English Language Teaching Vol. 2, No. 1, pp. 1-20, 2015

### A Triangulated Approach to Reading Strategy Use: Do General and Academic Reading Materials Make a Difference?

### Javad Zare\*

PhD Candidate of Applied Linguistics at the University of Isfahan, Iran

### Abstract

This paper was an attempt to explore the reading strategy use of Iranian M.A. students with general and discipline-related texts. More specifically, this was an endeavor to see if relation to discipline affects the reading strategy use of the students. To this end, a Nelson test and the reading comprehension section of TOEFL were used to select sixty-five power engineering and physics M.A. students at Iran University of Science and Technology (IUST) to participate in the study. Given the mixed-methods nature of the study, both quantitative, Survey of Reading Strategy Use (SORS), and qualitative, think-aloud protocol, procedures were followed. The participants based their responses to SORS and the think-aloud procedure on the reading comprehension section of TOEFL test and two discipline-related reading comprehension tests. By and large, analysis of these two procedures suggested that reading strategy use did not differ significantly across general and discipline-related texts, as long as power engineering and physics students are concerned. Additionally, whereas power engineering students used strategies more frequently with general reading texts, physics students resorted to strategies more frequently with discipline-related texts.

Keywords: reading strategy use, think-aloud protocol, SORS, mixed-methods

<sup>\*</sup> PhD candidate of Applied Linguistics at the University of Isfahan, Iran Received on:06/01/2016 Accepted on: 15/03/2016 Email: javadzare@gmail.com

## 1. Introduction

There is an old proverb which says "give a man a fish and he eats for a day. Teach him how to fish and he eats for a lifetime." Applied to the field of language teaching, it might be taken to mean that if students are instructed how to learn, they are enabled to learn any language by themselves (Wenden, 1985).

Over the years, a great deal of attempt has been made to develop theories of language learning. However, issues relating to learner and how learning takes place have always been treated with neglect (Griffiths, 2013). It was in the 1970s that a significant shift took place in second language acquisition. This significant shift resulted in a new line of research with less stress on teachers and teaching and more emphasis on learners and learning. Since then, a great deal of effort has gone into developing theories accounting for individual differences in language learning.

One of the concepts which are directly related to individual differences is language learning strategies. Oxford (1993, p. 175) refers to language learning strategies as "specific actions, behaviors, steps, or techniques that students employ – often consciously – to improve their own progress in internalizing, storing, retrieving, and using the L2". Reading strategies, as subcategory of learning strategies, are "the mental operations involved when readers purposefully approach a text to make sense of what they read" (Garner & Alexander, 1989, p. 66). Hence, reading strategies are deliberately planned and used by learners to remedy apparent cognitive failure.

Language learning strategies, in general, and reading strategies, in particular, are believed to be of paramount importance in any act of reading for their facilitative effect on reading comprehension and what they reveal about the readers' orchestration of their interaction with the text. In this regard, Brown (2007, p. 306) asserts "reading comprehension is a matter of developing appropriate, efficient comprehension strategies".

Valuable work has been and continues to be done on different aspects of reading strategies. Yet, certain variables remain less explored in the literature. One of the variables that affect strategy choice is the context or the task at hand. Many investigations have been conducted into the effect of context on strategy choice (e.g. Eley, 1992; Harish, 2014; Kramsch, 1993; Kyungsim & Leavell, 2006; Norton & Toohey, 2001; Oxford, 1996; Takeuchi, Griffiths, & Coyle, 2007; Yvonne, Vermetten, Lodewijks, & Vermunt, 1999).

Since EAP university students have to deal with various types of English materials from general texts to more technical articles and course books throughout their studies, an understanding of the difference between the strategies used when reading general and technical texts may pave the way for designing effective course materials and class activities that improve the students' reading comprehension, benefiting from the specifics of the learning environment. Nevertheless, little, if any, to the knowledge of the authors, is known about the strategies used for reading general and technical texts. To this end, the present study is an attempt to investigate whether there is any significant difference in the reading strategy use of university M.A. students in general and academic reading comprehensions.

# 2. Literature Review

# 2.1 Conceptualization of Language Learning Strategy

The concept of language learning strategy has been extremely difficult to define in an agreed fashion, as Ellis (1994) states. It has been referred to as "elusive" (Wenden, 1991, p. 7), "fuzzy" (Ellis, 1994, p. 529) and "fluid" (Gu, 2005, p. 2). Definitional fuzziness of language learning strategy as a thought-provoking issue has recently been debated and talked over vigorously in the literature (Dörnyei, 2005; Gao, 2007; Griffiths & Oxford, 2014; Macaro, 2006; Skehan, 1989; Tseng, Dörnyei, & Schmitt, 2006).

Chamot (2004) describes learning strategies as the conscious thoughts and actions taken by learners in order to achieve a learning goal. Strategic learners, as Chamot notes, have meta-cognitive knowledge about their own thinking and learning approaches, a good understanding of what a task entails, and the ability to orchestrate the strategies that best meet both the task demands and their own learning strengths. More recently, Griffiths (2013, p. 36) describes language learning strategies as "activities consciously chosen by learners for the purpose of regulating their own language learning."

Based on this definition, Griffiths (2008) suggests six important features of language learning strategies: (1) they are active (Brown, 2007; Chamot, 1987; Cohen, 1998; Oxford, 1990b; Wenden, 1987); (2) they are conscious (Chamot, 2004, 2005; Cohen, 1998; Cohen & Macaro, 2007; Grabe & Stoller, 2002; Macaro, 2006; Oxford, 2003); (3) they are optional (Cohen, 1998; Oxford, 2003); (4) they are goal-oriented (Chamot & Kupper, 1989; Oxford, 1990b); (5) they are oriented toward self-regulation (Oxford, 2003; Wenden, 1991); (6) they are not automatic and facilitate learning (Oxford, 1990b).

