Investigation of the Relationship between Metacognitive Reading Strategies and Motivation: The Case of Iranian EFL Learners

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Abstract

This study was to investigate the use of metacognitive reading strategies, patterns of motivation as well as the relationship between motivation and L2 readers' metacognitive awareness and perceived use of strategies among Iranian EFL learners. A total number of 36 intermediate students from an English Institutes in Qazvin took part in this study. They were asked to fill in two questionnaires: (a) a questionnaire on motivation, which was developed by Vallerand et al. (1992), and (b) a questionnaire on Metacognitive awareness strategies in reading developed by Mokhtari & Reichard, (2002). The results of the study revealed that: 1) In the category of metacognitive reading strategies, problem solving was the most frequently used strategy and global and support was the least frequently used one. 2) There was no significant difference in terms of type of motivation among Iranian EFL learners 3) Positive relationship was found between both types of motivation and use of metacognitive reading strategies. This study suggested that readers' metacognitive awareness should be cultivated and strategy instruction should be integrated into the teaching of reading.

Key words: metacognitive reading strategies, patterns of motivation, Iranian EFL learners

Introduction

Metacognition or 'thinking about thinking' involves the awareness and regulation of thinking processes. Metacognitive strategies are those strategies which require students to think about their own thinking as they engage in academic tasks (Kuhn, 2000). Baird (2001, p.184) also suggest that "Metacognition refers to the knowledge, awareness and control of one's own learning. Metacognitive development can therefore be described as a development in one's metacognitive abilities, i.e., the move to greater knowledge, awareness and control of one's learning". Metacognition in reading has been defined as the awareness and monitoring processes which constitute the knowledge of the readers' cognition about reading and the self-control mechanisms they exercise when monitoring and regulating text comprehension (Mokhtari, & Reichard, 2002). It involves conscious thinking about the reading process and is implemented when learners start to manage the reading process by asking themselves various questions while they are reading or after they have accomplished the reading task. Good readers have been reported to monitor their reading, to make predictions and verify them, to reread and summarize a text, and to generate questions which may improve their understanding, often subconsciously (Phakiti, 2003a). What differentiates them from unskilled readers is their use of general world knowledge in drawing valid inferences from texts, comprehending words, and using comprehension monitoring and repair strategies (Pressley & Gaskins, 2006). These skills entail a rich knowledge of vocabulary, familiarity with the topic, or subconscious use of CSs and MCSs.

Motivation also plays a great role in learning a second and foreign language (Oxford, 1994).It is defined as the individual's attitudes, desires, and effort. In addition, Ryan and Deci (2000) define motivation as concerning energy, direction, and persistence. Motivation is classified as integrative which refers to a desire to learn the L2 in order to have contact with and perhaps to identify with members from the L2 community and instrumental which refers to a desire to learn the L2 to achieve some practical goal, such as job advancement or course credit. Academic motivation is also considered as a powerful factor for students in terms of doing their homework and making them more interested in learning (Artino & Stephens, 2009).This concept represents the difference of students' effort for doing their homework. Hence it is recognized as a significant factor in teaching and training

The present study aims at investigating whether there is any meaningful relationship between different kinds of motivation and Metacognitive Reading Strategies. In other words, the purpose is to find out whether students who are intrinsically or extrinsically motivated will choose specific kinds of Metacognitive Reading Strategies.

This study is to answer the following questions:
1. Which Metacognitive Reading Strategy (global, problem-solving, support) is the most commonly used strategy among Iranian EFL learners?
2. Are Iranian EFL learners intrinsically motivated or extrinsically motivated?
3. Is there any relationship between the type of motivation (intrinsic / extrinsic motivation) and the choice of Metacognitive Reading Strategies among Iranian EFL learners?

