading strategies depending on a sample that consisted of 85 participants. The sample members were divided to a 31-participant group of high proficiency students and a 27-participant group of low proficiency students. All of the participants employed the overall strategies equally reporting themselves as high users of these strategies. The high proficiency students employed the global strategies most while the low proficiency students employed the problem solving strategies most often.

The Survey of Reading Strategies was employed by Jom'a (2013) to investigate the metacognitive reading strategies employed by high proficiency and low proficiency Birzit University EFL students when dealing with English texts. The highly proficient participants employed the reading strategies more often than the low proficiency students.

2.3 EFL Learners' Major and Metacognitive Reading Strategy Use

The area of reading strategy use of college students learning English as a foreign language in Korea was investigated by Park (2010). This study aimed to identify the how the use of reading strategies was affected by the students' majors. (SORS) was the instrument employed for data collection. The 115 participant learners belonged to different fields of study like Education, English Literature, English Education, French, Law, Business and Science and Engineering. They were grouped into three categories: Business (25 students), Education/Social Science/Humanities (71 students) and Engineering and Science (19 students). The overall strategy use reported that the participants were high users of the reading strategies with global strategies being the most used (M=3.57), followed by support strategies (M=3.38) and leaving problem solving strategies for the last place (M=3.92).The Education/Social Science/Humanities were the most active users of the overall strategies (Glob. M=3.67, Sup. M=3.42, Prob. M=3.99), followed by the Business students (Glob. M=3.47, Sup. M=3.36, Prob. M=3.83). The Engineering/Science students were the least active users of these strategies (Glob. M=3.25, Prob. M=3.76).

Tabtabaei and Assari (2011) in their study "Investigating Strategic Processes of L2 Reading Comprehension Among Collegiate Iranian ESP Learners Across Three Academic Fields of Study" probed the existence of any significant differences among law, medical and computer engineering students concerning how they employ the metacognitive reading strategies. The 90 EFL respondents (30 medical students, 30 computer engineering students and 30 law students) completed the SORS questionnaire. The five highest and the five lowest individual reading strategies were identified in order to provide a clear image of the findings. The overall reading strategy use was also made available. The medical students reported a moderate use of the overall strategies (M=3.49), the computer engineering students also employed these strategies moderately (M=3.2) while the law students proved to be moderate to high users of the overall strategies (M= 4.33). The use of the individual strategies reported significant differences among the three majors and no significant differences were found concerning the overall reading strategy use.

Jafari and Shokrpour (2012) administered a study to explore the reading strategies employed by Iranian students when they deal with authentic expository texts in English. The 81 participants were second year university students studying occupational health and safety, environmental health and midwifery at Shiraz University of Medical Studies. The results of the study proved to be significant. Students majoring in environmental health (M=3.68) used the metacognitive reading strategies more often than those majoring in occupational health and safety (M=3.63) and midwifery (M=3.43).

Monsakorn (2012) conducted a study to investigate and compare the use of metacognitive reading strategies among EFL students at Bangkok University from three different angles: gender, field of study and English learning experience. The 380 participants were first year students from social science and science departments, registered in the EN111 compulsory course and completed a questionnaire developed by researchers at Bangkok University. The findings revealed that males and females reported no differences in their use of the reading strategies. Students belonging to the two fields of study proved to be high users of these strategies also reported no significant differences in the employment of any of the reading strategies. A striking difference was found between the group that has spent less than eight years and the group that spent 8-12 years studying English. The

first group members employed the metacognitive reading strategies more often than the second group.

Dalili and Tavakoli (2013) tried to answer the question whether there are significant differences between humanities and engineering students in the way they employ reading strategies while reading ESP materials. The sample consisted of seventy lower to intermediate college students (35 humanities students and 35 engineering students). The participants completed the Metacognitive Awareness of Reading Strategies Inventory. The findings depicted that although the two groups were majoring in different academic fields, they were found to similarly employ the overall reading strategies while reading ESP material (engineering students: M=3.39, SD=.52, students of humanities: M=3.16, SD=.50). The students of humanities opted for global strategy number eight "using context clues" most while support strategy number four "discussing reading with others" was the least strategy used. Concerning the students of engineering, the highest strategy used was global strategy number eight "using context clues" while support strategy number eight "going back and forth in text" was the least preferred.