## 2.2 Studies in Language Learning Strategy

After the introduction of the concept of language learning strategies, the need for operationalization of this newly identified concept became apparent, leading to a rush of research into this field. Generally, these studies fall into two basic categories. The first is a broad group of descriptive studies which focus on the features of successful and poor language learners, the total number of strategies, used by learners or groups of learners, referred to as 4 A Triangulated Approach to Reading Strategy ...

taxonomy, and comparisons of strategy use among different groups of learners (Lee & Oxford, 2008; Naiman, 1975; Oxford, 1999; Reis, 1985; Rubin, 1975). The second is a group of intervention studies which seek to discover whether it is possible to cause change in learners' strategy use through strategy instruction (Chamot, 2004, 2007; Chamot, Barnhardt, El-Dinary, & Robbins, 1996; Grenfell & Harris, 1999; Harris, Gaspar, Jones, Ingvarsdottir, Palos, Neuburg, & Schindler, 2001; McDonough, 1999; O'Malley & Chamot, 1990).

The first line of these studies began in the 1970s with the seminal works of Rubin (1975) and Stern (1975: 42) who suggest that a model of "the good language learner" could be constructed around special strategies that successful L2 learners use.

Studies into less successful second language learners and readers, generally, form three distinct viewpoints. The first perspective holds that such learners use fewer strategies than successful learners and that these strategies are highly restricted to type (Ehrman & Oxford, 1995; Green & Oxford, 1995; Hosenfeld, 1977; Parilah, Aminuddin, Suhana, Nurulhafizah, Yurni, Shahirah, & Hashim, 2010; Vandergrift, 1997). The second view is that less successful L2 learners do not really know what strategies they use. In other words, they cannot readily explain the strategies they use. As a matter of fact, developing an awareness of strategies is a necessity for their language learning to be effective (Macaro, 2006; Nvikos & Oxford, 1993; Sheorey & Mokhtari, 2001). And the third viewpoint maintains that several less successful L2 learners are indeed aware of the strategies they use, and employ them as often as do successful learners. However, the difference lies in careful orchestration of strategies by good language learners (Ku, 1997; Vann & Abraham, 1990). This viewpoint implies that there is no single set of strategies that good or successful language learners use. Rather, less successful learners use strategies in a random, unconnected, and uncontrolled manner (Chamot et al., 1996), whereas more effective learners show careful orchestration of strategies, targeted in a relevant and systematic way at specific L2 tasks (Khaldieh, 2000; O'Malley, & Chamot, 1990).

Therefore, it can be presumed that a strategy is neither good nor bad; it is essentially neutral until the context in which it is used is thoroughly considered. Rubin (2008, p. 11) stresses "it is not the presence or absence of a strategy that leads to effective learning; rather it is how that strategy is used (or not used) to accomplish tasks and learner goals". Dörnyei (2005) also points out, it is the operationalization of the strategy that is critical, not the strategy.

Aimed to achieve an operationalization of strategies, Eley's (1992) study suggested that individual students use different strategies in different learning contexts. However, the variability shown by individual students from one context to another seems quite small in magnitude. Eley attributes this variability to either or both of two explanations. First, the two contexts have

common teaching patterns. Second, variability stems from personal traits and individual differences. Eley argues that learners have "well established predispositions towards particular patterns of study, and they tend to select course units which fit" (Eley, 1992, p. 251).

Entwistle and Ramsden (cited in Yvonne et al., 1999) also investigated students' use of reading strategies in different academic tasks. Their findings indicate that the same students use different strategies under different circumstances.

Yvonne et al. (1999) investigated consistency and variability of learning strategies in different university courses. The authors concluded that reported learning strategies differ among university courses within the same group of students.

Lately, Harish (2014), drawing on structuralist and sociocultural theories, investigated social strategy use of India's Malayalee undergraduate students across three main language learning contexts (in class, on campus outside the classroom, and off campus). The results indicated that social strategy use of the students is highly context-bound.

### 2.3 General English and EAP

As mentioned earlier, the area of concern for this study is consistency or variability of reading strategy use over general materials (General English) and technical or academic texts (English for Academic Purposes). Difference in strategy use between these two cases may be attributed to the difference between these types of materials. English for Academic Purposes (EAP) courses are usually taken by adults who already have some familiarity with English and learning for specialized purposes. As a matter of fact, an EAP program is built around an assessment of learners' needs and purposes. Accordingly, while in a General English (GE) course, all the four language skills are important, in an EAP course it is the language needs analysis that determines which skills to teach. O'Malley and Chamot (1990, p. 140) note that the "objectives of a particular language course determine to a large degree the types of strategies students learn to use''.

The difference between GE and EAP can also be attributed to the use of language. As Fiorito (2005) points out, ESP programs, in general, and EAP courses, in particular, focus more on the language used in context, while GE courses concentrate on teaching grammar and view language as separated from the students' real world. EAP is also different from GE, as EAP's focal point is the integration of language into a subject matter which is important to learners. This combination, according to Fiorito, of subject matter and English language teaching can be both motivating and beneficial.

# 2.4 The Need for More In-Depth Studies of Reading Strategies

By and large, the points mentioned in the last two sections indicate the susceptibility of learning strategies to changes in the context of use. The finding that students adapt their learning strategies to the specifics of the learning environment suggests that strategies are prone to context determination.

