

Meta-Cognitive Strategy Use in Reading Comprehension among Iranian EFL Learners of Varying Levels of Proficiency

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This study explored the use of meta-cognitive strategies (MCS) in reading comprehension among Iranian EFL learners with varying levels of proficiency (i.e. high proficient vs. low proficient). Furthermore, there was an attempt to investigate the impact of motivation on language learners' MCS use. The proposed hypotheses predicted: 1) there is no significant difference between the high proficient EFL learners' use of MCS compared to their low proficient peers, and 2) there is no relationship between the two groups' MCS use and their motivation. One hundred participants, aged 16-24, were selected from the intermediate and advanced EFL learners in Jihad Daneshgahi Institute of Kermanshah. The data was collected through: a) a modified version of the FCE reading paper, b) a modified version of the PET reading paper, c) Taraban's (2006) MCS Questionnaire, and d) an adapted form of Gardner's (1985) motivation questionnaire, and was submitted to a series of independent samples t-test and co-relational analysis. The results indicated: 1) a significant difference between the two groups in terms of the use of meta-cognitive strategies, favoring the highly proficient readers, and 2) a significant relationship between the use of meta-cognitive strategies and motivation of the participants.

Keywords: High Proficient Readers, Low Proficient Readers, Meta-Cognitive Strategies, Motivation, Reading Comprehension

Reading is a fundamental skill for anyone learning English as a foreign language. Learners use reading as a tool for learning English and gathering information in different fields. Strategies are among the variety of skills necessary for reading comprehension. Students use a variety of strategies to assist them with the acquisition, storage, and retrieval of information.

Since the early 70s, research in this area has, for the most part, focused on the best way to teach English learners to use a variety of strategies in order to read better. Rigney (1978) states that reading strategies are of interest for what they reveal about the way readers manage their interaction with written texts and how these strategies are related to the text comprehension. Reading strategies indicate how readers conceive of a task, how they make sense of what they read and what they do when reading comprehension is difficult (Singhal, 2001). Therefore, an understanding of the strategies used by EFL learners seems to be necessary as far as effective reading comprehension instruction is concerned. As Wenden (1987:55) reminds us, there is an old proverb which states: "Give a man a fish and he eats for a day. Teach him how to fish and he eats for a lifetime". Applied to language teaching and learning field, this proverb might be interpreted to mean that if students are provided with answers, the immediate problem is solved. But, if they are taught the strategies to work out the answers for themselves, they are empowered to manage their own learning.

Reading strategies are categorized into various types, a favorite account which belongs to Oxford (1990) and O'Malley and Chamot (1990). O'Malley and Chamot listed learning strategies in three categories: meta-cognitive, cognitive, and social/affective. Although the number of categories differs from that of Oxford's, their meta-cognitive strategies are essentially quite similar to Oxford's, since they refer to the planning of language study,

preparation, monitoring of learning tasks, and evaluating student performance. In support of this, Oxford (1996) defined meta-cognitive strategies, the main focus in this study, as dealing with planning, monitoring, and evaluation of language learning activities.

According to Chamot (1999), successful readers are required both to know about their cognition, called meta-cognition, and to be able to monitor their comprehension. Meta-cognition is conscious, and generally involves at least two related concepts; first, knowledge about learning, and second, an ability to employ cognitive strategies intelligently. Meta-cognition, which is central to effective learning, is the process that underlies the efficient use of strategies and the essence of intelligent activity' (Wenden, 1987). However, if we are going to take a broader view of meta-cognition, it must involve more than knowledge of one's cognitive strategies. What is sometimes forgotten is that it can also include affective aspects of learning; a conscious knowledge of the feeling that the learning problem evokes. It must, therefore, include knowledge of the self. Therefore, learners should be aware of their meta-cognition, such as knowing their goal and using a variety of different strategies for different texts.

