

Reading Strategy Use and Field of Study: A Mixed-Methods Study

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Abstract

This study was an attempt to explore the reading strategy use of Iranian M.A. students across three different fields of study. Eighty-two M.A. students of power engineering, physics, and communication were selected by a Nelson test and the reading comprehension section of a TOEFL. The reading comprehension section of the TOEFL served also as a specific task which helped participants report their strategy use. Both qualitative, think-aloud, and quantitative, SORS, procedures were used to tap the participants' use of reading strategies and to complement the findings. The results of these two procedures indicate that the use of overall, global, problem-solving, and support strategies by Iranian M.A. students was slightly different across different fields of study. Problem-solving and support strategies were the most and the least frequently used strategies, respectively. Moreover, reading strategy use of Iranian M.A. students, studying power engineering, physics, and communication was not related to their academic fields of study.

Keywords: Academic Field of Study, Reading Strategy Use, SORS, Think-Aloud, Mixed-Methods

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1. Introduction

Over the last decades, attempts have been made to develop theories of language teaching and learning. These efforts have all been made from the viewpoint of teaching and teachers. Much less attention has been paid to learning and learner issues, underestimating the significance of the part learners can play in language learning (Larsen-Freeman, 2001). However, more recently, second language acquisition has changed dramatically. This fundamental change originated from the rise of the mentalist model of language learning in linguistics (Chomsky, 1964) and cognitive psychology (Ausubel, 1968). Thereafter, such concepts as “learner-centered curriculum” (Nunan, 1988), “learner-centeredness” (Tudor, 1996), “learner strategies” (Cohen, 1998; Wenden & Rubin, 1987), and “language learning strategies” (Oxford, 1990b), underscoring the precedence of learners and learning over teachers and teaching were introduced. Therefore, learners were put in the spotlight of research to develop assumptions that account for their individual differences in language learning. Language learning strategies is one of the concepts that accounts for individual differences in learning and has, thus, gained momentum with the rise of learner-centered teaching.

Models of strategic learning have been applied to learning of the four language skills (Oxford, 1990b). One of these skills which has largely been influenced by the development of theories of strategic learning is reading. Reading is a complex process, the acquisition of which requires rigorous cognitive demands on the part of learners. Grabe (1991) in this regard writes “literacy in academic settings in developed countries exists within the context of massive amounts of print information” (p. 389).

The importance of reading strategies in reading is known to everybody, as reading strategy use facilitates learning to read effectively (e.g., Anderson,

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1991; Brown, 2007; Carter & Nunan, 2001; Grabe & Stoller, 2002; Oxford, 1990b; Rubin, 2008). Oxford (1990b) points out that these strategies make the learning process easier, more enjoyable, more self-directed, more effective, and more transferable to new situations. Brown (2007) writes “reading comprehension is a matter of developing appropriate, efficient comprehension strategies” (p. 306). Learning strategies are also effective in increasing learners’ independence and autonomy (e.g., Anderson, 1985; Carter & Nunan, 2001; Cotterall, 2008; Oxford, 1990a, b; Wenden & Rubin, 1987). Grabe and Stoller (2002), in their study of fluent readers, reveal that good readers possess the skill of using reading strategies. However, as Anderson (1991) argues, not only strategic reading is a matter of knowing which strategy to use, but also strategic readers must be able to use and orchestrate them with other strategies successfully. More recently, Rubin (2008) argues “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” (p. 11). That is, it is the operationalization of the strategy that is critical, not the strategy, in and of itself (Dörnyei, 2005). As a matter of fact, in order to help learners apply and orchestrate these strategies, studies need to focus on learners’ strategy use in different circumstances (Oxford, 1990b).

A review of language learning strategy research reveals that there are numerous factors which affect strategy use. Gender, motivation, learning styles, nationality, ethnicity, and language proficiency have all been demonstrated to have a relatively strong influence on the choice of language learning strategies (e.g., Green & Oxford, 1995; Oxford, 1990a; Oxford & Burry-Stock, 1995; Parilah, Aminuddin, Suhana, Nurulhafizah, Yurni, Shahirah, & Hashim, 2010). Oxford and Nyikos (1989) find such factors as the student’s motivation, the length of the time s/he had been studying the language, willingness to learn a

language, and the student's field of study to be significant to the study of learning strategies. Of all these factors, one which is of particular interest to this study has been treated with neglect. Academic field of study is assumed to be related to learners' use of reading strategies. In other words, reading strategies that EFL learners utilize while reading general passages are subject to change for learners from different academic fields of study (e.g., Eley, 1992; Oxford & Nyikos, 1989; Peacock, 2001; Peacock & Ho, 2003; Yvonne, Vermetten, Lodewijks, & Vermunt, 1999).