The rationale underlying this study is the notion that "the learner consciously chooses strategies that fit his or her learning style and the L2 task at hand" (Oxford, 2003, p. 2). Therefore, this study investigated whether there was any qualitatively and quantitatively significant difference in the reading strategy use of university M.A. students in reading general and academic texts. The following research question was addressed in this study:

Is there any significant difference between the reading strategy use of university M.A. students in reading general and technical texts?

# 3. Method

# 3.1 Participants

The participants of this study were 65 Iranian M.A. students from Iran University of Science and Technology (IUST), selected through accidental or availability sampling. Thirty-two of the participants (49%) were studying power engineering; of this number twenty-seven were tested with the use of SORS and five were tested through a think-aloud procedure. The remaining thirty-three of the participants (51%) were students of physics; likewise, of this number twenty-eight were tested with the use of SORS and five were tested through a think-aloud procedure. Participants were all male and their ages ranged from 24 to 30. Willingness, commitment to spend a minimum of three hours for participating in all phases of the study, their academic field of study, and gender were the criteria for selection in the study.

## 3.2 Instrumentation

In this study, two English language proficiency tests, a strategy inventory— SORS (Appendix), a think-aloud procedure, and two technical reading texts were used as the main instruments for data collection. Nelson test and the reading section of TOEFL test were used as pretests to tap students' English proficiency level and to ensure homogeneity. The reading section of the TOEFL was also used as a specific language task based on which the participants reported their strategy use. In a pilot test, the TOEFL's measure of internal consistency i.e. Cronbach's alpha turned out to be (0.85). This was calculated because only the reading section of the original TOEFL test was administered to the students.

6

7 English Language Teaching, Vol. 2, No. 1, 2015

Survey of Reading Strategy (SORS), along with a think-aloud procedure, were employed to tap the type and the extent to which each reading strategy was used. SORS measures adolescent and adult EFL or ESL students' metacognitive awareness and perceived use of reading strategies while reading academic materials (Mokhtari & Sheorey, 2002). The think-aloud procedure was used to complement the findings obtained from SORS.

SORS measures three broad subscales of reading strategies including global, problem-solving, and support strategies (Mokhtari & Sheorey, 2002). The first factor, global reading strategies, includes 13 items which represent a set of reading strategies oriented towards a global analysis of the texts. The second factor, problem-solving reading strategies, comprises eight items which present strategies for facing difficulty when reading. The third factor, support reading strategies, contains nine items which primarily involve the use of outside reference materials, taking notes, and other strategies which provide support mechanisms for enhancing reading comprehension.

Original SORS was in English. However, following Griffiths and Oxford's (2014) recommendation for the use of strategy inventories and in order to avoid confusion on the part of the subjects, it was decided to adapt SORS for the purposes of this study. At first, it was translated into Persian. Afterwards, the translated version was submitted to a Persian language expert for further proofreading. Some subsequent modifications regarding directness, simplicity, specificity, and discreteness (Kavita, Sleezer, & Russ-Eft, 2007) were made to the translated version. The strategy category identifications of questions, which were apparent in the original SORS, were also removed in the adapted version to avoid any distraction or confusion.

Upon completion, the Persian version of SORS was subjected to pilot testing. This was done in response to Oxford's (2011) recommendation that in using a pre-existing strategy inventory, researchers had better make cultural adaptations and re-assess reliability and validity of the inventory they use. The results of the reliability analysis revealed a Cronbach's alpha of 0.78. Because of their large number of items, surveys tend to be strong in reliability, though; validity seems to be a major setback in questionnaire development (Barker, Pistrang, & Elliott, 2005). This can be attributed to humans' feelings and trends being hard to assess by Likert-type rating scales. Validation of self-report measures, for the most part, has tended to rely on face validity (Crandall, 1976). The reviews, proof readings, and modifications made to wording, content, and format of the questionnaire were all concerned with validity, and may ensure practicality of the instrument; it has been used frequently before, after all.

Two technical reading texts were also employed in the study. These texts were constructed around some essays from within the literature of the two fields. To keep originality of the texts, their discourse features, and technical 8 A Triangulated Approach to Reading Strategy ...

load, the researcher kept the content of the essays intact. However, length of the texts was investigated to be equal. Readability indices of the texts were also calculated to ensure homogeneity. The Gunning-Fog Index for the two texts-- power engineering, and physics-- were computed to be 16.49, and 15.90, which indicate an average amount of readability. For questions, ten items including three factual, three referential, three inferential, and one vocabulary questions were written (Farhady, 1998). Afterwards, the two technical reading texts were subjected to pilot testing, the results of which revealed Cronbach's alpha of 0.815, and 0.723 for power engineering, and physics texts, respectively. Expert opinion was taken into consideration for maintaining validity of these texts.

# 3.3 Data Collection Procedure

The participants took the Nelson test and the reading comprehension section of the TOEFL in two separate sessions. Based on their scores on these two tests, they were selected for inclusion in the investigation.

Having been pretested, thirty-two power engineering, and thirty-three physics M.A. students were chosen for the investigation. To achieve accurate assessments of the use of reading strategies, SORS was given to the subjects upon completion of the reading section of the TOEFL. During the TOEFL reading test, students were instructed to verbalize their thoughts through a think-aloud procedure. These verbalizations were recorded and later transcribed to check their consistency with the results of SORS. One point worth noting is that in response to the growing use of mixed-methods approach in studies of applied linguistics and Woodrow's (2005, p. 96) criticism that "with so many contextual influences on strategy choice, it seems that a single instrument could not possibly be applicable and useful to all possible groups of language learners", both quantitative, SORS, and qualitative, think-aloud, methods were used to complement the findings.