Review of the Related Literature

Metacognitive Reading Strategy

One aspect of language learning that might be greatly impacted by metacognition is receptive skills of reading and listening. During reading, metacognitive processing is expressed through strategies, which are "procedural, purposeful, effortful, willful, essential, and facilitative in nature" and "the reader must purposefully or intentionally or willfully invoke strategies" (Alexander & Jetton, 2000, p.295). Oxford (1990) listed metaconitive reading strategies as a set of six strategies within the broader context of reading strategies that could be referred to as sub strategies and defined them as behaviors of learners to plan, arrange, and assess their own learning. The scope of reading strategy research has recently expanded to emphasize learners' cognitive appraisal or their metacognitive knowledge. In these investigations, readers are asked to explicitly report their perceptions about themselves, their understanding of reading demands, their cognitive goals, their approach to the task, and their strategies.

To elicit learners' metacognitive knowledge about reading, various procedures have been used, most commonly diaries (Goh, 1997), interviews (Goh, 2002a), and questionnaires (Goh, 2002b; Vandergrift, 2002, 2005a; Zhang, 2001). Results of these studies have shown that language learners possess knowledge about the reading process, albeit to varying degrees and that this knowledge appears to be linked to reading abilities. Furthermore, research on the effects of metacognitive instruction has provided preliminary evidence that performance, confidence, and motivation can be enhanced through classroom instruction (Goh & Taib, 2006; Vandergrift, 2003b).

Phakiti (2003b) examined the relationship between 384 Thai learners' cognitive and metacognitive strategy use and their reading test performance through the use of a cognitive and metacognitive questionnaire, retrospective interviews and an EFL achievement test. The test takers completed the test first and immediately after the test completion, they answered the questionnaire on the degree of their strategy use during the test taking. Phakiti found that metacognitive strategies were statistically positively related to cognitive strategies and reading comprehension performance. Phakiti (2003b) also investigated the differences in the strategy use and reading performance among highly successful, moderately successful and unsuccessful learners by means of factorial multivariate analysis of variance (MANOVA) and found the significant differences among these learner groups. Strong evidence accounted that the highly successful learners indicated significantly higher use of metacognitive strategies than the moderately successful ones, who in turn indicated higher use of these strategies than the unsuccessful ones.

Plakans' (2009) study used an inductive analysis of think-aloud protocol data and interviews to uncover the reading strategies of 12 non-native English writers. Findings showed that higher scoring writers used more global strategies than lower scoring writers. These results suggested that reading played a role in the process and performance of integrated writing tasks, an important consideration when using such tasks for learning or assessment.

Sheorey and Mokhtari (2001) investigated differences in metacognitive and support strategy use in academic reading among both native and non-native English readers and they concluded that "skilled readers are more able to reflect on and monitor cognitive processes while reading" (p.445). In the same vein, Anderson (2002) found that second language readers most often use the Problem Solving Strategies (e.g. adjusting reading rate, rereading difficult texts and pausing to think about what one is reading).

Al Melhi (2000) has found that some differences do exist between skilled and less skilled readers in terms of their actual and reported reading strategies, their use of global reading strategies (such as underlining, guessing, reading twice and etc), their metacognitive awareness, their perception of a good reader, and their self-confidence as readers. Therefore, it seems that training in metacognitive language learning strategies help learners develop their reading skills and raise their language proficiency levels.

Cromley and Azevedo (2006) stress that, while reading, skilled readers orchestrate a large number of cognitive and metacognitive mental activities (i.e. comprehension strategies) such as summarizing, paraphrasing, generating questions and answering them, activating relevant background knowledge, and monitoring. On the other hand, ineffectual readers are unable to solve their reading problems as they lack the declarative, procedural, and conditional knowledge (Mokhtari & Reichard, 2002). They are also "less aware of effective strategies and of the counterproductive effects of poor strategies, and are less effective in their monitoring activities. during reading" (Çubukçu, 2009, p. 3).

The present study used the Metacognitive Awareness Reading Inventory (MARSI) to assess the extent to which language learners are aware of and can regulate the process of L2 reading comprehension. The design of this questionnaire is based on a theoretical model of metacognition, a construct that refers to thinking about one's thinking or the human ability to be conscious of one's mental processes.