With these concerns in mind, this paper aimed to shed light on the relationship between field of study and reading strategy use of Iranian M.A. students in general materials. More specifically, it was to determine the most and least frequently used strategy subscales, on the one hand, and to explore whether there was any statistically significant difference in the reading strategy use of Iranian M.A. students across three fields of study, on the other. The following research questions were addressed throughout the study:

- Q1: Which subscales of strategies, i.e., global, problem-solving, or support, are used the least and the most by students from different fields of study?
- Q2: Is there any significant difference in the reading strategy use of Iranian M.A. students across different academic fields of study?

2. Reading Strategies Research: An Overview

Reading strategies have been defined and researched extensively in the literature (e.g., Anderson, 1991; Block, 1986; Carrell, 1985, 1998; Carter & Nunan, 2001; Cohen, 1990; Griffiths, 2013; Griffiths & Oxford, 2014; Paris, Lipson, & Wixson, 1983). Griffiths (2013) defines strategies as “activities consciously chosen by learners for the purpose of regulating their own language learning” (p. 36). Due to a lack of consensus on an all-encompassing definition

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for strategies, Macaro (2006) argues for listing defining characteristics of strategies according to which strategies can be described instead of giving definitions. These features include location, size, abstractness, relationship to other strategies, explicitness of goal orientation, and transferability (Macaro, 2006).

Classification of learning strategies is still a matter of debate. Different classifications have been suggested for the term (Griffiths & Oxford, 2014). O'Malley and Chamot (1990, p. 44-45) in a model which is heavily drawn on Flavell's (1971) concept of metacognition and Anderson's (1983) view of cognition, put forth a tripartite taxonomy dividing strategies into metacognitive, cognitive, and socio-affective strategies.

Metacognitive strategies refer to higher order executive skills that may entail planning for, monitoring, or evaluating the success of a learning activity. O'Malley and Chamot (1990) enumerate some of these "higher order executive" (p. 44) strategies as selective or directed attention, planning, monitoring, and evaluating.

Cognitive strategies refer to the techniques that involve interacting with instructional materials to be learned, manipulating the material mentally or physically in ways that enhance language learning. They are related to the task at hand and the manner in which linguistic information is processed. This category includes such strategies as rehearsing, organizing, inferring, summarizing, deducing, imaging, transferring, or inducing, and elaborating.

Socio-affective strategies represent a broad group of strategies that involves either interaction with another person, or ideational control over affection. They help learners enhance their tackling of a learning task. Socio-affective strategies include such strategies as cooperation, questions for clarification, and self-talk.

Following O'Malley and Chamot's (1990) framework, Mokhtari and Sheorey (2002) observe three types of reading strategies including global (metacognitive), problem-solving (cognitive), and support strategies.

Global strategies refer to advanced planning and comprehension monitoring techniques. Examples include setting purpose for reading, previewing text before reading, and using contextual clues.

Problem-solving strategies refer to the deliberate actions readers take when comprehension problems occur. These include using prior knowledge, reading aloud when the text becomes hard, and adjusting the reading rate.

Support strategies are the tools readers seek out to aid their comprehension. Support strategies include such strategies as taking notes while reading, asking oneself questions, and going back and forth in the text (p. 4).

Different aspects of reading strategy use have been examined. These include (1) descriptions of strategies naturally used by second or foreign language readers; (2) transfer of first language strategies to second or foreign language reading; (3) actual effectiveness of strategies generally deemed as successful; (4) learners' thoughts about what they do when they read (their metacognitive perception); (5) the relationship between readers' metacognition, their comprehension, and, actual strategy use (Lee & Oxford, 2008); (6) the usefulness of training students to use productive strategies, and (7) the relationship between readers' strategy use, personal traits, and the task at hand. The present study is part of the last category.