Shikano (2013) collected data through The Survey of Reading Strategies (SORS) to investigate the relations between the reading strategy use and reader's gender, academic major and reading proficiency. The 130 Japanese university students (69 social studies and 61 engineering majors) reported being upper-moderate users of the overall strategies (problem solving: M=3,45; global strategies: M=3.38 and support strategies: M=3.10) and no significant differences were found due to gender. The other inter-group comparison based on major also highlighted the lack of any significant differences between the two groups (problem solving: social students M=3.54 and engineering students M=3.38; global strategies: social studies students M= 3.39 and engineering M= 3.38; support strategies: social studies M=3.16 and engineering students M=3.03). The third level of comparison based on proficiency reported significant differences. Proficient students employed the overall strategies more than the less proficient ones. They also reported highly employing the support strategies compared to the less proficient readers employed problem solving strategies more frequently.

Panchu, Bahuleyan and Seethalakshmi (2016) studied the metacognitive awareness of reading strategies among medical students who are supposed to be skilled readers. Metacognitive Awareness of Reading Strategies Inventory (MARSI) was the data collection instrument utilized in this study. The findings revealed that the metacognitive awareness of reading strategies was high. The strategies most preferred were the Problem solving strategies. The students second favorite strategies were the support strategies followed by global reading strategies.

3. Methodology

3.1 Participants

The study sample consisted of 86 EFL freshmen to senior students (37 males and 49 females) enrolled in the English 101 and English 102 compulsory service courses. The participants have different proficiency levels, range from freshmen to seniors and belonged to two fields of studies: faculties of humanities an scientific faculties. Those registered in the faculties of humanities (39 respondents = 45.3%) are majoring in Child Education, Arabic language and Literature, English Language and Literature, Law, Business, Business, Accounting and Project Planning, while those registered in the scientific faculties (47 respondents=54.7%) are majoring in Computer Science, Information Technology, Agriculture, Mathematics, Physics, Chemistry, Engineering, Medical Analysis and Medicine. It is worth mentioning that the participants belong to different social and economic backgrounds. Their ages range between 18 and 22.The sample of the study was selected through random sampling, and was determined based on (Sekaran, 2013).

3.2 Instrument

The Survey of Reading Strategies (SORS) by Mokhtari and Sheory (2002) is the instrument employed in this study. This 30-item questionnaire consists is categorized into three subscales: problem solving strategies (represented by 8 items), support strategies (represented by 9 items) and global strategies (represented by 13 items). Since the language used in this questionnaire is clear and simple, there was no need for it to be translated into Arabic. The Cronbach's Alpha was applied to guarantee the instrument reliability which mounted to (88.8) as a whole. For more clarity, the global reading strategies' reliability was (85.33), the problem solving reading strategies reliability was (89.2), and the reliability of the support strategies was (77.7). The instructors administered the survey by asking the volunteers to complete the questionnaire in a process that took 15 minutes. Almost all the participants completed the survey. (Cronbach alpha) was applied to measure the stability of the measuring tool which proved to be excellent; being higher than the acceptable 60%. (Miller, 2013).

3.3 Data Analysis and Characteristics of the Sample

The Statistical Package for the Social Science (SPSS.Ver20) was used for analyzing the data and dealing with the study questions.

Characteristics of the study sample in terms of participants' major are illustrated in Table 1.

Tuble 1. Demographic characteristics of study sumple (Hujor)					
Major	Frequency	Percentage			
Scientific Faculties	47	54.7 %			
Humanities	39	45.3 %			
Total	86	100.0%			

Table 1. Demographic characteristics of study sample (Major)

Table 1 shows that 54.7% of respondents are (Scientific Faculties) and the rest are (Humanities), Figure 1 shows this percentage.