Motivation

Motivation plays a determinant role of second/foreign language (L2) learning achievement. In the last thirty years, there had been considerable amount of research done that explores on the nature and role of motivation in the L2 learning process. For example, Guay, (2010) defines motivation as "the reasons underlying behavior" (p. 712). Broussard and Garrison (2004) broadly definemotivation as "the attribute that moves us to do or not to do something" (p. 106). The concept of motivation refers to the combination of beliefs, perceptions, values, interests, and actions that are all closely related. Therefore, motivation has to do with different approaches as cognitivebehaviours (such as monitoring and strategy use), non-cognitive aspects (such as perceptions, beliefs, and attitudes), or both. The first classification of motivation refers to integrative and instrumental motivation. Integrative motivation is defined in terms of a desire to learn the L2 to make use of it in different context. In contrast, instrumental motivation refers to the desire to learn the L2 to gain specific goal, such as such as job advancement. (Noels, Pelletier, Clement &Vallerand, 2000). Ryan, Kuhl and Deci (1997) introduced the Self-Determination Theory (SDT). According to the self-determination theory, there are two general types of motivation: intrinsic and extrinsic. Intrinsic motivation has been defined as (a)" participation in an activity purely out of curiosity, that is, for a need to know about something; (b) the desire to engage in an activity purely for the sake of participating in and completing a task; and (c) the desire to contribute" (Dev, 1997, p. 58).Intrinsic motivation needs individual students to make more effort in reaching their goal. Extrinsic motivation refers to motives that are outside of and separate from the behaviors they cause; the motive for the behavior is not inherent in or essential to the behavior itself (Dev, 1997). If a student studies hard to do well on a test because a good grade will result in a brand new car, then the motive behind studying is not what it is intended to do: obtain knowledge. Studying information is a prerequisite to learning; however, it is often manipulated to lead toward other things such as money, acceptance, or power.

Based on Self-Determination Theory and the empirical studies by Vallerand (1997) and Vallerand (1992, 1993) L2 intrinsic motivation (IM) is categorized as IM-Knowledge, IM-Accomplishment, and IM-Stimulation.IM-Knowledge is defined in terms of an attempt to discover new ideas and develop knowledge. IM-Accomplishment is a desire to achieve a goal by carrying out a specific task. IM-Stimulation is a feeling simulated by performing a task, such as appreciation, fun or excitement. Three levels of extrinsic motivation can also be classified based on Self-Determination Theory. They are classified as external, introjected, and identified regulation. External regulation as its name offers is a type of behaviour in which the means external to the individual plays a significant role. Introjected regulation refers to the internalized reasons behind an activity. In respect to the identified regulation, the individual performs behavior because he or she considers it as personally valuable (Deci& Ryan, 1995).A final motivational concept proposed by Deci and Ryan (1985) is amotivation. Amotivation refers to the situation in which a person finds no relation between her or his actions and their consequences; on the other hands the person sees the consequences as a result of factors beyond her or his control.

Noels (2001a) investigated the relations between perception of teachers' communicative style and students' motivation. The results revealed the significant role of the teacher's behavior on the

students' generalized feelings of autonomy and competence. That is, the more the teacher was perceived as controlling, the less the students felt they were learning Spanish spontaneously and the lower the students' intrinsic motivation. Noels also found that the integrative orientation was strongly correlated with intrinsic motivation and identified regulation. However, this is not to indicate that intrinsic and integrative motivations are identical.