One of the factors which affects reading strategy use is field of study. Various research studies have explored the relationship between field of study and reading strategy use (e.g., Ehrman & Oxford, 1995; Harish, 2014; Lonka, & Lindblom-Ylänne, 1996; Mochizuki, 1999; Oxford & Nyikos, 1989; Peacock, 2001). Ehrman and Oxford (1995) study 262 English native-speaker

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government employees studying different foreign languages and observe that the most frequently used strategies are from the compensation category followed by social and cognitive, then metacognitive, memory, and affective strategies.

Lonka and Lindblom-Ylänne (1996) investigate 116 medical and 59 psychology students and reveal disciplinary differences between students of psychology and medicine. The latter group shows more externally regulated learning.

Furthermore, Mochizuki (1999) investigates 157 Japanese university students. The results indicate that academic field of study is one of the variables that affects strategy choice. Besides, English major students use compensation, social, and metacognitive strategies more often than do science students.

In another attempt, Peacock (2001) investigates 140 students from departments of science, mathematics, and engineering. Two broad differences are found between students from different disciplines. First, physics students use significantly fewer cognitive strategies than mathematics and engineering students do. Second, mathematics students use significantly fewer metacognitive strategies.

Likewise, Oxford and Nyikos (1989) explore disciplinary differences in strategy choice. In a comprehensive study, Oxford and Nyikos investigate the variables affecting the choice of learning strategies by 1,200 foreign language students in an academic setting. The authors find that field of specialization makes a highly significant difference for factor two and three-- functional practice strategies and resourceful, independent strategies-- with humanities; university students of humanities use functional practice strategies and resourceful, independent strategies significantly more often than do their technical and business counterparts. In their interpretation of the findings,

Oxford and Nyikos argue that students of humanities seem to “take seriously the need to find extracurricular, communicatively oriented practice opportunities in natural settings and to guide their own language study in an autonomous, independent way, reflecting an awareness of metacognitive strategies” (p. 296). Such findings indicate the language learning goal of developing communicative competence. As a matter of fact, this may indicate that the goal of language learning plays a major role in the selection of language learning strategies.

More recently, Harish (2014), drawing on structuralist and sociocultural theories, investigates social strategy use of India’s Malayalee undergraduate students majoring in arts, science, medicine, and engineering across three main language learning contexts-- in class, on campus outside the classroom, and off campus. The results of this study show significant differences in overall strategy use across academic specialties.

3. Methodology

3.1. Context and Participants

A total number of 82 Iranian M.A. students at IUST and ATU took part in this study. Thirty-two percent of the participants were students of power engineering (27 participants), thirty-four percent of the participants were studying physics (28 participants), and the last thirty-two percent of the participants (27 participants) were majoring in communication discipline. They were all male and their average age was 26, ranging from 24 to 30. The criteria for selection included willingness to participate in the study, commitment to spend a minimum of three hours for participating in all phases of the study, and their academic field of study.

3.2. Instruments

Two English language proficiency tests, a strategy inventory, and a think-aloud protocol were the main instruments used in the study. The two proficiency tests included a Nelson test and the reading comprehension section of a TOEFL. These instruments were aimed to ensure homogeneity of the students regarding English proficiency level. The purpose of the use of TOEFL was two-fold. It functioned both as a test to tap the students' reading comprehension ability and a specific language task on which the participants could base their responses to the items in the SORS and think-aloud protocol. In a pilot test, the TOEFL's measure of internal consistency-- Cronbach's alpha-- turned out to be 0.851. This was calculated because only the reading section of the original TOEFL test was administered to the students.

SORS and think-aloud procedure were employed to measure the type and the extent to which each strategy subscale was employed by the participants. The think-aloud procedure was intended to complement the findings obtained from SORS.

SORS was originally in English. Following Oxford's (2011) and Griffiths and Oxford's (2014) recommendations 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, it was decided to adapt SORS for the purposes of this study. At first, it was translated into Persian. Subsequently, it was investigated for possible ambiguities by a Persian language expert. Afterwards, some modifications regarding directness, simplicity, specificity, and discreteness (Kavita, Sleezer, & Russ-Eft, 2007) were made to increase its validity. Then, the Persian version of SORS (Appendix) was subjected to pilot testing. The results of the reliability analysis yielded an acceptable measure of internal consistency (α : 0.78).