Figure 1. Demographic characteristics of study sample (Major)

3.4 The Selection of the Sample of the Study

A sample of (86) student was selected through random sampling, the sample of the study was determined based on Sekaran (2013).

4. Results

Q1: How frequently do EFL students of Humanities and Scientific Faculties at Al-Balqa Applied University use the metacognitive reading strategies?

In order to answer the first research question, descriptive statistics were used. The descriptive statistics included mean and standard deviations of each strategy use, the overall use, and the use of three strategy categories. The average score of the overall use of the EFL students at Balqa Applied University of metacognitive reading strategies was high (M=3.6023, S.D.=1.3189). According to Oxford and Burry- Stock (1995), Learning strategy usage scores averaging (3.5-5.0) are called as high, (2.5-3.4) are designated moderate; and scores ranging from (1.0-2.4) are often assigned as low.

Table 2. Means and standard deviation of the frequency of metacognitive reading strategy use among EFL students of Humanities and Scientific Faculties at Al-Balqa Applied University

Category	Questions	Mean	S.D.	Level	Ν
Global	1-I have a purpose in mind when I read.	3.6860	1.2296	High	86
Support	2-I take notes while reading to help me understand what I read.	3.4070	1.2212	Moderate	86
Global	3- I think about what I know to help me understand what I read.	3.6163	1.1290	High	86

Global	4- I take an overall view of the text to see what it is about before reading it.	3.4767	1.2149	Moderate	86
Support	5-When text becomes difficult, I read aloud to help me understand what I read.	3.2606	1.3536	Moderate	86
Global	6-I think about whether the content of the text fits my reading purpose.	3.6163	1.2757	High	86
Problem solving	7-I read slowly and carefully to make sure I understand what I am reading.	4.1977	.9433	High	86
Global	8-I review the text first by noting its characteristics like length and organization.	3.2442	1.3279	Moderate	86
Problem solving	9-I try to get back on track when I lose concentration.	3.9651	1.0895	High	86
Support	10-I underline or circle information in the text to help me remember it.	4.1047	1.0293	High	86
Support	11-I adjust my reading speed according to what I am reading.	3.6512	1.0929	High	86
Problem solving	12-When reading, I decide what to read closely and what to ignore.	3.2093	1.1794	Moderate	86
Global	13-I use reference materials (e.g, dictionary) to help me understand what I read.	3.6047	1.2393	High	86
Problem solving	14-When text becomes difficult, I pay closer attention to what I am reading.	3.9767	1.0735	High	86
Global	15-I use tables, figures, and pictures in text to increase my understanding	3.1860	1.2416	Moderate	86
Problem solving	16-I stop from time to time and think about what I am reading.	3.4535	1.1848	Moderate	86
Global	17-I use context clues to help me better understand what I am reading.	3.7791	1.0561	High	86
Global	18-I paraphrase (restate ideas in my own words) to better understand what read.	3.6977	1.1279	Moderate	86
Problem solving	19-I try to picture or visualize information to help remember what I read.	3.7093	1.1153	Moderate	86
Global	20-I use typographical features like bold face and italics to identify key information.	3.6860	1.1195	Moderate	86
Global	21-I check my understanding when I come across new information.	3.5930	5.7423	High	86
Support	22-I go back and forth in the text to find relationship among ideas in it.	3.2907	1.3272	Moderate	86
Global	23-I check my understanding when I come across new information.	3.7209	1.0809	High	86
Global	24-I try to guess what the content of the text is about when read.	3.5233	1.2530	High	86
Problem solving	25-When text becomes difficult, I re-read it to increase my understanding.	4.0349	.9634	High	86
Global	26-I ask myself equations I like to have answered in the text.	3.4186	1.1320	Moderate	86
Global	27-I check to see if my guesses about the text are right or wrong.	3.3837	1.1598	Moderate	86

Problem solving	28-When I read, I guess the meaning of unknown words or phrases.	3.4767	1.0259	Moderate	86
Support	29-When reading I translate from English into my native language.	3.5581	1.2797	High	86
Support	30-When reading, I think about information in both English and my mother tongue.	3.5116	1.3612	High	86
Total		3.6023	1.3189	High	86