Salehi and Ziahosseini (2007) investigated the relationship between motivation and the use of language learning strategies by Iranian university students. The results of the study revealed that extrinsic motivation did not correlate meaningfully with the choice of language learning strategies. On the other hand, intrinsic motivation correlated meaningfully with the choice of language learning strategies. It was also found that Iranian learners were intrinsically rather than extrinsically motivated

Based on what Pintrich (2002) found in his study, students with metacognitive reading skill are more motivated in terms of academic success and learn better than other students. In this regard, Zimmerman and Schunk (2001) also conducted a study investigating the prominent role of using metacognitive strategies in the development of academic motivation and results revealed a significant relationship. Liu (2006) examined the effect of acquiring metacognitive reading strategies on the learners' motivation and he found these strategies vital for developing the motivation. He also thinks that the reason for demotivation is having no knowledge about the suitable strategies in different situations.

This study used the intrinsic/extrinsic dichotomy of motivation to investigate the effect of motivation on the use of metacognitive reading strategies while reading a text among Iranian EFL learners. In simple terms, this study tried to examine whether there is any difference between those who are extrinsically motivated and those who are intrinsically motivated in the use of metacognitive awareness strategies in reading comprehension.

Method

Participants

This study was conducted with 36 participants at an English institute in Qazvin, Iran. The participants consisted of male Iranian EFL learners aging 18 to 24, at intermediate level with Persian as their first language. They were all university students of different majors. The sample consisted of both junior and senior students.

Instrumentations

Metacognitive Awareness of Reading Strategies Inventory (MARSI) was the first instrument that was employed to obtain the research data (Mokhtari &Reichard, 2002). It comprises three subcomponents of GRSs which contains 13 items (1,3,4,7,10,14,17,19,22,23,25,26,29), can be thought of as generalized or global reading strategies aimed at setting the stage for the reading act, for instance, setting a purpose for reading, and previewing text content. PSSs were 8 items (8,11,13,16,18,21,27,30)addressing localized, focused problem solving or repair strategies, such as checking one's understanding upon encountering conflicting information, used when problems develop in understanding textual information. SRSs, 9 items (2, 5,6,9,12,15,20,24,28), involved

using the support mechanisms or tools like reference materials aimed at sustaining responsiveness to reading. Participants were asked to respond to items using a 5-point Likert scale indicating the frequency of the use of strategy from "never or almost never" to "always or almost always". The 30-item questionnaire was validated by Mokhtari and Reichard (2002) using large subject population representing participants with equivalent reading abilities ranging from middle school to college. The internal consistency for the three above subscales ranged from 0.89 to 0.93 and reliability for the total sample was 0.93, showing a reasonably dependable measure of metacognitive awareness of reading strategies. Following Mokhtari and Sheorey's (2002), the subscales of each part can be defined in terms of statements and the average for each subscale of the inventory and show which group of strategies the participant use most when reading. The higher the averages the more frequently the student used the strategy concerned.

Academic Motivation Scale (AMS) was the second instrument that was employed to obtain the research data. It is a questionnaire on motivation, which was developed by Vallerand (1992), divided into seven subscales. Three subscales designed to assess extrinsic motivation including (a) External Regulation (3 items), (b) Introjected Regulation (3 items), and (c) Identified Regulation (3 items). Three distinct, unordered subscales (9 items) designed to assess intrinsic motivation. Finally, Amotivation was assessed with 3 items. Vallerand et al. reported that Cronbach's coefficient alphas for the subscales ranged from .83 to .86. In addition, test-retest reliability over a one-month period ranged from .71 to .83 for the subscales. The instrument included a 1 to 7 scale for each item showing the extent it corresponded to the learners' reasons for learning English. Scale 1 means that the item does not refer to the learners' reasons at all. Scales 2 and 3 indicate that the reason represented by the items is a little true about the learners. The learners who mark scale 4 show that the item moderately represents their reason for studying English. Scales 5 and 6 with a little difference in degree represent that the item corresponds a lot to the students' reason for learning English. Finally, scale 7 shows that the learner has exactly the same reason mentioned in the item for learning English.

Procedures

1. Data collection

The data of this study were collected in two successive class sessions. Administration procedures were similar in both sessions. In the first class session, MARSI was introduced and distributed among the participants. They were fully briefed on how to fill out the questionnaire. Participants were given ample time to complete the questionnaire. In the second class session, AMS was introduced and distributed among the participants. Again, participants were fully briefed on how to fill out the questionnaire. They were given ample time to complete the questionnaire. Both questionnaires were collected at the end of the class session. Some of them were discarded since they were not completed satisfactorily.