3.3. Procedure

A total number of 82 subjects from three different fields of study including power engineering, physics, and communication at IUST and ATU took part in this study. The three groups of subjects took the Nelson test and the reading comprehension section of the TOEFL test in two separate sessions with a time constraint of 50 minutes on the Nelson test and 20 minutes on the TOEFL reading comprehension. While the participants were reading the TOEFL reading text, they were asked to verbalize their thoughts as to how they performed the reading. These think-aloud protocols were recorded and later transcribed in order to check their congruence with the findings of SORS. Accordingly, bonus time was given to the participants to complete the task. Based on their scores on the two proficiency tests, participants were homogenized to ensure that they were all within the same level of English language proficiency.

Having been pre-tested, 27 power engineering, 28 physics, and 27 communication M.A. students were selected for further investigation. SORS was administered immediately after the participants took the reading section of the TOEFL. With this procedure, the reading comprehension functioned as both a pretest and a specific language task which helped students report their strategy use in SORS and think-aloud procedure.

General guidelines of questionnaire administration (Dörnyei, 2003) were all followed. Participants were reminded that there was no right or wrong answer, their forthright and honest responses were important, and confidentiality was respected. The participants were also assured that the researcher was only interested in an accurate appraisal of how they did the reading text.

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It is worth mentioning here that, due to the current trend in conducting studies through mixed-methods approach, and Woodrow's (2005) criticism that not every group of learners can be studied through a single instrument with so many contextual factors present, both quantitative (SORS) and qualitative (think-aloud) methods were employed to complement the findings. Finally, statistical analyses were performed to investigate the significance of the results.

4. Results and Discussion

Table 4.1 presents the results of descriptive statistics for the students of power engineering, physics, and communication.

Table 4.1. Descriptive Statistics (Overall Strategy Use)

Major	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum
					Lower Bound	Upper Bound	
Power engineering	27	3.2679	.34188	.06579	3.1327	3.4031	2.53
Physics	28	3.3298	.35882	.06781	3.1906	3.4689	2.67
Communication	27	3.2642	.56719	.10916	3.0398	3.4886	1.53
Total	82	3.2878	.42968	.04745	3.1934	3.3822	1.53

As Table 4.1 illustrates, the mean scores of the overall use of reading strategies for power engineering, physics, and communication students were 3.267, 3.32, and 3.264, respectively. According to Mokhtari and Sheorey's (2002) interpretation scheme, a mean of 3.5 or higher is high, a mean of 2.5 to 3.4 is moderate, and a mean of 2.4 or lower is low. This indicates that all the participants had moderate use of reading strategies.

Table 4.2 illustrates the average scores of the use of global, problem-solving, and support strategies by power engineering, physics, and communication students.

Table 4.2. Descriptive Statistics (Use of Each Strategy Subscale)

	Academic Field of Study	Mean	Std. Deviation	N
Global Mean	Power engineering	3.3533	.38180	27
	Physics	3.3379	.45404	28
	Communication	3.2279	.61741	27
	Total	3.3068	.49091	82
Problem-solving Mean	Power engineering	3.6620	.45311	27
	Physics	3.6563	.45214	28
	Communication	3.6574	.69302	27
	Total	3.6585	.53685	82
Support Mean	Power engineering	2.7942	.61301	27
	Physics	3.0278	.43784	28
	Communication	2.9671	.55368	27
	Total	2.9309	.54114	82

As Table 4.2 presents, problem-solving or cognitive strategies (3.66, 3.65, and 3.65) were the most often used category by students of power engineering, physics, and communication, followed by global or metacognitive (3.35, 3.33, and 3.22) and support strategies (2.79, 3.02, and 2.96). Thus, the findings regarding the first research question indicate that Iranian M.A. students of power engineering, physics, and communication used the same reading strategies with partially different frequencies.

The results of the think-aloud procedure also confirms the most frequent use of problem-solving strategies. This is reflected in the remarks of the students.

- (1) When I'm reading a text, I do it slowly and carefully.

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(2) Sometimes I stop to think for a while to have a better understanding of the passage

The remarks of the students in (1) and (2) are examples of problem-solving or cognitive strategies in SORS. What is important to note is that the students declared more frequently the use of problem-solving (1, 2) than metacognitive and support strategies (3, 4).

(3) I critically evaluate the information presented in the text.

(4) I use dictionaries and other source books when reading a text.

The strategies used in (3) and (4) are examples of global and support strategies in SORS, respectively.