Table 2 illustrates that the mean average for the answers of the EFL respondents about the use of the overall support strategies was high (M =3.6023, S.D.=1.3189). The participants depicted positive attitudes towards the above items because their mean was greater than the mean of the scale (3), but in different percentage. The highest mean in this table is given to problem solving strategy number (7) "I read slowly and carefully to make sure I understand what I am reading" (M=4.1977, S.D.=0.9433). Support strategy number (5) "when text becomes difficult, I read aloud to help me understand what I read" proved to be the strategy which the respondents least preferred (M=3.2606, S.D.=1.3536).

Q2: Is there a significant difference in the frequency of metacognitive reading strategy use between EFL students of the faculties of humanities and the scientific faculties students at Al-Balqa Applied University?

To answer this research questions, descriptive statistics was used, which included mean and standard deviations of each strategy use, the overall use, and the use of three strategy categories, test (Independent Samples T-Test) was also used to determine differences between students enrolled in the faculties of humanities and the scientific faculties.

In order to identify the answer to this question, a test was used to determine field of study differences (faculties of humanities and the scientific faculties).

Table 3. Independent Samples T-Test to identify if there is a significant difference in the frequency of metacognitive reading strategy use between EFL students of the faculties of humanities and the scientific faculties' students at Al-Balqa Applied University

Major	Scientific Facul	ties (N= 47)	Humanities (N=39)		Т	Sig
Section	Mean	S.D	Mean	S.D		
Problem	3.7482	0.4962	3.7436	0.5565	0.41	0.645
Support	3.4601	0.6757	3.6763	0.5529	1.602	0.168
Global	3.5805	0.4714	3.3883	0.6060	1.655	0.087

Table 3 shows that there are no significant statistical differences at ($\alpha \le 0.05$) level in the use of the reading metacognitive strategies among Al-Balqa Applied University students depending on the demographic variable-Major.

Q3: Which metacognitive reading strategies are employed most by EFL humanities students at Al-Balqa Applied University?

To identify the answer to this question, the arithmetic mean and the standard deviation of the three strategies (Global, Problem Solving, Support) were extracted. The highest strategy that is frequently used, and the arithmetic mean and the standard deviation of each paragraph can be presented as follows:

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Categories of strategies	Mean	Standard deviation (S.D)	Level
The first Category: Problem solving	3.7436	0.5565	High
The Second Category: Support	3.6763	0.5529	High
Third Category: Global	3.3883	0.6060	Medium

Table 4. Metacognitive strategy use by EFL humanities students at Al-Balqa Applied University

It is noted from the previous table that there are differences in the arithmetic mean with respect to the employment of the three subcategories.

For the students studying at the faculties of humanities, the most favored of the subcategories is Problem Solving (M=3.7436, S.D.= 0.5565), followed by support strategies (M=3.6763, S.D.=0.5529), and then global strategies (M=3.3883, S.D.=0.6060). Statistical details illustrating the pattern of strategy use (in descending order) is made available in Table 5.

Category	Questions	Mean	Std. Deviation
Support	22-I go back and forth in the text to find relationship among ideas in it.	4.5385	.83661
Problem solving	7-I read slowly and carefully to make sure I understand what I am reading.	4.1795	1.0227
Support	10-I underline or circle information in the text to help me remember it.	4.1026	1.0462
Problem solving	25-When text becomes difficult, I re-read it to increase my understanding.	4.0256	.9864
Problem solving	14-When text becomes difficult, I pay closer attention to what I am reading.	4.0000	1.1002
Problem solving	9-I try to get back on track when I lose concentration.	3.9487	1.0500
Global	17-I use context clues to help me better understand what I am reading.	3.8718	.9228
Global	3- I think about what I know to help me understand what I read.	3.8205	1.0481
Global	18-I paraphrase (restate ideas in my own words) to better understand what read.	3.7949	1.0306
Global	23-I check my understanding when I come across new information.	3.7692	1.2452
Support	2-I take notes while reading to help me understand what I read.	3.7692	.9857
Global	13-I use reference materials (e.g, dictionary) to help me understand what I read.	3.7179	1.1459
Problem solving	19-I try to picture or visualize information to help remember what I read.	3.7179	1.1459
Problem solving	16-I stop from time to time and think about what I am reading.	3.7179	1.2555
Support	29-When reading I translate from English into my native language.	3.6667	1.3245
Global	20-I use typographical features like bold face and italics to identify key information.	3.6410	1.2028
Support	30-When reading, I think about information in both English and my mother tongue.	3.6410	1.3276