Subsequently, three technical reading texts were developed for the objectives of this study. Considerable attention was paid when developing these reading passages because if any difference in the participants' strategy use could be observed, it would be because of these materials. Afterwards, these technical reading texts were administered to the subjects. Meanwhile, participants were asked to verbalize their thoughts with regard to how they read the technical texts. Later on, SORS was administered upon completion of the general and academic passages and the think-aloud procedure. In this way, they would not report their strategies from the items of SORS.

Subjects were all reminded that there was no right or wrong answer, their forthright and honest responses were important, and confidentiality was respected (Dörnyei, 2003). They were also assured that the researcher was only interested in an assessment of what they did while reading the general and

#### 9 English Language Teaching, Vol. 2, No. 1, 2015

technical passages. Afterwards, statistical analyses were employed to check the significance of the results obtained from SORS. Finally, the results of SORS and think-aloud were compared to triangulate the findings.

#### 4. Results and Discussion

This study investigated consistency/variability of reading strategy use over general and academic reading passages. Paired-samples t-tests were run to find the difference between mean scores of overall reading strategy use of power engineering and physics students when reading academic and general texts.

	Ν	Minimum	Maximum	Mean	Std. Deviation
Academic OVERALL	27	2.53	3.90	3.2679	.34188
General OVERALL	27	2.60	4.03	3.3148	.37908
Academic GLOB	27	2.69	4.08	3.3533	.38180
Academic PROB	27	2.75	4.50	3.6620	.45311
Academic SUP	27	1.56	4.11	2.7942	.61301
General GLOB	27	2.46	4.08	3.3903	.43353
General PROB	27	2.75	4.63	3.7083	.49638
General SUP	27	1.89	4.11	2.8354	.52873

Table 1Descriptive Statistics (Power Engineering)

As Table 1 shows, power engineering students used reading strategies more frequently following general texts than technical texts. More specifically, regarding the use of each strategy subscale, power engineering students used strategy subscales more frequently when reading general texts than when reading technical passages. However, as Table 1 illustrates, the difference in frequency of use in the two conditions was slight. It is interesting to note that power engineering students reacted more strategically in terms of frequency when dealing with general passages than when dealing with technical texts. In line with this, almost all the participants declared in their verbalizations in the think-aloud procedure that in reading the technical text, their technical knowledge played a very important role for their better understanding of the passage. However, the general passage became difficult when they lacked such knowledge about the topic; that is why they resorted to strategic behavior.

As Table 2 illustrates, paired-samples t-test yielded a value of .672 for observed statistic, t *observed*, which is smaller than t *critical*, 2.056, at .05 level of significance. This finding reveals that the difference observed among the mean scores of strategy use was not significant. More specifically, the use of reading strategies did not depend on the type of the text that power engineering students read.

10 A Triangulated Approach to Reading Strategy ...

Table 2

Paired Samples Test of Overall Reading Strategy Use (Electrical Power Engineering)

		Paired Differences						
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		Т	df	Sig. (2- tailed)
			mean	Lower	Upper	_		
Academ Pair 1 OVERA General OVERA	ic ALL .046 ALL	.568	.109	271	.177	.429	26	.672

Additional paired-samples t-tests were conducted to see if the use of each strategy subscale differed between general and academic texts. Table 3 summarizes the results.

#### Table 3

Paired Samples Test of Reading Strategy Subscales (Power Engineering)

		Paired Differences						
	Mean	Std. Deviation	Std. Error Mean	95% Con Interval Differ	5% Confidence Interval of the Difference		t df	
			mcun	Lower	Upper			
Academic Pair 1 GLOB – General GLOB	037 3	.647	.124	293	.219	297	26	.769
Academic Pair 2 PROB – General PROE	046 8	.648	.124	302	.210	371	26	.714
Academic SUI Pair 3 – General SUP	041	.881	.169	389	.307	243	26	.810

As Table 3 illustrates, the t observed values for global, problemsolving, and support strategy subscales were .769, .714, and .810, respectively. For each pair, t <sub>observed</sub>, .769, .714, and .810 is smaller than t <sub>critical</sub> (2.056) at .05 level of significance. Accordingly, the analysis reveals that the use of each strategy subscale by power engineering students was not statistically different for general and academic texts either.

The same statistical analyses were conducted for physics students. Table 4 illustrates the results.

As Table 4 presents, physics students used reading strategies more frequently for the technical text than for the general passage. Interestingly, physics students reacted differently. Regarding the use of each strategy subscale, physics students used problem-solving and support strategy subscales

#### 11 English Language Teaching, Vol. 2, No. 1, 2015

more frequently when they read the technical passage than when they read the general text. However, as Table 4 illustrates, the difference was slight.

Descriptive Statistics (1 Hysics)							
	N	Minimum	Maximum Mean		Std. Deviation		
Academic OVERALL	28	2.67	3.90	3.3556	.43908		
General OVERALL	28	2.63	3.90	3.2944	.44241		
Academic GLOB	28	2.62	4.00	3.3782	.44184		
Academic PROB	28	2.88	4.50	3.7396	.52076		
Academic SUP	28	2.33	3.89	2.9907	.57141		
General GLOB	28	2.69	4.00	3.4679	.46207		
General PROB	28	3.00	4.50	3.5938	.47412		
General SUP	28	1.78	4.00	2.7778	.62496		
Valid N (list wise)	28						

## Descriptive Statistics (Physics)

Interestingly, the results of the think-aloud procedure indicated that there was a slight difference between reading strategy use of physics students in the two conditions. Therefore, we concluded that, in terms of strategic behavior, physics students acted slightly differently from power engineering students, as they used more strategies for technical texts than power engineering students did.