Therefore, the results of the two procedures-- SORS and think-aloud--altogether indicate that the three groups performed both quantitatively and qualitatively equally in terms of strategic behavior. The results of this section of the study are in line with those of Mullins (1992) who found high level of use for cognitive and metacognitive strategies and average level of use for social, memory, and affective strategies with Thai university students. The findings are also in keeping with what Ku (1997) observed. Studying college students in Taiwan, Ku observed that compensation strategies are the most frequently used strategies, followed by cognitive, metacognitive, memory, social and affective strategies. Moreover, the results provide support for Peacock's (2001) conclusion that primarily cognitive and compensation strategies are the most often used strategies.

It is worth mentioning that high level of use for cognitive and metacognitive strategies is a shared finding among these studies. Cognitive strategies, as Mokhtari and Sheorey (2002) note, are "the actions and procedures that readers use, while working directly with the text" (p. 4). They are localized, focused techniques that readers utilize when problems develop in

understanding textual information. The most frequent use of cognitive strategies may suggest one of the following explanations. First, cognitive strategies contribute to effective language learning (Oxford & Ehrman, 1995). Therefore, students, being aware of the benefit of these strategies consciously put them into service. Second, cognitive strategies involve different individual characteristics. Therefore, if cognitive strategies fit the particular student's learning style preferences, s/he makes use of them. And thirdly, cognitive strategies seem to require fewer techniques or actions from readers.

Table 4.3 illustrates the results of ANOVA.

Table 4.3. ANOVA (*Academic Field and Overall Strategies Use*)

	Sum of Squares	Df	Mean Square	F	Sig.
Between-Groups	.075	2	.038	.199	.820
Within-Groups	14.879	79	.188		
Total	14.954	81			

As it can be observed, the $F_{observed}$ (0.199) is smaller than $F_{critical}$ (3.07 with a df_b of 2 and df_w of 79). As a matter of fact, in spite of a marginal difference in the overall use of reading strategies across the three disciplines, there was insufficient evidence to claim that the difference among the means was significant; the participants' academic fields of study were not related to their overall use of reading strategies. Therefore, it can be claimed there was no statistically significant difference in the reading strategy use of Iranian M.A. students from disciplines of power engineering, physics, and communication.

The second research question may be further analyzed in terms of the specific strategy subscales associated with different fields of study. Therefore, additional statistical analyses (MANOVA) were used to investigate the relationship between fields of study and the three reading strategy subscales--global, problem-solving, and support.

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Table 4.4 shows the results of MANOVA.

Table 4.4. *Multivariate Tests*^a

	Effect	Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.984	1542.380 ^b	3.000	77.000	.000
	Wilks' Lambda	.016	1542.380 ^b	3.000	77.000	.000
	Hotelling's Trace	60.093	1542.380 ^b	3.000	77.000	.000
	Roy's Largest Root	60.093	1542.380 ^b	3.000	77.000	.000
	Pillai's Trace	.076	1.033	6.000	156.000	.406
Field	Wilks' Lambda	.925	1.027 ^b	6.000	154.000	.410
	Hotelling's Trace	.081	1.021	6.000	152.000	.414
	Roy's Largest Root	.064	1.667 ^c	3.000	78.000	.181

A close look reveals a P value (Sig.) of .410 which is greater than .05. This sheds light on the conclusion that no significant difference could be observed among the three groups in the use of each reading strategy subscale. That is, participants' use of each strategy subscale--global, problem-solving, and support-- was not dependent on their academic fields of study.

The results of the think-aloud procedure also shows that power engineering, physics, and communication students were more inclined towards using problem-solving (1, 2) than global or support strategies (3, 4). Accordingly, the three groups acted similarly in terms of strategic behavior. Some difference, however, was observed, related to the variety and frequency of each strategy.

Despite a trivial difference in the use of reading strategies across the three disciplines, findings of the two procedures altogether revealed that reading

strategy use was not a function of field of study. Unlike Harish's (2014) study but consistent with Saadinam's (2004) report, the present study revealed that there was no relationship between field of study and reading strategy use of Iranian M.A. students of power engineering, physics, and communication. The results of this study are also in line with those of Park (2010). In a study focusing on the reading strategy use of three groups, i.e. engineering, science, and humanities students, Park observed that the participants' academic field of study isn't related to their use of each strategy subscale.

