



# The Reading Strategies Used by Iranian ESP Students to Comprehend Authentic Expository Texts in English

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## Abstract

The purpose of the present study was to investigate the reading strategies of Iranian ESP students when they read authentic expository texts in English. To this end, 81 male/female university sophomore students studying environmental health, occupational health and safety, and midwifery at Shiraz University of Medical Sciences participated in the study. The Survey of Reading Strategies (SORS) (Mokhtari & Sheorey, 2002) was used in this study. This Survey classifies reading strategies into three categories: *global, problem solving, and support* strategies. The findings demonstrated that the participants are moderately aware of reading strategies and the most frequently used strategies were support strategies, followed by global strategies, and then problem solving strategies. The Iranian ESP students used the reading strategies differently according to their academic majors.

**Keywords:** EFL, ESP, Reading strategies, Reading ability, Metacognitive awareness of reading strategies.

## 1. Introduction

Among the four language skills, reading comprehension has always been the main concern of Iranian ESP instructors (Farhadi, 2005; Sajadi & Oghabi, 2011; Tabatabaei, 2007). In a similar vein, Iranian university students regard reading comprehension as the most important skill (Sajadi & Oghabi, 2011). The usual justification for this is that comprehension of English text is an important tool for obtaining information about the latest technological and scientific developments in different fields of science. Moreover, the ability to comprehend English well also provides Iranian ESP students with better opportunities to gain a wide range of knowledge as well as skills and a capability to compete in the job market and communicate well in social and professional settings (Ataei, 2000; Erfani, Iranmehr, & Davari, 2010). However, most of Iranian university students have been found to have an insufficient competence in reading academic texts (Fatehi Rad, 2011; Ghalandari & Talebininejad, 2012; Ghazanfari, 2009, Shokouhi, 2005).

The failure of Iranian university students to read academic texts as effectively as they should, can perhaps be attributed to a variety of factors including language learners' dearth of target language proficiency and vocabulary (Kasper, 1993), lack of familiarity with the content and/or formal schemata of the texts (Carrell & Floyd, 1987), and ineffective reading strategies use (Wood, Motz & Willoughby, 1998, cited in Martinez, 2008), which is the focus of this study. Stevenson, Schoonen and Glopper, (2003, cited in Alsheikh & Mokhtari, 2011) believe that the examination of reading strategies provides useful understanding and insights about the nature of reading comprehension. Reading strategies can be defined as "deliberate, goal-directed attempts to control and modify the reader's efforts to decode text, understand word, and construct meanings out of text" (Afferbach, Pearson, & Paris, 2008, p. 15). An impressive number of empirical investigations have shown that language learners' use of reading strategies and their reading comprehension are related (Al-Sheikh, 2002; Brantmeier, 2000, 2002; Dheib-Henia, 2003; Dreyer & Nel, 2003; Lee, 2007; Mokhtari & Reichard, 2004; Nuttal, 2000; Sheorey & Mokhtari, 2001; Wu, 2005; Zhang, 2001). To the best knowledge of the researchers, very few studies have investigated Iranian ESP students' use of reading strategies in comprehending authentic expository texts. To tackle this problem, the present



study tries to investigate Iranian ESP students' use of reading strategies in comprehending authentic expository texts. To meet this aim, the present study seeks to address the following research questions:

1. What specific reading strategies do Iranian ESP students use when reading authentic expository texts in English?
2. Is there any significant difference among environmental health, occupational health and safety, and midwifery students regarding the overall reading strategy use?

### *1.1 Statement of the Problem*

The teaching of English in schools in Iran starts from the first grade of junior high school with two hours of instruction per week. English instruction continues through the four grades of secondary education with the time allocation of two hours a week. All the English textbooks for the schools are produced by the Ministry of Education. Each lesson includes a variety of sections such as *New Vocabulary*, *Reading*, *Speak Out*, etc. Reading sections are composed of non-authentic passages and the teaching method is based on Grammar Translation Method (GTM) (Doudman, 2010, Dahmardeh, 2006; Rahimi, 2005).