Table 5. Means and standard deviation of strategy use by the faculties of humanities students

Global	1-I have a purpose in mind when I read.	3.6154	1.2899
Global	27-I check to see if my guesses about the text are right or wrong.	3.5641	1.2095
Global	26- I ask myself equations I like to have answered in the text.	3.5128	1.0729
Global	24- I try to guess what the content of the text is about when read.	3.4872	1.2112
Support	11-I adjust my reading speed according to what I am reading.	3.4615	.9959
Support	5-When text becomes difficult, I read aloud to help me understand what I read.	3.4103	1.3122
Problem solving	28-When I read, I guess the meaning of unknown words or phrases.	3.3333	1.1082
Global	21- I check my understanding when I come across new information.	3.3077	1.3602
Global	6-I think about whether the content of the text fits my reading purpose.	3.2564	1.3902
Problem solving	12-When reading, I decide what to read closely and what to ignore.	3.2308	1.2452
Global	8-I review the text first by noting its characteristics like length and organization.	3.0769	1.3838
Global	15- I use tables, figures, and pictures in text to increase my understanding.	3.0256	1.3667
Global	4- I take an overall view of the text to see what it is about before reading it.	3.0000	1.2140
Total		3.6401	1.4122

Table 5 shows that the Faculties of Humanities students are high users of the overall metacognitive reading strategies (M=3.6401, S.D.=1.4122). As Shown in this table, there were positive attitudes toward the above questions because their mean were greater than the mean of the scale (3), but in different percentage. The item which gained the highest mean in this strategy is the support strategy "I go back and forth in the text to find relationship among ideas in it" (M=4.5385, S.D.=0.83661).

Q4: Which metacognitive reading strategies are most used by EFL scientific faculties students at Al-Balqa Applied University?

In order to identify the answer to the question, the study extracted the arithmetic mean and the standard deviation of the three strategies (Global, Problem Solving, Support). The highest strategy used, the arithmetic mean and the standard deviation of each item are presented in Table 6.

Table 6. Metacognitive reading strategies most employed by EFL scientific faculties students at Al-Balqa Applied University

Categories of strategies	Mean	Standard deviation (S.D)	Level
The first Category: Problem solving	3.7482	0.4962	High
The Second Category: Support	3.4601	0.6757	High
Third Category: Global	3.5805	0.4714	High

It is noted from the previous table that there are differences in the arithmetic mean with respect to strategy use.

It is clear that for the students of the faculties of humanities, the most favored category is Problem Solving (M=3.7482, S.D.=0.4962), followed by Support Strategies (M=3.4601, S.D.=0.6757), and then Global (M=3.5805, S.D.=0.4714). Statistical details illustrating the pattern of strategy use is made available in a descending order in Table 7.