By and large, the findings of this study do not provide support for a disciplinary pattern of reading strategy subscales, reported by researches in other contexts (e.g., Harish, 2014; Lonka, & Lindblom-Ylänne, 1996; Mochizuki, 1999; Oxford & Nyikos, 1989; Peacock, 2001). This contrastive result might be attributed to the cultural difference and the academic level of the participants (Oxford & Nyikos, 1989). That is, the slightly different use of reading strategies by students from different disciplines may be related to the cultural difference of Iranian students and the participants in the above mentioned studies, and the fact that our participants were studying at the post-graduate level, while the students in the above studies had been graduates. This contradictory finding could also be related to the similarity of the materials they were involved with. The nature of the task at hand, which in this case was a general reading passage, along with the language learning goal of the learner, as Oxford and Nyikos (1989) note, plays a significant role in the selection of language learning strategies. In other words, the reason participants from different fields of study had a slightly different strategic behavior is mainly because their strategy use was related to a similar task, i.e., a general reading passage. That is to say, as long as the task is the same, we expected the strategies to be similar too. As a matter of fact, the extent to which the

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individual student or situation is focused can change the interpretation. While some believe that individual difference leads to different strategy choice (Ehrman & Oxford, 1995; Oxford & Nyikos, 1989), others argue that the situation and its demands determine to a large extent what strategies to adopt (Eley, 1992; O'Malley & Chamot, 1990).

5. Conclusion and Implications

The major impetus to conduct this study came from the notion that strategic behavior is a requirement for effective reading comprehension (Nyikos & Oxford, 1993; Paris & Jacobs, 1984). Sheorey and Mokhtari (2001) argue that an awareness of reading strategies and comprehension monitoring is an important characteristic of good readers. Sheorey and Mokhtari note that to comprehend a text, readers need to use their metacognitive knowledge about reading and “invoke conscious and deliberate strategies” (p. 433). In other words, consciousness leads to utilization and orchestration of strategies. In this regard, Zhang (cited in Griffiths, 2008) points out that if strategies are considered as learners' conscious efforts towards language improvement or comprehension, reading should be addressed with respect to L2 readers' metacognitive knowledge; also, their reading processes must be conceptualized so that the effective reading strategies can be determined and imparted to less successful readers. Accordingly, to the extent that wider and more appropriate sets of strategies lead to more effective reading comprehension, an understanding of the variables related to strategy use paves the way for better reading comprehension instruction.

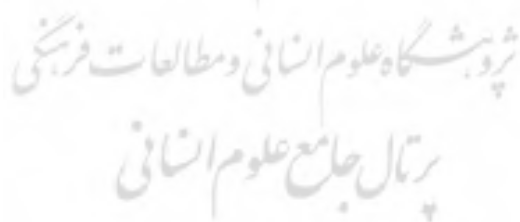
The results of the present study imply that power engineering, physics, and communication students were more inclined towards using problem-solving than global or support strategies, as problem-solving, cognitive strategies, bring

about effective language learning (Oxford & Ehrman, 1995). Furthermore, participants' use of reading strategies was not related to their disciplines.

The results of this mixed-methods study did not provide support for a disciplinary pattern of strategy choice, due to its limited number of participants. More studies are needed to investigate larger numbers of students from a wider variety of majors. Studies focusing on field-specific strategies may equip EAP classes with specialized courses of general English. As a result, unsuccessful EAP learners who deal extensively with English materials can get to know some effective reading strategies peculiar to their field of study.

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References

- Anderson, J. R. (1983). *The architecture of cognition*. Cambridge, Mass: Harvard University Press.
- Anderson, J. R. (1985). *Cognitive psychology and its applications*. New York: Freeman.
- Anderson, N. (1991). Individual differences in strategy use in second language reading and testing. *Modern Language Journal*, 75, 460–472.
- Ausubel, D. (1968). *Educational psychology: A cognitive view*. New York: Holt, Rinehart & Winston.
- Block, E. (1986). The comprehension strategies of second language readers. *TESOL Quarterly*, 20, 463–494. doi:10.2307/3586295
- Brown, H. D. (2007). *Principles of language learning and teaching*. White Plains, New York: Pearson Education.
- Carrell, P. L. (1985). Facilitating ESL reading by teaching text structure. *TESOL Quarterly*, 19, 727–752.
- Carrell, P. L. (1998). Can reading strategies be successfully taught? *Australian Review of Applied Linguistics*, 21, 1–20.
- Carter, R., & Nunan, D. (2001). *The Cambridge guide to teaching English to speakers of other languages*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511667206
- Chomsky, N. (1964). Current Issues in Linguistic Theory. In J. A. Fodor & J. J. Katz (Eds.), *The structure of language: Readings in the philosophy of language* (pp. 50–118). Englewood Cliffs: Prentice Hall.
- Cohen, A. D. (1990). *Language learning: Insight for learners, teachers, and researchers*. New York: Newbury House.
- Cohen, A. D. (1998). *Strategies in learning and using a second language*. New York: Longman.