Iranian students at schools are never exposed to authentic expository texts in English before entering university. Therefore, they do not have the opportunity to develop and improve their academic English reading skills and strategies before entering university. When they enter university, they have to take up to 4 units of ESP courses. In these courses, students need to read and understand authentic expository texts written in English in their major fields of study. In addition, outside of the ESP class setting, they have to read loads of academic texts in English to obtain good command of their discipline. However, the researchers observe that Iranian university students, in spite of having a certain level of English reading ability, have problems in applying effective and sufficient reading strategies to comprehend authentic expository texts which need different reading skills and strategies than reading non-authentic texts. Therefore, a careful study of the strategies use of Iranian ESP students will help to better understand how they read authentic expository texts in English.

### *1.2 Significance of the Study*

The results of the present study are significant since through understanding the scenario of students' strategy use, teachers can help students distinguish effective strategies from ineffective ones. Furthermore, Iranian ESP instructors can apply these findings to develop more effective instructional methods for students in order to assist them cope with difficulty in reading English authentic expository texts and achieve higher levels of reading comprehension of those texts. Findings of this study may also be useful for the Ministry of Culture and Higher Education, ESP textbook developers, policy makers, ESP syllabus designers, ESP curriculum planners, and ESP test constructors.

## **2. Literature Review**

Martinez (2008) aimed to assess the metacognitive awareness of reading strategies among Spanish ESP students. In his study, a total of 157 chemistry and technical students were asked to read the Metacognitive Awareness of Reading Strategies Inventory (MARSII) (Mokhtari & Reichard, 2002) and circle the number that best describes their reading strategy use. The author concluded that there is a moderate to high overall use of reading strategies. The results also revealed that students show higher reported use for problem-solving and global reading strategies. Sheorey and Baboczky (2008) investigated the strategy use of 545 Hungarian college students. Students were asked to self-rate their reading abilities in English on a scale from one to six. The results revealed that those who rated themselves as strong readers had a higher mean on eight individual strategies and on the global strategies subscale.

Sheorey, Kamimura and Freiermuth (2008) studied the reading strategies of 237 Japanese students studying technical English in a Japanese University. Students were asked to rate their reading ability on a scale from one to six, from which they were divided into high and low groups. The results showed significant differences between the high and low groups on nine individual strategies. In addition, on 80% of the strategies, the high group used more strategies than the low group. Malcolm (2009) conducted a survey of reading strategy use with 160 first year and fourth year medical students in Bahrain in order to compare perceived reading strategy use of readers at varying English proficiency levels and years of study. The study found significant differences in reported use of metacognitive strategies in general and in translating strategies from English to Arabic with low English proficiency and the first year reported more translation than the upper-year students report.



Karbalaei (2010) investigated whether there are any significant differences between EFL and ESL readers in metacognitive reading strategies when they are reading academic texts in English. One hundred and ninety undergraduate students (96 Iranians and 93 Indians) completed an instrument designed to measure the students' metacognitive awareness of reading strategies after performing a reading comprehension test. The result of this study indicated that the subjects in both groups reported a similar pattern of strategy awareness while reading academic texts although the two student groups had been schooled in significantly different socio-cultural environments. Regarding the difference existing among both groups, Indians reported more awareness and use of global support and total metacognitive reading strategies. Iranian students reported no significant difference in using problem-solving reading strategies.

Oranpattanachi (2010) investigated the effect of reading proficiency on the reading processes of Thai pre-engineering students at a college in Thailand. The participants of the present study consisted of 90 Thai pre-engineering students. They were categorized into 2 groups, the high and the low proficiency readers, according to their reading scores and their English grades. The metacognitive reading strategy awareness questionnaire was employed to investigate their reading strategy use. The results showed that the high and the low proficiency readers shared both differences and similarities in their reading processes. The differences in their reading processes were divided into 2 aspects: the frequency of perceived strategy use and the frequency of perceived top-down strategy use. The similarities in their reading processes were also divided into two aspects: the rank ordering of perceived strategy use and the style of text processing.