Category	Questions	М.	S.D.
Problem	7-I read slowly and carefully to make sure I understand what I am	4.2128	0.8831
solving	reading.		
Support	10-I underline or circle information in the text to help me remember it.	4.1064	1.0265
Problem solving	25-When text becomes difficult, I re-read it to increase my understanding.	4.0426	0.9546
Problem solving	9-I try to get back on track when I lose concentration.	3.9787	1.1323
Problem solving	14-when text becomes difficult, I pay closer attention to what I am reading.	3.9574	1.0623
Global	6-I think about whether the content of the text fits my reading purpose.	3.9149	1.1000
Global	4- I take an overall view of the text to see what it is about before reading it.	3.8723	1.0758
Support	11-I adjust my reading speed according to what I am reading.	3.8085	1.1542
Global	1-I have a purpose in mind when I read.	3.7447	1.1881
Global	20-I use typographical features like bold face and italics to identify key information.	3.7234	1.0571
Problem solving	19-I try to picture or visualize information to help remember what I read.	3.7021	1.1017
Global	17-I use context clues to help me better understand what I am reading.	3.7021	1.1594
Global	23-I check my understanding when I come across new information.	3.6809	0.9350
Global	18-I paraphrase (restate ideas in my own words) to better understand what read.	3.6170	1.2078
Problem solving	28-When I read, I guess the meaning of unknown words or phrases.	3.5957	0.9478
Global	24-I try to guess what the content of the text is about when read.	3.5532	1.2990
Global	13-I use reference materials (e.g, dictionary) to help me understand what I read.	3.5106	1.3167
Support	29-When reading I translate from English into my native language.	3.4681	1.2485
Global	3- I think about what I know to help me understand what I read.	3.4468	1.1760
Support	30-When reading, I think about information in both English and my mother tongue	3.4043	1.3935
Global	26-I ask myself equations I like to have answered in the text.	3.404	1.1846
Global	I review the text first by noting its characteristics, like length and organization.	3.3830	1.2778
Global	15-I use tables, figures, and pictures in text to increase my understanding.	3.3191	1.1249
Support	22-I go back and forth in the text to find relationship among ideas in it.	3.2766	1.13138
Global	27-I check to see if my guesses about the text are right or wrong.	3.2340	1.1075
Problem solving	16-I stop from time to time and think about what I am reading.	3.2340	1.0877
Problem solving	12-when reading, I decide what to read closely and what to ignore.	3.1915	1.1352
Support	5-when text becomes difficult, I read aloud to help me understand what I read.	3.1915	1.3931

Table 7. Means and standard deviation of the scientific faculties students

Support	2. I take notes while reading to help me understand what I read.	3.1064	1.3226
Global	21-I check my understanding when I come across new information.	2.8085	1.3128
Total		3.5730	1.14989

Table 7 shows that the mean average for the answers about the frequency of strategy use by the scientific faculties EFL students was high (M=3.5730, S.D.=1.14989). As Shown in the table above, there were positive attitudes toward the above items because their mean were greater than the mean of the scale (3), but in different percentage. The phrase which gained the highest mean in isstrategy number (7) "I read slowly and carefully to make sure I understand what I am reading" (M=4.2128, S.D.=0.8831).

5. Discussion

Thorough statistical analysis concerning the first study question "*How frequently do EFL students of humanities and scientific faculties at Al-Balqa Applied University use the metacognitive reading strategies*?" proved that they are high users of the overall strategies (M=3.6023, S.D.=1.3189). This outcome supports previous studies like Jom'a (2013), Chen and Chen (2015), Mahasneh, Alkhawaldeh and Almakanin (2016), Monsakorn (2012), Zarrabi (2015), Rastegar, Kirmani and Khabir (2017), Poole (2009), Magogwe (2013) and Lien (2014) Who regardless of the aims of their studies have found their participants to be high users of the overall metacognitive reading strategies. The results of the present study are not consistent with other studies like Tabtabaei and Assari (2011), Jafari and Shokrpour (2012), Shikano (2013), Lee (2012), Tavakoli (2014), Hoang (2016) who conducted studies for a variety of aims found their participants to be moderate users of the overall reading strategies.

Concerning the second question "Is there a significant difference in the frequency of metacognitive reading strategy use between EFL students of the faculties of humanities and the scientific faculties?", the statistical analysis proved the absence of any significant differences at ($\alpha \le 0.05$) between the two groups. This result supports previous studies by Dalili and Tavakoli (2013), Shikano (2013), Panchu, Bahuleyan and Seethalakshmi (2016), Shikano (2013) and Park (2010) whose participants regardless of their fields of study similarly employed the reading strategies. The participants in Tabtabaei and Assari (2011), Jafari and Shokrpour (2012) and Monsakorn (2012) displayed that they utilize the strategies differently due to their major.