- Cotterall, S. (2008). Autonomy and good language learners. In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 110–120). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511497667
- 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, 67–89.
- Eley, M. G. (1992). Differential adoption of study approaches within individual students. *Higher Education*, 23, 231–254. doi:10.1007/BF00145015
- Flavell, J. H. (1971). First discussant's comments: What is memory development the development of? *Human Development*, 14, 272–278.
- Grabe, W. (1991). Current developments in second language reading research. *TESOL Quarterly*, 25, 375–406. doi:10.2307/3586977
- Grabe, W., & Stoller, F. (2002). *Teaching and researching reading*. Harlow, UK: Longman.
- Green, J. M., & Oxford, R. L. (1995). A closer look at learning strategies, L2 proficiency, and gender. *TESOL Quarterly*, 29, 261–297.
- Griffiths, C. (2008). Strategies and good language learners. In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 83–98). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511497667
- 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.
- Harish, S. (2014). Social strategy use and language learning contexts: A case study of Malayalee undergraduate students in India. *System*, 43, 64–73.

Reading Strategy Use and Field of...

- Kavita, G., Sleezer, C., & Russ-Eft, D. (2007). *A practical guide to needs assessment*. San Francisco: Pfeiffer.
- Ku, P. Y. N. (1997). *Predictors of strategy choice by EFL students in Taiwan*. Paper presented at RELC Seminar, Singapore.
- Larsen-Freeman, D. (2001). Individual cognitive/affective learner contributions and differential success in second language acquisition. In P. Breen (ed.), *Learner contributions to language learning* (pp. 12–24). Harlow, UK: Pearson Education Ltd.
- Lee, K. R., & Oxford, R. L. (2008). Understanding EFL learners' strategy use and strategy awareness. *Asian EFL Journal*, 10, 7- 32.
- Lonka, K., & Lindblom-Ylänne, S. (1996). Epistemologies, conceptions of learning, and study practices in medicine and psychology. *Higher Education*, 31, 5–24. doi:10.1007/BF00129105
- Macaro, E. (2006). Strategies for language learning and for language use: Revising the theoretical framework. *Modern Language Journal*, 90, 320–337. doi:10.1111/j.1540-4781.2006.00425.x
- Mochizuki, A. (1999). Language learning strategies used by Japanese university students. *RELC Journal*, 30, 101–113. doi:10.1177/003368829903000206
- Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education*, 25, 2–10.
- Mullins, P. (1992). Successful English language learning strategies of students enrolled in the Faculty of Arts, Chulalongkorn University, Bangkok, Thailand. Unpublished doctoral dissertation, United States International University, San Diego, CA.
- Nunan, D. (1988). *The learner-centered curriculum*. Cambridge: Cambridge University Press.
- 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. (2011). *Teaching and researching language learning strategies*. Harlow, UK: Pearson Education.
- Oxford, R. L., & Burry-Stock, J. A. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the Strategy Inventory for Language Learning (SILL). *System, 23*, 1–23.
- Oxford, R. L., & Nyikos, M. (1989). Variables affecting choice of language learning strategies by university students. *The Modern Language Journal, 73*, 291–300.
- Oxford, R. L., & Ehrman, M. E. (1995). Adults' language learning strategies in an intensive foreign language program in the United States. *System, 23*, 359–386. doi:10.1016/0346251X(95)00023-D
- 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.
- Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary Educational Psychology, 8*, 239–316.
- Paris, S. G., & Jacobs, J. E. (1984). The benefits of informed instruction for children's reading awareness and comprehension skills. *Child Development, 55*, 2083–2093.
- Park, Y. (2010). *Korean EFL college students' reading strategy use to comprehend authentic expository/technical texts in English* (Unpublished doctoral dissertation). University of Kansas.