Alsheikh (2011) investigated the metacognitive reading strategies of three advanced proficient trilingual readers whose native language is Hausa. The study examines the reading strategies employed by the three readers in English, French and Hausa. The aim of the study was to compare the reading strategy profiles of trilingual readers through perceived use and real-time or actual use of reading strategies. The major findings revealed that: (1) The three multilingual readers demonstrate high awareness of reading strategies; (2) They deploy more reading strategies in their second and third language than in their first language; (3) Some types of reading strategies were used more often than others; (4) The most proficient readers deploy a wider range of strategies than the least proficient reader who relies heavily on translation. Alsheikh and Mokhtari (2011) examined the metacognitive awareness and reading comprehension strategies used by advanced proficiency ESL readers whose native language is Arabic. The study looked at the perceived use of reading strategies by Arabic native speakers in Arabic and English and their actual use of these strategies in reading academic texts in the two languages. The means of individual strategies reported showed that the participants have a high level of awareness of reading strategies when reading in both languages. The results from the quantitative data also revealed that overall the 90 participants reported using a higher rate of reading strategies when reading English than when reading Arabic. This difference was also supported by the qualitative data where the participants actually used more strategies in reading English text than the Arabic text.

Ilustre (2011) aimed to explore whether metacognitive reading strategies or beliefs about reading is a better predictor of text comprehension. 226 Filipino college students in a private university were asked to accomplish a Reading Beliefs Inventory (RBI) (Kara-Soteriou, 2007) and the Survey of Reading Strategies Inventory (SORS) (Mokhtari & Sheorey, 2002), and then answer a researcher-made reading comprehension test. Results showed that among the three subscales of metacognitive reading strategies, only problem solving strategies correlated positively with text comprehension, with those students who reported to be using this strategy obtaining relatively higher scores in the reading tasks. The findings also showed that active beliefs, and not passive beliefs about reading, were positively correlated with text comprehension. Moreover, the results suggested that, over the effects of active views about reading, problem solving reading strategies contributed to text understanding.

Munsakorn (2012) investigated the awareness of reading comprehension strategies among Taiwanese students. The participants were from science and social science departments at Bangkok University. With respect to overall records of reading strategies, the Taiwanese students showed a high level awareness of overall reading strategies (Mean=3.60).

### 3. Methodology

#### 3.1 Participants

The subjects of this study comprised 81 male/female university sophomore students studying environmental health, occupational health and safety, and midwifery at Shiraz University of Medical Sciences. They had passed 6 credits on general English, and at the time of data collection, they were enrolled in ESP course. Their age ranged



between 18 and 21. The participants all spoke Persian as their mother tongue language. All the participants had been studying English for eight years.

### 3.2 Instruments

#### 3.2.1 The Persian version of Survey of Reading Strategies (SORS) developed by Mokhtari & Sheory( 2002)

The Persian version of Survey of Reading Strategies (SORS) (Mokhtari & Sheory, 2002) was used in the present study (See Appendix A). The 30 items of the SORS survey instrument were translated into Persian in order to enable the participants to more easily understand and answer the questions. The Persian translation was developed through the process of translation and back translation: one of the researchers translated the questionnaire into Persian; the questionnaire was then translated back into English by three M.A. students majoring in EFL at Shiraz Azad University. The SORS uses a 5 point-Likert scale, it ranges from 1='I never do this' to 5='I always do this'. It measures three categories: Global Reading Strategies (GLOB), Problem Solving Strategies (PROB), and Support Reading Strategies (SUP). Global Reading Strategies focus on how students monitor their reading. Problem Solving Strategies cover how learners resolve reading problems. Finally, Support Strategies include possible techniques that can help readers. The instrument was field-tested extensively with diverse student populations including native and non-native speakers of English and was found to have well-established psychometric properties including validity and reliability data (Alpha = .93) which are described in Mokhtari and Reichard (2002). The Cronbach's Alpha of the Persian version of SORS administered in this study was 0.92, which was within the acceptable range of reliability.

#### 3.2.2 Reading Comprehension Test

The reading comprehension test was the second instrument that was used in the present study. Passages and questions were chosen from an official TOEFL test (Test of English as a Foreign Language) administered in the past by Educational Testing Service (ETS). The written permission for using the passages and questions for an educational research purpose was obtained from the publisher, ETS.