#### Table 5

Table 4

Paired Samples Test of Subscale and Overall Strategy Use (Physics)

	_		_				
	Mean	SD	Std. Error Mean	Confid Interval Differe	95% ence of the ence	t Df Sig. (2- tailed)	
				Lower	Upper		
Pair 1 Academic OVERAL General OVERAL	.061	.669	.193	364	.486	.316 27	.758
Pair 2 Academic GLOB – General GLOB	089	.671	.193	516	.336	.463 27	.652
Pair 3 Academic PROB – General PROB	.145	.786	.227	353	.645	.642 27	.534
Pair 4 Academic SUP – General SUP	.212	.813	.234	303	.729	.907 27	.384

As Table 5 shows, t <sub>observed</sub> for overall, global, problem-solving, and support strategy subscales were .758, .652, .534, and .384, respectively. For each pair, t <sub>observed</sub> is smaller than t <sub>critical</sub>, 2.201 at .05 level of significance. Accordingly, the analysis reveals that the difference, reported in the use of each strategy subscale, was not statistically significant. In essence, physics

students used the same strategy subscales with slightly different frequencies in reading general and academic texts.

Despite the slight differences observed among the two groups in their use of reading strategies for general and academic passages, the results of the analyses of SORS and think-aloud data reveal that the differences were not significant. That is, reading strategy use of Iranian M.A. students did not vary, to a large extent, when reading general and technical passages. This finding is not in line with Harish (2014), Hadwin, Winne, Stockley, Nesbit, and Woszczyna (1997, cited in Yvonne et al., 1999) and Yvonne et al. (1999) who find strategy use statistically different in different situations. Their interpretation of this finding in its strongest form suggest "a model of the student as rational decision maker who considers each learning task individually" and adopts strategies accordingly (Eley, 1992, p. 232).

However, as in Eley's (1992) study, this study revealed a marginal variability in strategy use from general to technical passages. As Eley notes, this small magnitude in variability can be attributed to common features of the two contexts or similar personal traits among the students. Eley argues that learners come to a task with "well established predispositions towards particular patterns of study, and they tend to select course units which fit" (Eley, 1992, p. 251). In other words, personal traits or predispositions overshadow the role of task in choosing strategies.

# 5. Conclusion and Implications

Language learning strategy research, on the whole, contributes to an important and necessary modification, as Oxford and Nyikos (1989) assert. This modification involves "changing language learning classrooms into stimulating places where use of communicatively-oriented strategies for both learning and teaching will be commonplace" (Oxford & Nyikos, 1989, p. 297). This change may not lie in the application of a certain approach, but in "promoting a conscious awareness and use of workable strategies within the confines of the foreign language classroom" (Oxford & Nyikos, 1989, p. 297). As there is no cure-all set of strategies, identification and use of effective strategies in the classroom requires researchers answer questions concerning consistency and variability of strategy use. This paper presented an investigation of the use of reading strategies in technical and general texts. The results of our mixedmethods approach brought to attention the fact that reading strategy use of Iranian M.A. students did not vary significantly from general to technical passages.

Though scant, the results of this study may be beneficial to learners, and teachers, in general, and EAP learners, and teachers, in particular. The findings of the present study imply that power engineering students put into practice more strategies when reading technical materials and physics students employ more strategies when reading general materials.

As Oxford (2003, p. 2) highlights, when the learners consciously choose strategies that fit their learning style and the L2 task at hand, these "strategies become a useful toolkit for active, conscious, and purposeful self-regulation of learning". Strategy awareness is considered a necessity for language learning to be effective (Macaro, 2006; Sheorey & Mokhtari, 2001). Hence, the finding that power engineering students reacted more strategically to general texts than to technical passages may imply that teachers had better resort to more strategy awareness in technical materials with power engineering students. Alternatively, the conclusion that physics students used strategies more frequently when reading technical passages than when reading general passages may advise teachers that more strategy use be practiced with physics students for general texts.

### Acknowledgements

Our sincere gratitude goes to Dr. Esmaeel Abdollahzadeh, Associate Professor at the University of Exeter, and Dr. Omid Majd, Associate Professor at the University of Tehran, for their informative comments.

## References

- Barker, C., Pistrang, N., & Elliott, R. (2005). *Research methods in clinicalpsychology: An introduction for students and practitioners.* Chichester: John Wiley & Sons.
- Brown, H. D. (2007). *Principles of language learning and teaching*. White Plains, New York: Pearson Education.
- Carter, R., & Nunan, D. (2001). *The Cambridge guide to teaching English to speakers of other languages*. Cambridge: Cambridge University Press.
- Chamot, A. U. (1987). The learning strategies of ESL students. In A. Wenden, & J. Rubin (Eds.), Learner *strategies in language learning*, (pp. 71-83). Cambridge: Prentice-Hall.
- Chamot, A. U. (2004). Issues in language learning strategy research and teaching. *Electronic Journal of Foreign Language Teaching*, *1*, 14-26.
- Chamot, A. U. (2005). Language learning strategy instruction: Current issues and research. *Annual Review of Applied Linguistics*, 25, 112-130.
- Chamot, A. U. (2007). Accelerating academic achievement of English language learners: A synthesis of five evaluations of the CALLA model. In J. Cummins, & C. Davison (Eds.), *The international handbook of English language learning* (pp. 317-331). Norwell, MA: Springer.