As for the students of the faculties of humanities, the most used category is Problem Solving (M=3.7436, S.D.=0.5565), and then Support (M=3.6763, S.D.=0.5529), and the least favored category is Global (M=3.3883, S.D=0.6060). Shifting the spotlight to the students of the scientific faculties, the most employed strategies are Problem Solving (M=3.7482, S.D.=0.4962), and then Support (M=3.4601, S.D.=0.6757), and the least used strategy is Global (M=3.5805, S.D.=0.4714). This problem solving, support and global pattern is consistent with Marteniz (2008), Jafari and Shokrpour (2012), Jom'a (2013), Magogwe (2013), Shikano (2013) and Mahasneh, Alkhawaldeh and Almakanin (2016). Studies that do not support these findings do also exist. Alsheikh and Mokhtari's (2011) and Tavakoli's (2014) participants favored the support reading strategies most. Akkarararitwutthikun and Sappan (2013) and Hoang (2016) and Kocaman and Beskadesler (2016), revealed that their participants were relying on global reading strategies most.

The Faculties of Humanities students are high users of the overall metacognitive reading strategies (M=3.6401, S.D.=1.4122). The item which is ranked as the highest is the support strategy "I go back and forth in the text to find relationship among ideas in it" (M=4.5385, S.D.=0.83661). An explanation of this choice may be due to the kind of exams that humanities students are used to. Most of the exams held in the departments of humanities are essay exams, where students are supposed to establish comparisons and contrasts between certain themes or concepts or express their opinions concerning a certain point. These kinds of exam question need the students to keep an eye on relations between ideas more than demonstrating on points as separate islands.

Among the five top listed strategies, as illustrated in Table 5, three are problem solving and two are support strategies: support strategy "I go back and forth in the text to find relationships among ideas in it" (M=4.5385, S.D.=0.83661), Problem solving "I read slowly and carefully to make sure I understand what I am reading" (M=4.1795, S.D.=1.0227), support strategy "I underline or circle information in the text to help me remember it" (M=4.1026, S.D.=1.0227), problem solving "When text becomes difficult, I re-red it to increase my understanding" (M=4.0256, S.D.=.9864) and problem solving "When text becomes difficult, I pay closer attention to what I am reading" (M=4.000, S.D.=1.1002).

Relying on these two groups of strategies which students depend on their personal efforts to develop point out

the lack of teachers' and lecturers' knowledge concerning the importance of the global metacognitive strategies. As defined earlier in this paper, global reading strategies are those purposeful, intently planned techniques by which learners are taught how to organize or manage their reading. It refers to pre-reading activities such as having a purpose in mind before reading, thinking about what one already knows about the material before reading, using context clues, paraphrasing, using the typographical feature, note-taking, using reference materials, using tables and figures, and taking an overview of the text before reading. If these techniques are implemented, the time needed to achieve better comprehension of the reading text can be minimized and more efficiently utilized. The least used strategy by the students of humanities is global strategy "I take an overall view of the text to see what it is about before reading it" (M=3,000, S.D.=1.2140). This supports the above-mentioned point concerning the importance of training teachers and learners to employ the global strategies.

As for the participants from the scientific faculties, they proved to be high users of the overall strategies (M=3.5730, S.D.=1.14989). The item which they ranked as highest is strategy number (7) "I read slowly and carefully to make sure I understand what I am reading" (M=4.2128, S.D.=0.8831).

A closer look at the contents of table(7) shows that four of the five most preferred strategies by the scientific faculties students belong to the problem solving subgroup: "I read slowly and carefully to make sure I understand what I am reading" (M=4.2128, S.D=0.8831), "When text becomes difficult, I re-read it to increase my understanding" (M=4.0426, S.D.=0,9546), "I try to get back on track when I lose concentration" (M=3.9787, S.D.=1.1323) and "When text becomes difficult, I pay closer attention to what I am reading" (M=3.9574, S.D.=1.0623). Only the second- rated strategy belongs to the support strategies sub-groups: "I underline or circle information in the text to help me remember it" (M=4.1064, S.D.=1.0265).