The reading comprehension test for this study had 4 passages, and each passage had nine multiple-choice questions. All passages were expository in nature. According to Meyer and Freedle (1984), the rhetorical organizations of expository text structures include description, collection, cause/effect, problem/solution, and comparison/contrast. Table 1 displays the characteristics of the reading passages.

Table 1. Characteristics of the reading passages

Passage	Structure	Paragraphs	Sentences	Questions
1	Description	2	26	9
2	Comparison/Contrast	5	22	9
3	Cause/Effect	4	29	9
4	Problem/Solution	3	25	9

### 4. Data Collection Procedure and Analysis

Prior to the initiation of the study, permission was received from students' instructors. The students were assured that the test results would be treated with complete confidentiality. The students were informed about the purpose of the study to demonstrate that the study would be of value to the participants as well as to the entire field of EFL instruction and learning in general and ESP in particular. The researcher also provided the participants with the necessary information about what they were required to do in the study.

One class session was dedicated for gathering the data. First, students were required to complete the TOEFL test. Forty minutes was allotted to the test. Next, the students were asked to fill out the SORS questionnaire. At this time, they were asked to respond to each item of the SORS based on their strategy use while they read the authentic expository text. Fifteen minutes were given for the students to complete the questionnaire.

The analyses that were employed for each research question were descriptive statistics and One-way Analysis of Variance (ANOVA). The analytical procedures employed to explore the research questions were computed using the Statistical Package for Social Sciences (SPSS), version 16.0.

## 5. Results

*Q1: What specific reading strategies do Iranian ESP students use when reading authentic expository texts in English?*

In order to answer the first research question, descriptive statistics were used. The descriptive statistics included means 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 reading strategies was 3.36, which is moderate. 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 strategy use; and scores ranging from 1.0 - 2.4 are often assigned as low strategy utilization. The average scores of each category of the reading strategies were 3.24 for Global strategies (GLOB), 3.72 for Support strategies (SUP), and 3.14 for Problem Solving strategies (PROB). As Table 2 shows, Support Strategies were at the high level of usage, while Global and Problem Solving Strategies were at the moderate level of usage.

Table 2. Use of each strategy category

Categories of strategies	Mean	S.D	Level
GLOB	3.24	.32	Moderate
SUP	3.72	.37	.High
PROB	3.14	.53	.Moderate
Total	3.36	.25	Moderate

As shown in Table 3, sixteen strategies were reported as high usage, and nine strategies were reported as moderate usage and five strategies were reported as low usage.

Table 3. Scores of each strategy score

Category	Reading Strategy	Mean	S.D	Level
GLOB 1	Setting purpose for reading	3.09	1.38	Moderate
SUP 2	Taking notes while reading	3.40	1.14	High
GLOB 3	Using prior knowledge	3.64	1.20	High
GLOB 4	Previewing text before reading	3.80	1.22	High
SUP 5	Reading aloud when text becomes hard	2.20	1.09	Low
GLOB 6	Checking how text content fits purpose	2.35	1.20	Low
PROB 7	Reading slowly and carefully to make sure I understand	2.91	1.52	Moderate
GLOB 8	Noting text characteristics (e.g., length, organization)	2.33	1.23	Low
PROB 9	Trying to stay focused on reading when losing concentration	2.68	1.41	Moderate
SUP 10	Underlining information in text to help me remember it	3.83	1.09	High
PROB 11	Adjusting reading speed	2.15	.99	Low