14 A Triangulated Approach to Reading Strategy ...

- Chamot, A. U., & Kupper. L. (1989). Learning strategies in foreign language instruction. *Foreign Language Annals*, 22, 13-24
- Chamot, A. U., Barnhardt, S., El-Dinary, P., & Robbins, J., (1996). Methods for teaching learning strategies in the foreign language classroom. In R. L. Oxford (Ed.), Language learning strategies around the world: Cross-cultural perspectives (pp. 175-188). Manoa: University of Hawaii Press.
- Cohen, A. D. (1998). Strategies in learning and using a second language. London: Longman.
- Cohen, A. D., & Macaro, E. (2007). Conclusions. In A. D. Cohen, & E. Macaro (Eds.), *Language learner strategies: Thirty years of research and practice* (pp. 275-284). Oxford: Oxford University Press.
- Crandall, R. (1976). Validation of self-report measures using ratings by others. Sociological Methods & Research, 4, 380-400.
- Dörnyei, Z. (2003). *Questionnaires in second language research*. Mahwah, NJ: Lawrence Erlbaum.
- Dörnyei, Z. (2005). The psychology of the language learner: Individual differences in second language acquisition. Mahwah, NJ: Lawrence Erlbaum.
- Ehrman, M., & Oxford, R. L. (1995). Cognition plus: Correlates of language learning success. *The Modern Language Journal*, 79(1), 67-89.
- Eley, M. G. (1992). Differential adoption of study approaches within individual students. *Higher Education*, 23, 231-254.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Farhady, H. (1998). Constructing reading comprehension tests. *Roshd Foreign Language Teaching Journal*, *13*, 37-48.
- Fiorito, L. (2005). *Teaching English for specific purposes*. Retrieved from http://www.usingenglish.com/articles/teaching-english-for- specific-purposes-esp.html
- Gao, X. (2007). Has language learning strategy research come to an end? A response to Tseng et al. (2006). *Applied Linguistics*, 28, 615-620.
- Garner, R., & Alexander, P. A. (1989). Metacognition: Answered and unanswered questions. *Educational Psychologist*, 24, 143-158.
- Grabe, W. (1991). Current developments in second language reading research. *TESOL Quarterly*, 25, 375-406.
- Grabe, W., & Stoller, F. (2002). *Teaching and researching reading*. Harlow: Longman.
- Green, J. M., & Oxford, R. L. (1995). A closer look at learning strategies, L2 proficiency and gender. *TESOL Quarterly*, 29, 261-297.
- Grenfell, M., & Harris, V. (1999). *Modern languages and learning strategies in theory and practice*. London: Routledge.

- Griffiths, C. (2008). Strategies and good language learners. In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 83-98). Cambridge: Cambridge University Press.
- Griffiths, C. (2013). *The strategy factor in successful language learning*. Bristol, UK: Multilingual Matters.
- Griffiths, C., & Oxford, R. L. (2014). The twenty-first century landscape of language learning strategies: Introduction to this special issue. *System*, 43, 1-10.
- Gu, P. Y. (2005). Vocabulary learning strategies in the Chinese EFL context. Singapore: Marshall Cavendish.
- Harish, S. (2014). Social strategy use and language learning contexts: A case study of Malayalee undergraduate students in India. *System*, *43*, 64-73.
- Harris, V., Gaspar, A., Jones, B., Ingvarsdottir, H., Palos, I., Neuburg, R., & Schindler, I. (2001). *Helping learners learn: Exploring strategy instruction in language classrooms across Europe*. Graz, Austria: European Centre for Modern Languages.
- Hosenfeld, C. (1977). A preliminary investigation of the reading strategies of successful and unsuccessful second language learners. *System*, *5*, 111-123.
- Kavita, G., Sleezer, C., & Russ-Eft, D. (2007). A practical guide to needs assessment. San Francisco: Pfeiffer.
- Khaldieh, S. A. (2000). Learning strategies and writing process of proficient vs. less-proficient learners of Arabic. *Foreign Language Annals*, *33*, 522-534.
- Kramsch, C. (1993). *Context and culture in language teaching*. Oxford, UK: Oxford University Press.
- Ku, P. Y. N. (1997). *Predictors of strategy choice by EFL students in Taiwan*. Paper presented at RELC Seminar, Singapore.
- Kyungsim, H., & Leavell, A. (2006). Language learning strategy use of ESL students in an intensive English learning context. *System*, *34*, 399-415.
- Lee, K. R., & Oxford, R. L. (2008). Understanding EFL learners' strategy use and strategy awareness. *Asian EFL Journal 10*, 7-32.
- Macaro, E. (2006). Strategies for language learning and for language use: Revising the theoretical framework. *The Modern Language Journal*, 90, 320-337.
- McDonough, S. H. (1999). Learner strategies. Language Teaching, 32, 1-18.
- Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education*, 25, 2-10.
- Naiman, N., Frohlich, M., & Todesco, A. (1975). The good second language learner. *TESL Talk*, 6, 68-75.
- Norton, B., & Toohey, K. (2001). Changing perspectives on good language learners. *TESOL Quarterly*, 35, 307-322.