MCSs are found to be extremely valuable in English as a Foreign Language (EFL) context. Different kinds of thinking that comprise meta-cognition (for example planning, recognizing the task demands, and choosing the strategy for the task) are associated with strategies used in reading, an area in which all students, including high proficient and low proficient students, are expected to become skilled.

Researchers have taken the position that there is a relationship between the use of meta-cognitive strategies and proficiency level (Monos, 2003; Mc Namara and O'Reilly, 2007). A high proficient and a low proficient learner might differ in the range and application of MCSs, which in turn, might affect the academic success of the learners (Oxford, 1991). Oxford (1996) investigated this relationship. In this study, the participants were more than 1,000 Korean students (617 male and 493 female). The data was collected from one middle school, three high schools and

two universities. Version 7.0 of the SILL (Strategy Inventory for Language Learning) (Oxford, 1990) was chosen for this study but was extended in certain new ways. A Background Information Questionnaire was adapted from Oxford's (1991) Background Questionnaire. Students who rated their proficiency as excellent and those who considered English as very important were more MCS users than those who didn't.

In a similar vein, Ju-Chen (2001) carried out a study to investigate the Spanish speaking students in ESL program in two reading tasks: taking reading comprehension test and reading academic texts. Two English as a foreign language students who passed the high-intermediate level of General English Proficiency Test participated in the study. Both of the participants were at the age of 30 and were female English learners. An open-ended questionnaire, the English Learning Questionnaire, was adopted for this study. Ju-Chen found that the learner who was more proficient than the other utilized MCSs more effectively and appropriately.

Similarly, Monos (2003) conducted a study to examine the MCS use by high and low proficient learners. The participants were 86 Hungarian students of English as a foreign language. They were between 18-24 years of age. They were asked to describe their overall proficiency and reading ability in English on a 1-6 scale. Data on students' awareness of the use of MCS while reading academic material was collected through The Survey of Reading Strategies of Hungarian College Students. Monos' findings, similar to the previous studies, confirmed that learners with high proficiency used more MCS.

A similar study was done by Qashoa (2006). The participants were 100 national students from four state secondary schools. All students were male and they ranged in age from 16 to 18 years. All the participants had been studying English for more than 8 years. As a measure for the language self-efficacy or students' perceptions of themselves, they were asked to rate themselves from 1 to 5 to indicate how proficient they were at English. A motivation questionnaire and a MCS questionnaire were used in this study. A semi-structured interview with 20 students was also

conducted to deepen the interpretation of the results. The results showed that among students, those who had positive motivational beliefs and were considered to be more motivated were also better MCS users.

However, some research findings reveal a different story regarding the relationship between MCS use and proficiency. Green and Oxford (1995) studied 213 students of English and found that high proficient learners used more MCSs than low proficient ones, but moderately proficient students used more strategies than either high or low proficient learners. Thus, there was a curvilinear pattern. In a study by Mullins (1992), 110 English majors in Thailand failed to reveal significant correlation between any of the three proficiency measures and MCS use although proficiency measures did correlate with certain strategy categories.

What is evident from some of the studies reported in the literature is that some important reader characteristics, e.g., age, language background, proficiency, motivation, etc., have not been taken into consideration in reporting the results. The evidence from the survey of the related literature suggests that most of the studies focus only on one variable at a time but it might turn out that the results differ especially in different contexts. Among these different factors, motivation is a complex, multifaceted construct (Gardner, 1985; Williams and Burden, 1997) that includes factors such as: the value students attach to a task; how much students expect to succeed; whether they believe they have what it takes to succeed; and what they perceive to be responsible for success or failure at a task (Chamot, 1999). These factors are equally important in sustaining self-regulated learning; that is, students' use of MCSs to control and regulate their learning (Pintrich, 1999). Thus, an awareness and understanding of students' motivation may provide valuable insights into the use of MCSs and its relation to the proficiency level.