GLOB 12	Determining what to read	3.30	1.23	Moderate
SUP 13	Using reference materials (e.g., dictionary)	4.31	.74	High
PROB 14	Paying close attention to reading when text becomes difficult	3.60	1.25	High
GLOB 15	Using text features (e.g., tables, figures)	3.17	1.36	Moderate
PROB 16	Pausing and thinking about reading	3.80	1.16	High
GLOB 17	Using context clues	3.38	1.33	Moderate
SUP 18	Paraphrasing (restate ideas in my own words) for understanding	3.88	1.11	High
PROB 19	Visualizing information read	3.52	1.21	High
GLOB 20	Using typographical features (e.g., bold, italics)	3.60	1.06	High
GLOB 21	Analyzing and evaluating what is read	2.20	.98	Low
SUP 22	Going back and forth in text to find relationship among ideas	4.14	1.01	High
GLOB 23	Checking my understanding when new information comes	4.14	1.12	High
GLOB 24	Predicting or guessing text meaning	3.40	1.24	Moderate
PROB 25	Re-reading for better understanding when text becomes difficult	3.30	1.26	Moderate
SUP 26	Asking oneself questions	3.56	1.35	High
GLOB 27	Confirming predictions	3.70	1.21	High
PROB 28	Guessing meaning of unknown words	3.15	1.15	Moderate
SUP 29	Translating into a native language	3.99	1.04	High
SUP 30	Thinking about information in both English and mother tongue	4.17	.70	High

As Table 4 illustrates, five most frequently used strategies by the Iranian ESP students were “using reference materials (e.g., dictionary)”, “thinking about information in both English and mother tongue”, “going back and forth in text to find relationship among ideas”, “checking my understanding when new information comes”, and “translating into a native language”.

Table 4. Five most frequently used strategies

Category	Reading Strategy	Mean	S.D	Level
SUP	Using reference materials (e.g., dictionary)	4.31	.74	High
SUP	Thinking about information in both English and mother tongue	4.17	.70	High
SUP	Going back and forth in text to find relationship among ideas	4.14	1.01	High
GLOB	Checking my understanding when new information comes	4.14	1.12	High
SUP	Translating into a native language	3.99	1.04	High

Table 5 displays five least strategies in this study. These five strategies appear to need more techniques or actions from readers.

Table 5. Five least frequently used strategies

Category	Reading Strategy	Mean	S.D	Level
PROB	Adjusting reading speed	2.15	.99	Low
SUP	Reading aloud when text becomes hard	2.20	1.09	Low
GLOB	Analyzing and evaluating what is read	2.20	.98	Low
GLOB	Noting text characteristics (e.g., length, organization)	2.33	1.23	Low
GLOB	Checking how text content fits purpose	2.35	1.20	Low

*Q2: Is there any significant differences among environmental health, occupational health and safety, and midwifery students regarding the use of reading strategies use?*

Descriptive statistics, including means and standard deviations of the overall use of reading strategies across the three academic major groups, are summarized in Table 6.

Table 6. Overall strategy use by academic majors

Academic major	Mean	S.D.	N
Environmental health	3.55	.22	25
Occupational health and safety	3.35	.20	30
Midwifery	3.21	.23	26

One-way ANOVA was run to determine the influence of academic majors on the overall use of reading strategies. As Table 7 demonstrates, the significance is .000. This is smaller than .05, so there are significant differences concerning overall reading strategy use among ESP learners across the three academic fields of study ( $F=16824$ ,  $df=2$ ,  $p=.000$ ).

Table 7. One-way ANOVA for Overall Reading Strategy Use across Three Majors

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.560	2	.780	16.824	.000
Within Groups	3.616	78	.046		
Total	5.176	80			

\*. The mean difference is significant at the 0.05 level.

In order to locate the difference between the three majors, a post hoc (Scheffe) test was run. Table 8 displays the results of Scheffe test.

Table 8. Scheffe test for overall reading strategy use across three majors

(I) major	(J) major	Mean Difference (I-J)	Std. Error	Sig.
Environmental health	Occupational health and safety	.20753*	.05831	.003
	Midwifery	.34792*	.06031	.000
Occupational health and safety	Environmental health	-.20753*	.05831	.003
	Midwifery	.14039	.05769	.058
Midwifery	Environmental health	-.34792*	.06031	.000
	Occupational health and safety	-.14039	.05769	.058

\*. The mean difference is significant at the 0.05 level.

The above Table clearly shows that environmental health students reported using a higher rate of reading strategies than midwifery and occupational health and safety students. Moreover, the results reveal that midwifery and occupational health and safety students reported using rather a similar rate of reading strategies.

