

Metacognitive Strategies and Iranian EFL learners

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This paper was an attempt to investigate Iranian EFL learners' metacognitive strategy choice. To achieve this, two research questions were formulated. The first one was to see whether there is any significant difference between the participants' language proficiency level and their metacognitive strategy choice in doing four reading tasks (scanning, true-false, outlining, and sentence-completion). And the second question concerned the relationship between the participants' metacognitive strategy choice and their performances on the four reading tasks studied in this project. To this end, 130 female and male university students majoring in English at various levels took the sample version of the IELTS General Training Reading Module, the structure and written section of a TOEFL test, and the metacognitive strategy questionnaire (MSQ). The statistical analyses of the data demonstrated that (a) there was statistically significant difference among the participants of various proficiency levels in their choice of metacognitive strategies due to the impact of language proficiency level, (b) there was a significant positive relationship between the participants' performances on four reading tasks and their metacognitive strategy choice, except for the relationship between scanning task and evaluating strategies. Implications of the study are discussed.

Keywords: Proficiency Levels; EFL Learners; Reading Tasks; Metacognitive Strategies

1. Introduction

English as a foreign language has been taught in Iran for several decades, many aspects of it have been studied, including phonology and phonetics (Salmani Nodoushan, 2009g, 2010a, Salmani Nodoushan & Birjandi, 2005), writing (Birjandi, Alavi & Salmani Nodoushan, 2004; Salmani Nodoushan, 2005, 2007b, 2007c, 2007d, 2009f, 2010c), Reading (Salmani Nodoushan, 2003b, 2007h, 2007g, 2010d), Teaching (Salmani Nodoushan, 2006d, 2006e, 2008a, 2008b, 2008f, 2008g, 2009a, 2009d), Testing (Salmani Nodoushan, 1992, 1998, 2006b, 2008e, 2009b), Politeness (Salmani Nodoushan, 2003a, 2006a, 2006c, 2007a, 2007f, 2008c). During this period, a lot of studies have been conducted to investigate the Iranian EFL learners' language learning strategy use in relation to other variables such as age, gender, proficiency, and language skills (Ahmadizadeh, 2001; 2003; Al Shalabi & Salmani Nodoushan, 2009; Marefat & Ahmadi Shirazi, 2003; Paktint, 2005; Nemati, Salmani Nodoushan & Ashrafzadeh, 2010; Salmani Nodoushan, 2007e, 2008d, 2009e, 2010b). Among various practical issues, which have not been received much attention in Iran, the learners' metacognitive strategy choice demands a closer examination. The present study addresses the issue of metacognitive strategies in Iranian EFL context.

2. Background

One factor that has not received much attention in Iran is Metacognition. Livingston (1997, p.1) refers to the term 'Metacognition', which was first used by Flavell (1976), as "higher order thinking that involves active control over the thinking processes involved in learning". Oxford (1990) believes, "Metacognitive strategies help learners manage: (1) themselves as learners, (2) the general learning process, and (3) specific learning tasks" (cited in Carter & Nunan, 2001, p.197). According to Schraw and Dennison (1994), individuals with high level of metacognitive strategies seem "to excel in planning, managing information, monitoring, debugging, and evaluating" (cited in Shia, Howard, & McGee, 2005, p.2). In a study, Santana (2003) found, "The single greatest predictor of language learning success among my students is the use of

metacognitive strategies” (p.3). Other research findings also show “Metacognition is a strong predictor of academic success and problem-solving ability (Dunlosky and Thiede, 1998; Theide, Anderson, & Therriault, 2003)” (cited in Coutinho, 2006, p.162). Ahmadzadeh (2001) found a positive strong correlation between Iranian EFL learners’ metacognitive strategy use and their language proficiency level.

According to Lee (2003, p.27), “The relationship between the two variables (strategy use and proficiency level) is linear”. Lee (2003) reports the results of some recent studies in both EFL (Chamot and Kupper, 1989) and ESL (Oxford and Nyikos, 1989) learning that “frequency of strategy use and range increased as students became more successful or proficient learners” (p.27). Phillips (1991), however, found, “No consistent differences between the strategy use of high-proficiency and low-proficiency students and thus, suggested that the relationship between proficiency and strategy use was curvilinear”(cited in Lee, 2003, p.27).

In another study, Paktinat (2005) found that there was strong relationship between the subjects' proficiency level and strategy used for five categories (Memory, Cognitive, Compensation, Metacognitive, and Affective) out of six. The findings of O'Malley, Chamot, Stewner-Manzanares, Kupper & Russo's 1985, 1985a studies indicated that “higher level students reported greater use of metacognitive strategies (that is strategies used by students to manage their own learning), leading the researchers to conclude that the more successful students are probably able to exercise greater metacognitive control over their learning” (cited in Griffiths, 2004, p.12).