In spite of the increasing popularity of the research in learning strategies since the mid 70's, the topic of learning strategies and especially meta-cognitive strategies is still a new research area in Iran. There have been few studies on the use of

learning strategies of individual Iranian students. Additionally, the relationship between levels of proficiency and MCS use with motivation as a moderator variable was not dealt with by Iranian researchers. As for the importance of reading comprehension among Iranian EFL learners, understanding the nature of MCS use seems warranted.

In line with the related theory and literature, the present study aimed at investigating the relationship between different levels of proficiency and MCS use. In other words, this study was an attempt to identify the possible differences between highly proficient (HP) and less proficient (LP) readers as far as the use of metacognitive strategies was concerned. The proposed hypothesis predicted no significant difference between the two groups in terms of the use of MCS use.

Method

Participants

The participants in this study were 100 EFL learners in Jihad Daneshgahi Institute in Kermanshah, Iran. The participants, who were within the age range of 16-24, included 80 females and 20 males. Out of the 100 participants, 50 students were considered as high proficient readers who had been studying English for 3 years, and the remaining 50 students were considered as the students with low proficiency in reading comprehension. They had been studying English for 2 years.

Instruments

For the purpose of data collection, the researcher used the reading comprehension sections of the First Certificate in English (FCE) and Preliminary English Test (PET) and a questionnaire including three sections: a) some demographic questions, b) Taraban's (2006) meta-cognitive Strategies Use Questionnaire, and c) a motivation questionnaire including some items about instrumental and integrative motivation (see Appendix). The

demographic section of the questionnaire consisted of some items asking questions about the participants' gender, age, and educational background, etc,....

As stated earlier, the participants belonged to the group of EFL learners who had similar experience receiving instruction in EFL. However, in order to have homogeneous groups, FCE was used to measure the English language reading proficiency of the post- intermediate students. A modified version of the reading comprehension test of FCE, which consisted of 7 reading comprehension passages followed by 10 relevant questions, was used. A modified version of the PET reading test including 14 questions was also used to measure the English language reading proficiency of the students who belonged to the pre-intermediate level.

The meta-cognitive reading strategy questionnaire composed of 22 questions about the meta-cognitive strategies the learners used while reading (e.g. determining the meaning of unknown words, visualizing the information, evaluating the text, re-reading the text, etc.). A scale of 1-5 was used to measure the students' use of meta-cognitive strategies. The numbers show the frequency of students' use of meta-cognitive strategies in reading: 1=never, 2=rarely, 3=sometimes, 4=often, and 5=always.

The motivation section composed of 8 items including 4 statements about integrative motivation and 4 statements about instrumental motivation. Similar to MCS section, a 1-5 scale was used to measure the students' language learning motivation. Based on the data elicited from the results of the tests and the questionnaire, the extreme scorers in terms of reading proficiency were excluded from the study.

Results

The present study was designed to investigate the use of meta-cognitive strategies in reading comprehension among EFL learners with varying levels of. The participants' motivation was also explored as a moderator variable due to its strong contribution to the use of MCSs (Goh & Kwah, 1997; Valle, 2003; Hoy, 2004;

Al-Ansary, 2005). The research questions were translated into the following null hypotheses: 1) there is no difference between the students' use of meta-cognitive strategies and their proficiency levels, and 2) there is no significant relationship between motivation and use of MCSs .

To investigate the first hypothesis, a t-test was used to determine whether the possible differences were statistically significant. The rationale for selecting the t-test for independent samples for comparison purposes was that the main assumptions regarding normal distribution and homogeneity of variances were clearly met. Table 1 shows the results related to the use of MCSs among the participants. The mean scores {HP=72.3, LP= 63.8} for the use of meta-cognitive strategies indicate superiority of highly proficient participants over the less proficient group. In other words, as illustrated in Table 1, the highly proficient learners scored significantly higher than less proficient learners { $t(98) = 5.82, P = 0.00$ }. Therefore, we can assume that we are safe in rejecting the first null hypothesis.