The noticeable presence of problem solving strategies is a positive indicator since their use characterize skilled readers (Dalili & Tavakoli, 2013). The absence of strategies like "When reading, I translate from English into my native language" (M=3.4681) from the top five list is also another positive indicator of skilled readers.

A finding that is worth attention is that the scientific faculties students do not highly opt for the global strategy "I use tables, figures, and pictures in text to increase my understanding" (M=3.3191) although their academic textbooks heavily rely on figures and pictures. This illustrates that they should receive planned training on how to employ these visual aids which can shorten the time needed for comprehending any reading text and help memory retain the information for a longer time.

Another phenomenon that is worth attention is that EFL scientific faculties students do not efficiently employ the global strategy "I use reference materials (e.g., dictionary) to help me understand what I read" (M=3.5106).

Dictionary use and reaching reference materials has never been easier. Online dictionaries and encyclopedic sources which are at the learners' finger tips can save the time needed for the understanding of any text and should receive more training.

The least five used metacognitive strategies by scientific majors are a mixture of the three subcategories. The presence of the support strategy "I take notes while reading to help me understand what I read" (M=3.1064)

in this list as almost the lowest ranked is an indicator of the students' inability to use their own language and writing skills.

6. Recommendations

The recommendations affiliated to this study can be divided into two streams: pedagogical recommendations and recommendations for future research.

The findings earned from this study highlight the need for training programs that raise teachers' and instructors' awareness of the importance of implementing the reading strategies in their classes. According to Zhang (2009), inserting these techniques in any EFL class can make any reading experience a source of pleasure even especially for the low-proficient students. In addition, most of these strategies can be developed into life-long skills that can be a valuable asset in any learner's life.

Future researchers interested in this field are advised to conduct studies that employ large samples of students of different fields of study comparing the employment of these strategies while dealing with texts in both English and the participants' native languages, and while reading literary texts and academic texts.

Future research need also to invest more efforts in the field of on-line reading strategies especially because most of what is being read these days is obtained from online sources.

Qualitative research can be employed more effectively in this field. Recall protocol interviews, students' reading logs and notes are thought to give a deeper understanding of what goes on during the reading process.

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Appendix 1

Survey of Reading Strategies

Major:

Phrase	I never or almost never	Only occasionally	I sometimes	I usually	Always or almost
	(1)	(2)	(3)	(4)	always (5)
1-I have a purpose in mind when I read.					
2-I take notes while reading to help me understand what I read.					
3- I think about what I know to help me understand what I read.					
4- I take an overall view of the text to see what it is about before reading it.					
5-When text becomes difficult, I read aloud to help me understand what I read.					
6-I think about whether the content of the text fits my reading purpose.					
7-I read slowly and carefully to make sure I understand what I am reading.					
8-I review the text first by noting its characteristics like length and organization.					
9-I try to get back on track when I lose concentration.					
10-I underline or circle information in the text to help me remember it.					
11-I adjust my reading speed according to what I am reading.					
12-When reading, I decide what to read closely and what to ignore.					
13-I use reference materials (e.g, dictionary) to help me understand what I read.					
14-When text becomes difficult, I pay closer attention to what I am reading.					
15-I use tables, figures, and pictures in text to increase my understanding.					
16-I stop from time to time and think about what I am reading.					
17-I use context clues to help me better understand what I am reading.					

18-I paraphrase (restate ideas in my own words) to better understand what read.			
19-I try to picture or visualize information to help remember what I read.			
20-I use typographical features like bold face and italics to identify key information.			
21-I check my understanding when I come across new information.			
22-I go back and forth in the text to find relationship among ideas in it.			
23-I check my understanding when I come across new information.			
24-I try to guess what the content of the text is about when read.			
25-When text becomes difficult, I re-read it to increase my understanding.			
26-I ask myself equations I like to have answered in the text.			
27-I check to see if my guesses about the text are right or wrong.			
28-When I read, I guess the meaning of unknown words or phrases.			
29-When reading I translate from English into my native language.			
30-When reading, I think about information in both English and my mother tongue.			

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