#### 16 A Triangulated Approach to Reading Strategy ...

- Nyikos, M., & Oxford, R. L. (1993). A factor analytic study of language learning strategy use: Interpretations from information-processing theory and social psychology. *The Modern Language Journal*, 77, 11-22.
- O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge: Cambridge University Press.
- Oxford, R. L. (1990a). Language learning strategies and beyond: A look at strategies in the context of styles. In S. S. Magnan (Ed.), *Shifting the instructional focus to the learner* (pp. 35-55). Middlebury, VT: Northeast Conference on the Teaching of Foreign Languages.
- Oxford, R. L. (1990b). Language learning strategies: What every teacher should know. Boston: Heinle & Heinle.
- Oxford, R. L. (1993). Research on second language strategies. *Annual Review* of Applied Linguistics, 13, 175-187.
- Oxford, R. L. (1996). Language learning strategies around the world: Crosscultural perspectives. Manoa, HI: Second Language Teaching and Curriculum Center, University of Hawai'i.
- Oxford, R. L. (1999). Relationships between second language learning strategies and language proficiency in the context of learner autonomy and self-regulation. *Revista Canaria de Estudios Ingleses, 38,* 108-126.
- Oxford, R. L. (2003). Language learning styles and strategies: An overview. Oxford, GALA.
- Oxford, R. L. (2011). *Teaching and researching language learning strategies*. Harlow, UK: Pearson Education.
- Oxford, R. L., & Nyikos, M. (1989). Variables affecting choice of language learning strategies by university students. *The Modern Language Journal*, 73, 291-300.
- Parilah, M. S., Aminuddin, Y., Suhana, M. L., Nurulhafizah, M., Yurni, E., Shahirah, H., & Hashim, M. (2010). Comparing reading processing strategies of second language readers. *American Journal of Applied Sciences*, 7, 140-144.
- Reiss, M. A. (1985). The good language learner: Another look. *The Canadian Modern Language Review*, 41, 511-523.
- Rubin, J. (1975). What the "good language learner" can teach us. *TESOL Quarterly*, 9, 41-51.
- Rubin, J. (2008). Reflections. In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 10-15). Cambridge, UK: Cambridge University Press.
- Sheorey, R., & Mokhtari, K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. *System, 29*, 431-449.

- Skehan, P. (1989). *Individual differences in second language learning*. London: Edward Arnold.
- Stern, H. H. (1975). What can we learn from the good language learner? *Canadian Modern Language Review, 34,* 304-318.
- Takeuchi, O., Griffiths, C., & Coyle, D. (2007). Applying strategies to contexts: The role of individual, situational and group differences. In A. D. Cohen, & E. Macaro (Eds.), *Language learner strategies: Thirty years of research and practice* (pp. 69-92). Oxford: Oxford University Press.
- Tseng, W. T., Dörnyei, Z., & Schmitt, N. (2006). A new approach to assessing strategic learning: The case of self-regulation in vocabulary acquisition. *Applied Linguistics*, 27, 78-102.
- Vandergrift, L. (1997). The comprehension strategies of second language (French) listeners: A descriptive study. *Foreign Language Annals*, *30*, 387-409.
- Vann, R. J., & Abraham, R. G. (1990). Strategies of unsuccessful language learners. *TESOL Quarterly*, 24, 177-198.
- Wenden, A. L. (1985). Learner strategies, TESOL Newsletter, 19, 1-7.
- Wenden, A. L. (1987). Metacognition: An expanded view on the cognitive abilities of L2learners. *Language Learning*, *37*, 573-594.
- Wenden, A. L. (1991). Learner strategies for learner autonomy: Planning and implementing learner training for language learners. New York: Prentice Hall.
- Woodrow, L. (2005). The challenge of measuring language learning strategies. *Foreign Language Annals, 38,* 90-98.
- Yvonne, J., Vermetten, H., Lodewijks, G., & Vermunt, J. D. (1999). Consistency and variability of learning strategies in different university courses. *Higher Education*, 37, 1-21.

#### Appendix

Appendix (Persian version of SORS)

پرسشنامه راهبردهای خواندن

هدف از این پرسشنامه جمع آوری اطلاعات درباره تکنیکهای مختلفی است که شما درحین خواندن متون مختلف به زبان انگلیسی استفاده می کنید.

تمامی عبارات، مربوط به خواندن و درک مطلب متون می باشد. بعد از هر عبارت پنج گزینه شامل الف، ب، ج، د، ه وجود دارد که بدین صورت تعبیر می شوند: الف. هرگز یعنی "هرگز چنین کاری نمی کنم." ب. بندرت یعنی "فقط گاهی چنین کاری می کنم (تقریبا ۵۰٪ اوقات)." ج. معمولا یعنی "اغلب چنین کاری می کنم (تقریبا ۶۰٪ –۸۰٪ اوقات)." ه. همیشه یعنی "همیشه چنین کاری می کنم."

پس از خواندن هر عبارت ، گزینه ای که بهتر شیوه خواندن شما را شرح می دهد انتخاب کنید. توجه داشته باشید که هیچ پاسخ صحیح یا غلطی برای عبارات موجود در این پرسشنامه وجود ندارد. در صورت بروز هر گونه سوالی می توانید از محقق کمک بگیرید.