## 6. Discussion

The first research question has to do with the reading strategies that Iranian ESP students use when reading authentic expository texts in English. The findings revealed that the participants were moderate strategy users, which did not support some of the earlier research conducted in EFL learning contexts; EFL learners reported a high frequency reading strategy use in reading (Alsamadani, 2009; Malcolm, 2009; Munsakorn, 2012; Park, 2010). However, some previous studies, including Hamzah and Abdullah (2009), Hsu (2010), Lee (2007), and Wu (2005) found similar findings to the current study. For example, Hamzah and Abdullah (2009) studied the use of metacognitive strategies in reading and writing among 400 Malaysia ESL students and reported moderate usage of reading strategies ( $M=3.34$ ;  $M=3.07$  for group one and two respectively). Hsu (2010) investigated the English reading strategy use of four-year technical college students in Taiwan and reported moderate usage of the reading strategies ( $M=3.16$ ). Lee (2007) explored reading strategy use in reading general English texts among Korean EFL college students. The results showed that the students are moderate users of reading strategies ( $M = 2.92$ ;  $M = 3.01$  for group one and two respectively). Wu (2005) studied the use of reading strategies among Taiwanese EFL students. Based on the results, Wu called Taiwanese EFL students as moderate users of the reading strategies ( $M = 3.08$ ). One possible explanation for this result is that using metacognitive reading strategies is neither trained nor mandatory for Iranian ESP students. Another possible explanation is that the participants of this study had learned English in Iran, which is an EFL community; English is not used for daily communication, as it is used in an ESL context, therefore, these students do not have a greater need to implement strategies compared with ESL students. This moderate use of strategies in ESP reading task among Iranian EFL learners might be the result of transferring of L1 reading ability to L2 reading tasks.

With respect to each category of the reading strategies, the most frequently used category of the reading strategies was Support Strategies ( $M = 3.72$ ,  $S.D. = .37$ ), followed by Global Strategies ( $M = 3.24$ ,  $S.D. = .32$ ) and Problem Solving Strategies ( $M = 3.14$ ,  $S.D. = .53$ ). This result that the “support reading strategies” were reported as used the most is consistent with some of the results presented by Sheorey and Mokhtari (2001) who found that “ESL students attribute high value to support reading strategies regardless of their reading abilities” (p. 445). The support reading strategies deal with the use of support mechanisms or tools in reading. The results revealed that the participants of this study value basic support mechanisms that aid comprehension. On the other hand, the “problem solving strategies” were the least used strategies. This result is contrary to the findings of other previous studies (Alsheikh 2002; Alsheikh & Mokhtari 2011; Ilustre 2011; Mokhtari and Reichard 2002, 2004; Wu 2005) which indicated the highest frequency of use for problem-solving strategies. The limited use of problem solving strategies may be due to a number of factors including the type of students used, their native language, learning environment and context, participants’ inability or unwillingness to use these problem solving strategies and possibly other factors.

The present study identified the five most and the five least frequently used reading strategies by the participants (see Tables 4 & 5). Four of the five most frequently used strategies fell into the category of support strategies: ‘using reference materials (e.g., dictionary) (SUP,  $M = 4.31$ ), ‘thinking about information in both English and mother tongue’ (SUP,  $M = 4.17$ ), ‘going back and forth in text to find relationship among ideas’ (SUP,  $M = 4.14$ ), and ‘translating into a native language’ (SUP,  $M = 3.99$ ). The other one fell into category of global reading strategies: ‘checking my understanding when new information comes’ (GLOB,  $M = 4.14$ ). According to the results, Iranian ESP students are very familiar with these five strategies and also they appear to be well aware of how to use those strategies. In particular, as to the reading strategy of ‘using reference materials (e.g., dictionary)’, Iranian ESP students are instructed how to use a bilingual dictionary (i.e., the English-Persian dictionary) and a monolingual dictionary (i.e., the English-English dictionary) in both general English and ESP classes. In addition, they are encouraged to use the dictionary for understanding unfamiliar words they encounter while they read English texts as a useful strategy. This might be able to explain why Iranian ESP students reported using the reading strategy, ‘using reference materials’, most frequently.