According to Chamot (2004), more and less proficient language learners are different “in the number and range of strategy use, in how the strategies are applied to the task, and in the appropriateness of the strategies for the task” (p.18). The relationship between metacognitive strategy use and the learners’ language proficiency level has also been emphasized by Bransford, Brown, and Cocking (1999) who claim, “Research has shown that effective learners have superior metacognitive skills; compared with average learners, they are more aware of their strengths and weaknesses and are therefore better able to improve their own learning skills” (Cited in Vovides, 2003, p.463).

3. METHOD

3.1 Participants

The subjects of this study were 130 male and female university students majoring in English at various levels at Islamic Azad University, Takestan Branch. They were all adult learners of English, ranging in age from 19 to 45 years. They were 104 female (80%) and 26 male (20%) university students with diverse social classes. The L1 of the subjects is Persian.

3.2 Instruments

Three instruments were used to collect the necessary data in the present study: (1) An IELTS sample reading test, (2) the structure and written expression section of a TOEFL test, and (3) a self-reporting Metacognitive Strategy Questionnaire (MSQ).

The Structure and Written section of a TOEFL test (2003) was used to measure the participants’ ability to recognize language that is appropriate for standard written English. The Structure section contains 15 items and the Written Expression part comprises 25 items.

The sample version of the IELTS General Training Reading Module (UCLES, 2000) was used in order to measure the participants’ reading ability. This test consists of 3 sections, 40 items that takes 60 minutes to complete. Three sections of this Module contain 4 reading tasks of (1) scanning, (2) true-false, (3) outlining, and (4) sentence completion. Section 1 of the Module contains 7 scanning and 6 true-false questions. In the second section, there are 7 true-false and 6

outlining questions. And finally, the last section contains 6 outlining and 8 sentence completion questions.

The instrument for collecting data on metacognitive strategy use was a self-reporting questionnaire derived from the Strategy Inventory for Language Learning (SILL), version 7.0, which has been developed for students of English as a second or foreign language by [Oxford \(1990\)](#). It requires students to answer 40 questions on their metacognitive strategy use on a five-point Likert scale ranging from “never or almost never true” to “always or almost always true”. This questionnaire (MSQ) included items evaluating only the metacognitive strategies used by the learners, including 40 items: 6 items related to ‘centering your learning’ strategies; 22 items concerned with ‘arranging your learning’ strategies, and 12 with ‘evaluating your learning’ strategies.

3.3 Procedures

In order to collect the necessary data, the three instruments were administered to the participants in one administration session. In addition, to avoid any misunderstanding, the subjects were instructed how to perform the reading Module, the TOEFL test, and MSQ.

A traditional scoring scheme was employed in order to measure the participants’ scores on the reading Module and the TOEFL test. A score of one was assigned to the correct response and nil to the wrong one. No penalty for wrong answer was imposed. But the scoring scheme for Metacognitive Strategy Questionnaire (MSQ) was different. Each item was assigned a score ranging from 1 to 5. Therefore, the final score was calculated by adding up the points given to each item of the questionnaire, ranging between 40 and 200.

Moreover, after measuring the participants’ scores in IELTS and TOEFL tests, their proficiency scores were computed by adding up each participant’s scores in IELTS and TOEFL tests. It seems necessary to mention that in this study each participant’s score on IELTS Reading Module has been used twice: (1) as an independent score of their Reading Module, and (2) in combination with their TOEFL score for measuring their language proficiency scores. And finally, the raw scores of each participant in TOEFL, IELTS, MSQ, and their Proficiency scores were standard scores so as to make comparison possible.

In order to classify the participants into 3 groups, the mean and the standard deviation of the participants’ proficiency scores were used as the criteria. Subjects who had scored higher than ‘mean- plus –one half’ of standard deviation were assigned to the high group (30 people – 23.1%). Through the same procedure, subjects who stood within the ‘mean- plus –one half’ of standard deviation and the ‘mean-minus-one half’ of standard deviation range were assigned to mid group (59 people – 45.4%). Finally, the subjects who had scored below the ‘mean- minus-one half’ of standard deviation range were assigned to the low group (41 people – 31.5 %).

4. Results and Discussion

In order to see if there is any relationship between the type of reading tasks (as measured by the IELTS reading module) and Iranian EFL learners’ choice of metacognitive strategy (as measured by the MSQ), a Pearson product-moment correlation coefficient was performed. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity.

The correlation analysis of the participants’ performances on different reading tasks and metacognitive strategy questionnaire indicates the following relationships:

- There is a positive correlation between all variables, high scores on X (scanning, true-false, outlining, and sentence-completion tasks) associated with high scores on Y (centering, arranging, and evaluating strategies);

- The strength of relationship between metacognitive strategies i.e., centering, arranging, and evaluating and scanning task appears to be low (as shown in Table 6);
- The correlation coefficient of metacognitive strategies with other reading tasks i.e., true-false, outlining, and sentence-completion is moderate.