#### مشخصات فردى



English Language Teaching, Vol. 2, No. 1, 2015 19  $\square$ الف. هرگز 🗌 ب. بندرت 🦳 ج. معمولا 📃 د. اغلب 🦳 ه. همیشه ۶. به این فکر می کنم که آیا محتویات متن با هدف من از خواندن مطابقت دارد یا نه. الف. هرگز 📃 ب. بندرت 🗌 ج. معمولا 🦳 د. اغلب 🗍 ە. ھمىشە به آرامی و با دقت می خوانم تا مطمئن شوم آنچه را می خوانم می فهمم. الف. هرگز 🗌 ب. بندرت 🗌 ج. معمولا 🦳 د. اغلب 🦳 ه. همیشه ۸. متن را ابتدا با توجه به خصوصیاتی همچون طول و ساختار مرور می کنم. الف. هرگز باندرت ج. معمولا د. اغلب 🗍 ه. همیشه وقتی که حواسم پرت می شود، سعی می کنم دوباره روی متن تمرکز کنم. ه. همیشه الف. هرگز 🌍 ب. بندرت 🦳 ج. معمولا 🦳 د. اغلب 🗍 . زیر نکات مهم خط می کشم تا آنها را بخاطر بسپارم. ه. همیشه 📙 د. اغلب الف. هرگز 📃 ب. بندرت 🦳 ج. معمولا 🗌 سرعت خواندنم را با توجه به آنچه می خوانم تغییر می دهم. الف. هرگز 🗌 ب. بندرت 🦳 معمولا 🗌 د. اغلب 🗍 ه. همیشه ۱۲. هنگام خواندن، تصمیم می گیرم چه چیزی را بخوانم وچه چیزی را نادیده بگیرم. الف. هرگز 🗍 ب. بندرت 🗍 ج. معمولا 📄 د. اغلب 🦳 ه. همیشه 🦳 ۱۳. هنگام خواندن، از کتابهای مرجع همچون فرهنگ لغت استفاده می کنم تا به فهم بهتر متن کمک کند. الف. هرگز 🌍 ب. بندرت 🏹 ج. معمولا 📄 د. اغلب 🦳 ه. همیشه ۱۴. وقتی که متن دشوار می شود، به آنچه می خوانم توجه بیشتری می کنم. الف. هرگز 📃 ب. بندرت 🦳 ج. معمولا 🦳 د. اغلب 🗌 ه. همیشه ۱۵. از جداول، اشکال و عکسهای موجود در متن برای فهم بیشتر کمک می گیرم. الف. هرگز 📃 ب. بندرت 🦳 معمولا 📃 د. اغلب 🦳 ە. ھمىشە ۱۶. هر از گاهی خواندن را متوقف می کنم و به آنچه می خوانم فکر می کنم. ه. همیشه الف. هرگز 🗍 ب. بندرت 🦳 ج. معمولا 🦳 د. اغلب 🗍 ۱۷. از سرنخ های موجود در متن استفاده می کنم تا آنچه را می خوانم بهتر درک کنم. الف. هرگز 🗍 ب. بندرت 🦳 ج. معمولا 🦳 د. اغلب 🦳 ه. همیشه 📄 .۱۸ مطالب ذکر شده در متن را به زبان خودم بیان می کنم تا بهتر آنها را درک کنم. الف. هرگز 🗌 ب. بندرت 🗌 ج. معمولا 🦳 د. اغلب 🦳 ه. همیشه 📄 ١٩. سعى مى كنم مطالب را مجسم كنم تا آنچه را مى خوانم بهتر به خاطر بسيارم. الف. هرگز ب. بندرت ج. معمولا د. اغلب م. همیشه ۲۰. از ویژگیهای چاپی متن همچون پررنگ بودن و حروف کج برای یافتن نکات کلیدی استفاده می كنم.

20 A Triangulated Approach to Reading Strategy
الف. هرگز 📃 ب. بندرت 🦳 ج. معمولا 📄 د. اغلب 📄 ه. هميشه
۲۱. اطلاعات ارائه شده در متن را منتقدانه تحليل وارزيابي مي كنم.
الف. هرگز 🗌 ب. بندرت 🦳ج. معمولا 📄 د. اغلب 🔄 ه. هميشه ڶ
۲۲. سعی می کنم در متن به قبل و بعد رجوع کنم تا مطالب موجود را به هم ربط دهم.
الف. هرگز 📃 ب. بندرت 🔄 ج. معمولا 📄 د. اغلب 📄 ه. هميشه 🗌
۲۳. وقتی که در متن با مطالب جدید مواجه می شوم میزان درکم را بررسی می کنم.
الف. هرگز 📃 ب. بندرت 📃 ج. معمولا 📃 د. اغلب 🔄 ه. هميشه 📃
۲۴. هنگام خواندن، سعی می کنم مضمون متن را حدس بزنم.
الف. هرگز 📃 ب. بندرت 📃 ج. معمولا 🔄 د. اغلب 📄 ه. هميشه 🗌
۲۵. وقتی که متن دشوار می شود، آنرا دوباره می خوانم تا درکم بیشتر شود.
الف. هر گز 📃 ب. بندرت 🦳 ج. معمولا 📄 د. اغلب 📄 ه. هميشه 📄
۲۶. هنگام خواندن، از خود سوالاتی می پرسم که مایلم در متن پاسخ داده شده باشند.
الف. هرگز 📃 ب. بندرت 🦳 ج. معمولا 📃 د. اغلب 🔄 ه. هميشه
۲۷. درست یا اشتباه بودن حدسهایم در مورد متن را بررسی می کنم.
الف. هرگز 📃 ب. بندرت 🔄 ج. معمولا 🔄 د. اغلب 📄 ه. هميشه
۲۸. هنگام خواندن، معنای کلمات و عبارات ناآشنا را حدس می زنم.
الف. هرگز 📃 ب. بندرت 🦳ج. معمولا 📃 د. اغلب 🔄 ه. هميشه 🔄
۲۹. هنگام خواندن، متن انگلیسی را به زبان مادریم ترجمه می کنم.
الف. هرگز 📃 ب. بندرت 📃 ج. معمولا 🔄 د. اغلب 📄 ه. هميشه 📃
۳۰. هنگام خواندن، هم به زبان انگلیسی و هم به زبان مادری، به مطالب فکر می کنم.
الف. هرگز 📃 ب. بندرت 🤄ج. معمولا 📄 د. اغلب 🔄 ه. هميشه 🗌