Table 1

Independent sample t-test: the two groups' use of MCS

	N	X	SD	df	T obs	P
HP	50	72.3	8.24	98	6.31	.000
LP	50	63.8	6.21	98		

df. = degree of freedom **P** < .05 **HP:** highly proficient **LP:**less proficient

As already mentioned, motivation as a strong affective factor as regards the use of MCSs, was also examined. The relevant hypothesis proposed no relationship between the students' MCS use and their motivation.

To get an insight into the degree of relationship between motivation and MCS use of the two highl vs. less proficient groups, Pearson's product-moment correlation coefficient was

computed. Interestingly, the results of the highly proficient participants correlated with the use of metacognitive strategies more strongly when compared to that of the other group. Table 2 illustrates the results. As shown in Table 2, the correlation estimate between proficiency and MCS use in HP group, $\{r(50) = 0.68, P = .001\}$, stands at a significantly stronger level as compared to that of IP group, $\{r(50) = .17, P = .18\}$.

Table 2

Correlations between the use of MCS and motivation: HP vs. LP

	N	r(MCS)	P
Mot(HP)	50	.68	0.01
Mot(LP)	50	.17	.18

Mot: Motivation **SD:** Standard Deviation **HP:** highly proficient
LP: less proficient

Discussion

The main purpose of this study was to explore the relationship between the use of meta-cognitive strategies and proficiency in reading comprehension among language learners with varying levels of proficiency. It was hypothesized that there is no relationship between the levels of proficiency and the students' use of MCSs.

The results showed significantly greater use of meta-cognitive strategies among high proficiency level students. These results seem to support the findings of several studies in both second and foreign language learning (Singhal, 2001; Monos, 2003; O'Reilli and Mcnamara, 2007; Oxford, 2006; etc.) proposing

that frequency and range of meta-cognitive strategy use increase as students become more proficient.

Although the methods to measure proficiency and the meta-cognitive strategy use are different, the result that there is a positive relationship between meta-cognitive strategy use and proficiency is the same. Therefore, the results of the present study are in line with the previous research findings demonstrating that proficient students show greater awareness and higher tendency to use meta-cognitive strategies than low proficient students. One possible explanation for such difference would be the differences between the high and low proficient students in terms of their awareness and knowledge of meta-cognition, as Wenden (1987) maintains. Meta-cognition can be, therefore, seen as central to effective learning. It is possible that meta-cognition is a process underlying the efficient use of strategies.

The findings of this study have pedagogical implications for instruction and curriculum development. First, learners of English as a foreign language should learn to recognize the meta-cognitive strategies they are using. So, effort should be put on raising their awareness of the potential benefits of employing these strategies. This is especially true in the Iranian context, given the fact that MCS instruction is a relatively new area. In this context, successful language learners may serve as informants for students experiencing less success in language learning regarding strategies, techniques, and study skills. Through monitoring each other, students can take an active part in not only learning but also teaching. Second, teachers should become more aware of the meta-cognitive strategies that their students are (and are not) using so that teachers can develop meta-cognitive strategies learners are using and be advised to select the most appropriate techniques for the instructional environment.

The results show that these MCS are not totally new to the respondents, despite the lack of emphasis on MCSs in most English curricular in Iran. The development of materials and training programs on MCSs should be based on the popularity of different MCSs among our respondents. Strategy training can start with the MCSs of 'Paying attention', 'Self-monitoring', and

'Finding out about language learning', which learners are more familiar with and use more frequently. After learners have gained the mastery over these strategies, strategy training can proceed with introducing to learners MCS such as 'Seeking practice opportunities' and 'Setting goals and objectives' which are less popular. Since 'Organizing' is the least popular among our respondents, effort should be put on raising their awareness of the potential benefits of employing this cognitively more demanding MCS. This is not only true in the Iranian context, but in other Asian contexts as well, given the fact that MCS instruction is a relatively new area in all Asian contexts.