Three of the five least frequently used strategies fell into the category of Global Reading Strategies: ‘checking how text content fits purpose’ (GLOB,  $M = 2.35$ ), ‘noting text characteristics (e.g., length, organization)’ (GLOB,  $M = 2.33$ ), ‘taking notes while reading’ (GLOB,  $M = 2.33$ ), and ‘analyzing and evaluating what is read’ (GLOB,  $M = 2.20$ ). Two of the five least frequently used strategies fell into the categories of Support Strategies and Problem





Solving Strategies respectively: 'reading aloud when text becomes hard' (SUP,  $M = 2.20$ ), and 'adjusting reading speed' (PROB,  $M = 2.15$ ). These strategies appear to need more sophisticated techniques or actions beyond just decoding words. Taking into account Iranian EFL teaching and learning context in which resources including time, materials, and qualified EFL teachers are very limited and a size of the class is big, Iranian EFL learners are more likely to have few chances for the specific instructions to develop those reading strategies through their English classes. This might be a reason that Iranian ESP students reported using these reading strategies less frequently.

With regard to the influence of academic majors on the overall use of reading strategies, the results were statistically significant. Students majoring in environmental health ( $M = 3.68$ ) used more overall reading strategies than those majoring in occupational health and safety ( $M = 3.35$ ) and midwifery ( $M = 3.43$ ) (See Tables 6, 7, 8). These results are consistent with the findings of Park (2010) and Wu (2005) studies. For example, Wu (2005) reported that Taiwanese college students majoring in applied foreign language and education used more metacognitive reading strategies than those majoring in food beverage management and applied math.

There are two possible explanations for this result: environmental health students might have had more opportunities to practice reading strategies in their English classes. In addition, environmental health students are probably more motivated and more interested in reading in English than occupational health and safety and midwifery students.

## 7. Conclusion

Based on the findings of the study, pedagogical implications can be made. L2 teachers may include the role of all metacognitive reading strategies (e.g., global, support and problem solving strategies) in the instruction of reading sections when they teach Iranian EFL learners. As the moderate overall mean of metacognitive reading strategies in this study showed that Iranian ESP students were not using the full range of suitable reading strategies and were not aware of all them, it sounds apt that ESP instructors raise students' awareness of the wide range of reading strategies available to them. L2 reading teachers should instruct strategies explicitly that Iranian ESP students do not know, therefore, Iranian ESP students realize that using reading strategies helps them in comprehending texts and helps them in monitoring and controlling their comprehension.

The minimal use of problem solving strategies as reported in this study implied that L2 reading instructors should emphasize more on problem solving strategies, such as pausing and thinking about reading, re-reading for better understanding when text becomes difficult, guessing meaning of unknown words. Teachers should also give more attention to the five least frequently used strategies reported in this study such as checking how text content fits purpose, noting text characteristics (e.g., length, organization), reading aloud when text becomes hard, etc.

In sum, this research provides English teachers and curriculum planners with validated information on reading strategies currently used by Iranian ESP students. The findings allow English teachers and curriculum planners to understand which overall reading strategies are used by Iranian ESP students. It also allows English teachers and curriculum planners to think upon their current teaching approach. The instructors and planners should analyze the current curriculum and teaching practice to see its compatibility with reading strategies most preferred or utilized by learners. In addition, teachers' awareness of the needs of their Iranian ESP students is increased.

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APPENDIX (A)

**The Survey of Reading Strategies Inventory (SORS)**

Directions: Listed below are statements about what people do when they read *academic or school-related materials* such as textbooks or library books.

Five numbers follow each statement (1, 2, 3, 4, 5), and each number means the following:

- 1 means “I **never or almost never** do this.”
- 2 means “I do this **only occasionally**.”
- 3 means “I **sometimes** do this” (about **50%** of the time).
- 4 means “I **usually** do this.”
- 5 means “I **always or almost always** do this.”

After reading each statement, **circle the number** (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are **no right or wrong answers** to the statements in this inventory.

**Type Strategy Scale**

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 I 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 critically analyze and evaluate the information presented in the text.
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 I read.
25. When text becomes difficult, I re-read it to increase my understanding.
26. I ask myself questions 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.