To get an idea of how much variance each pair of variables shared, the coefficient of determination was calculated by squaring the r-value and then converting it to 'percentage of variance' by multiplying by 100 (as shown in Table 1).

Table 1
Coefficient of Determination

Reading Task	Centering	Arranging	Evaluating
Scanning	5.06	2.34	3.53
True-False	12.39	6.81	9.85
Outlining	15.92	13.15	16.24
Sentence-completion	12.32	5.80	9.79

According to Table 1, the correlations, which exist between scanning task and each type of metacognitive strategies (i.e., centering, arranging, and evaluating) show the lowest shared variances: for example, two variables of scanning task and centering strategies that correlate $r = .225$, only share 5.06 percent of their variance. There is not much overlap between these two variables. In the same way, there are highest shared variances between outlining task and each type of metacognitive strategies: for example, a correlation of $r = .403$ between outlining and evaluating strategies means 16.24 percent shared variance. In other word, outlining task helps to explain 16.24 percent of the variance in participants' scores on the evaluating strategy scale.

The descriptive analysis of the participants' performances on metacognitive strategy questionnaire revealed that high group participants outperformed their counterparts in mid and low groups in terms of their overall metacognitive strategy performance. Further analysis of the data revealed that participants of different levels of language proficiency have used centering strategies more frequently than the other two types of metacognitive strategies- arranging and evaluating strategies.

The results of a One-Way ANOVA test indicated that the participants were significantly different in terms of their metacognitive strategy choice. In other words, the comparison of participants' performance of the same metacognitive strategy type across different levels of language proficiency signified a meaningful difference between any given two proficiency levels. However, the Post Hoc Scheffe test results showed that there were two exceptions: the low versus mid group participants' performance of the arranging and evaluating strategies did not differ significantly from each other (See Table 2).

Table 2
One-Way ANOVA for Metacognitive Strategies across proficiency Levels

Meta. Strategy		Sum of Squares	df	Mean Square	F	Sig.
Centering	Between Groups	3899.751	2	1949.875	21.963	.000
	Within Groups	11275.035	127	88.780		
	Total	15174.786	129			
Arranging	Between Groups	2350.820	2	1175.410	11.380	.000
	Within Groups	13118.023	127	103.292		
	Total	15468.843	129			
Evaluating	Between Groups	3784.964	2	1892.482	15.077	.000
	Within Groups	15941.126	127	125.521		
	Total	19726.090	129			

Table 2 shows that the participants of different language proficiency levels are significantly different from each other in terms of their centering strategy use [$F(2,127) = 21.96, p = .000$]. The results of ANOVA test (Table 2) also indicate that there is statistically significant difference among the different language proficiency groups in terms of their performance on arranging strategies [$F(2,127) = 11.380, p = .000$]. According to Table 2, the difference in the participants' performance on their evaluating strategy use was statistically significant for the three language proficiency groups [$F(2,127) = 15.077, p = .000$]. In addition, the magnitude of the differences between means, the eta squared, was calculated to indicate the effect size or the strength of association between the two variables. Based on the guidelines proposed by Cohen (1988) (.01= small effect, .06= moderate effect, and .14= large effect), the results of this analysis showed a very large effect size between each pair of variables (eta squared = .25 for centering, .15 for arranging, and .19 for evaluating strategies).

The relationship between the four reading tasks and the participants' metacognitive strategy choice indicated a positive correlation between each pair of variables. According to the correlation results, a small correlation was found between each pair of the following variables:

- between centering strategies and scanning task;
- between arranging strategies and all reading tasks, except for outlining task;
- between evaluating strategies and scanning task.

And the following pairs of variables were correlated with each other moderately:

- centering strategies with true-false, outlining, and sentence-completion tasks;
- arranging strategies with outlining task;
- evaluating strategies with true-false, outlining, and sentence-completion tasks.

Finally, all the correlations were significant either at .01 or .05 level of significance, except for the correlation between arranging strategies and scanning task.

5. Conclusion

The findings of this study can convince the language teachers to pay more attention to the metacognitive strategies as a part of learning strategies. Language teachers should become more aware of their importance in the second or foreign language learning and should help their students identify their current language learning strategies, especially metacognitive strategies.

Language teachers and educational authorities can also provide students with various opportunities to utilize metacognitive strategies in the language learning activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task. Moreover, teachers should implement learning strategy instruction to help less successful students learn how to use metacognitive strategies to plan, monitor, and evaluate themselves throughout their learning efforts.

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