The findings can be also explained as far as motivation is considered as a good predictor of the use of MCSs. It seems that participants' motivation played an important role possibly in determining the uses of learning strategies. This corroborates with the proposal that learners' beliefs about language learning and their future goals are highly related to their MCS use and their subsequent effort and performance (Goh & Kwah, 1997; Valle, 2003; Hoy, 2004; Al Ansari, 2005). This can be a call for the teachers to pay more attention to raise learners' level of motivation in order to bring about more MCS use. However, it should be reminded that even positive motivation may have different levels which seem to affect the use of metacognitive strategies differently. Therefore, further research is required to find out the correlation between motivation and MCS use.

Although the present study, to some extent, achieved the purpose of describing MCSs used by both HP and LP learners, and finding the relationship between MCS use and motivation, further research needs to be conducted exploring the reading strategies used by EFL students with different professions and educational backgrounds so as to obtain a full picture of strategy use in EFL students' reading comprehension.

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Appendices

Some sections of the modified FCE reading comprehension paper

PART 1:

For each paragraph choose the most suitable heading from the list which follows.

THE NEED FOR A GREEN WORLD

1. Government action is essential.
2. Wildlife suffers.

A

Where does pollution come from? For years, Nitrates and phosphates and God knows what other chemicals have been dumped into the Adriatic. As Italy economic miracle has worked its wonders, the industry of Po valley has had its affluent combine with rising temperatures in the sea to produce a thick alga. The result is economic disaster for tourist industry: 3,000 hotels, 26,000 villas and 800 restaurants take a lot of filling. One politician suggested the building of swimming pools.

B

Out of America's beaches, there is another problem: sixty percent of the rubbish washed up on the beach is plastic. To keep the floating rubbish from reaching New York, the US Army Corps of Engineers uses skimmers to lift debris from the water. One result of the plastic garbage is dead fish. A rare three-meter-long beaked whale was washed ashore on Long Island. After a post mortem, scientist concluded that the animal has starved to death, its stomach blocked by plastic carrier bags.

C

West Germany is ahead. The Greens are a real political threat there, so the government has been forced to deal with their issues. In German supermarkets, shoppers choose the green- friendly and the not-nasty. Fly sprays are exchanged for old-fashioned fly papers. A Green house-holder will have two dustbins, one for normal rubbish, and one for paper which is taken to be recycled. Glass goes into a special container down the road, and the used batteries are taken to special collecting-points.

**PART2:
EMERGENCY TEATMENT**

In which accident should you.....

- 3. not touch someone?
- 4. restrict the circulation of the blood ?

A.

Electrical burn

If possible, turn of the electric current, or remove the victim from the current. To do the latter, use something that can not conduct electricity, such as a dry pole, branch or rope, or with dry clothing. Don't touch him directly or with anything metallic or wet while he is still in contact with the live outlet.

B.

Snake bites

If someone has been bitten by a snake, he should not be put on his back, and movement of any sort should be prevented. A tourniquet should be applied between the bite and the heart, and tightened until the veins stand out. If the limb becomes blue, loosen the band a little. Medical help should be called for. In the meantime, raise the bitten limb to reduce circulation, and do not cut or suck the bite or rub anything into it.

PART 3:

Choose the answers that you think fit best according to the text.

I started to lose my hair when I was 16. It kept on falling out, and my confidence went. The other blokes had great mops of hair. It was the fashion in the seventies. By the time I was 21, it was so bad that when I saw this ad in the paper for a private hair clinic, I went along. I asked them how much hair they thought I would lose, and they say probably just a little at the corners, and they could fill it in some hair grafts. With this grafts, I had to have a local anaesthetic. It was so painful. They took bits of hair from the side and back, and replanted them into cuts made in the balding patch. The operation is very unpleasant, especially when anaesthetic needles are stuck into your scalp. But more hair fell down, and I needed more grafts. Over the next three years, I had more grafts, but it couldn't keep up with the hair loss. I had all these implants in front, and a bald patch behind. It looked worse than before and my life was falling apart.