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- Peacock, M. (2001). Language learning strategies and EAP proficiency: Teacher views, student views, and test results. In J. Flowerdew & M. Peacock (Eds.), *Research perspectives on English for academic purposes* (pp. 268–285). Cambridge: Cambridge University Press.
- Peacock, M., & Ho, B. (2003). Student language learning strategies across eight disciplines. *International Journal of Applied Linguistics*, 3, 179–200. doi:10.1111/1473-4192.00043
- Rubin, J. (2008). Reflections. In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 10–15). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511497667
- Saadnam, R. (2004). The relationship between learner variables and reading strategy use of Iranian EFL learners (Unpublished master's thesis). Az-Zahra University, Tehran, Iran.
- Sheorey, R., & Mokhtari, K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. *System*, 29, 431–449. doi:10.1016/S0346-251X(01)00039-2
- Tudor, I. (1996). *Learner-centeredness as language education*. Cambridge: Cambridge University Press.
- Wenden, A. L., & Rubin, J. (1987). *Learner strategies in language learning*. Cambridge: 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 در حین 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."
 ج. معمولا یعنی "معمولا چنین کاری می کنم (تقریبا ۵۰٪ اوقات)."
 د. اغلب 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 فردی

نام و نام خانوادگی: رشته دانشگاهی: سن:

عبارات

۱. هنگام خواندن هدفی خاص را دنبال می کنم.
 الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۲. هنگام خواندن یادداشت برمی دارم تا آنچه را می خوانم بهتر بفهمم.
 الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۳. از اطلاعات عمومی کمک می گیرم تا متن را بهتر بفهمم.
 الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۴. قبل از خواندن، یک طرح کلی از متن در ذهنم ترسیم می کنم تا بتوانم محتویات متن را پیش بینی کنم.
 الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۵. وقتی که متن دشوار می شود، برای فهم بهتر آن را بلند می خوانم.
 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 ه. همیشه
۷. 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

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۸. متن را ابتدا با توجه به خصوصیتی همچون طول و ساختار مرور می‌کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۹. وقتی که حواسم پرت می‌شود، سعی می‌کنم دوباره روی متن تمرکز کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۰. زیر نکات مهم خط می‌کشم تا آنها را بخاطر بسپارم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۱. سرعت خواندنم را با توجه به آنچه می‌خوانم تغییر می‌دهم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۲. هنگام خواندن، تصمیم می‌گیرم چه چیزی را بخوانم و چه چیزی را نادیده بگیرم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۳. هنگام خواندن، از کتابهای مرجع همچون فرهنگ لغت استفاده می‌کنم تا به فهم بهتر متن کمک کند.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۴. وقتی که متن دشوار می‌شود، به آنچه می‌خوانم توجه بیشتری می‌کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۵. از جداول، اشکال و عکسهای موجود در متن برای فهم بیشتر کمک می‌گیرم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۶. هر از گاهی خواندن را متوقف می‌کنم و به آنچه می‌خوانم فکر می‌کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۷. از سرنخ‌های موجود در متن استفاده می‌کنم تا آنچه را می‌خوانم بهتر درک کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۸. مطالب ذکر شده در متن را به زبان خودم بیان می‌کنم تا بهتر آنها را درک کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۱۹. سعی می‌کنم مطالب را مجسم کنم تا آنچه را می‌خوانم بهتر به خاطر بسپارم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۲۰. از ویژگیهای چاپی متن همچون پررنگ بودن و حروف کج برای یافتن نکات کلیدی استفاده می‌کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۲۱. اطلاعات ارائه شده در متن را منتقدانه تحلیل و ارزیابی می‌کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۲۲. سعی می‌کنم 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. همیشه
۲۳. وقتی که در متن با مطالب جدید مواجه می‌شوم میزان درکم را بررسی می‌کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۲۴. هنگام خواندن، سعی می‌کنم مضمون متن را حدس بزنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه

۲۵. وقتی که متن دشوار می شود، آنرا دوباره می خوانم تا درکم بیشتر شود.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
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. همیشه
۲۷. درست یا اشتباه بودن حدسهایم در مورد متن را بررسی می کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۲۸. هنگام خواندن، معنای کلمات و عبارات ناآشنا را حدس می زنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
۲۹. هنگام خواندن، متن انگلیسی را به زبان مادریم ترجمه می کنم.
الف. هرگز ب. بندرت ج. معمولا د. اغلب ه. همیشه
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. همیشه