5. He went to the hair clinic because
- A. it advertised.
 - B. his hair was falling out.
 - C. his friends had a lot of hair.
 - D. he wanted to be in fashion.

Some sections of the modified PET reading comprehension paper

Read the text and the questions below.

For each question mark the correct letter A, B, C, or D on your answer sheet.

Ainsley Harriott

I've always been a bit of an entertainer and played the funny man. I was a part-time comedian for years, so I learned how to stand in front of audiences. It made me sure of myself. I like being liked, and I love making everyone smile.

I've lived in London all my life, and have just moved to a larger house with my wife Clare and our two children, Jimmy and Madeleine. We spend a lot of time just singing and dancing around the house. I grew up with music because my dad is the pianist, Chester Harriott-who is still playing by the way. My working day is divided into television and writing cook books though takes most of my time. I spend about five days a fortnight working on the cooking programs I appear in. I eat all sorts of things at home but I only by quality food. When I am cooking I experiment with whatever in the fridge-its good practice with my TV series.

I am a football fan and enjoy going to matches, but I am a home-loving person really. I don't like going to the pub but we do go out to eat about twice a month. There is nothing better than a night at home playing with the children. I rarely go to bed before midnight. Late evening is when fresh thoughts on cooking usually come to me, so I often write or plan my programs then. When I eventually get to bed, I have no trouble sleeping!

1 What is the writer main purpose in writing the text?

- A. to describe how he lives
- B. to say what makes him laugh
- C. to talk about his cooking ideas
- D. to explain how he started in TV

2 What would a reader learn about Ainsley from the text?

- A. He is a very good musician.
- B. He likes to plan the family meals.
- C. He is nervous about performing on stage.
- D. He enjoys spending time with his family.

Read the text below and choose the correct word for each space.

For each question mark the correct letter A, B, C, or D on your answer sheet.

Deep Sleep

Deep sleep is important for everyone. The actual (3).....of sleep you need depends (4).....your age. A young child (5) sleep 10-12 hours, and a teenager about 9 hours. Adults differ a lot in their sleeping (6).....for most of them seven to eight hours a night is (7)....., but some sleep longer but others manage to sleep with only 4 hours.

- | | | | |
|------------|-------------|------------|------------|
| 3 A. size | B. number | C. amount | D. sum |
| 4 A. on | B. to | C. in | D. of |
| 5 A. could | B. ought to | C. must | D. should |
| 6 A. ways | B. habits | C. manners | D. actions |
| 7 A. few | B. well | C. less | D. enough |

Section 2:

Sample questions of the Meta-cognitive Reading Strategy Use Questionnaire

Following is a questionnaire with five possible answers. Please read each statement carefully and show how often you use these meta-cognitive strategies while reading

by circling one of the numbers from 1(never) to 5 (always).

No.	I use this strategy	Never	Rarely	Sometimes	Often	Always
1	As I am reading, I evaluate the text to determine whether it contributes to my knowledge/understanding of the subject.	1	2	3	4	5
2	After I have read a text, I anticipate how I will use the knowledge that I have gained from reading the text.	1	2	3	4	5
3	While I am reading, I reconsider and revise my background knowledge about the topic, based on the text content.	1	2	3	4	5
4	After I read the text, I consider other possible interpretations to determine whether I understood the text.	1	2	3	4	5
5	As I am reading, I distinguish between information that I already know and new information.	1	2	3	4	5

Section 3

Sample questions: Motivation

Following is a questionnaire measuring your motivation to learn English. Please show your opinion about each statement by circling one of the numbers from 1 (Strongly disagree) to 5 (Strongly agree).

Studying English can be important to me because.....

		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	I love English	5	4	3	2	1
2	I need to cope with internationalization.	5	4	3	2	1
3	I can learn about various opinions in the world.	5	4	3	2	1
4	I can search information on the Internet.	5	4	3	2	1
5	I'll need it for my future.	5	4	3	2	1