2. Data analysis

The items were codified and entered into SPSS program for windows, version 16.0. In the first phase, descriptive statistics was used to determine the mean and standard deviations in both questionnaires. Next, a paired t-test was run to determine the pattern of motivation among Iranian learners. Finally, a correlational analysis was used to determine whether there was a meaningful

relationship between types of motivation and categories of Metacognitive awareness listening strategies.

Results

Frequency of the Use of Metacognitive Reading Strategies

In order to arrive at an answer to the first research question which stated, "Which Metacognitive Reading Strategy (global, problem-solving, support) is the most commonly used strategy among Iranian EFL learners, Descriptive statistics was used and Mean and the Standard Deviation (SD) of the respondents for each item were estimated. As shown in Table 1, the Means and Standard Deviation (SD) of the participants' perceived use of GRSs, PSRSs, and SRSs were calculated (Mokhtari & Reichard, 2002).

Table 1. Mean and Standard Deviation of Metacognitive Reading Strategies

Strategy	N	Minimum	Maximum	Mean	St. Deviation
GRSs	36	1	5	3.48	6.68
PSSs	36	1	5	3.69	5.38
SRSs	36	1	5	3.34	5.62

Comparing the means of strategies, it turned out that, though the use of metacognitive reading strategies was not high among Iranian EFL learners and the difference between uses of strategies was not highly significant, problem solving was the most frequently used strategy (mean=3.69 on a 5-point scale) (see table 1), but global (mean= 3.48 on a 5-point scale) and support (mean=3.34 on a 5-point scale) reading strategies were moderately used.

Patterns of Motivation

In order to answer the second research question which stated, "Are Iranian EFL learners intrinsically motivated or extrinsically motivated? "a paired t-test was performed. Although descriptive statistics (Table 2) indicated a little change in the patterns of motivation, paired t-test (Table 3) showed that there was not a significant difference between EFL students in terms of type of motivation.

The descriptive statistics calculated for extrinsic motivation and intrinsic motivation types as shown in table 2 yielded the means of 42.03, 44.06 and SDS of 6.58, 8.32 for each of them respectively. The mean of amotivation was very small (5.23), so it was overlooked.

Table 2. Descriptive Statistics for Two Types of Motivation

	N	Minimum	Maximum	Mean	St. Deviation
extrinsic	36	28.00	58.00	42.03	6.58
intrinsic	36	15.00	56.00	44.06	8.32
Valid N (listwise)	36				

As can be seen in table 3, the t-value of a paired t-test (.123>0.05) did not show a significant difference between the means of the two categories (extrinsic motivation and intrinsic motivation). Therefore, the findings of this procedure prove that there is no significant difference in terms of type of motivation among Iranian EFL learners.

Table 3. Paired T-test for Extrinsic/Intrinsic Categories

	Mean	St. Deviation	T	Sig(2-tailed)
Extrinsic-intrinsic	3.066	10.882	1.345	.123

Types of Motivation and Metacognitive Reading Strategies

In order to answer the third research question which stated, "Is there any relationship between the type of motivation (extrinsic/ intrinsic motivation) and the choice of Metacognitive Reading Strategies among Iranian EFL learners?" a correlational analysis was run. As table 5 shows, a positive but not high correlation was arrived at between intrinsic motivation and three categories of metacognitive reading strategies. In addition, a positive correlation was arrived at between extrinsic motivation and all three categories of metacognitive reading strategies. However, due to the small sample of the participants, the correlation was not statistically significant; therefore the coefficient of determination (common variance) was run. The results confirmed the Pearson correlation coefficient (see table 5).

Table 5. Pearson Correlation between Extrinsic/Intrinsic Motivation and Metacognitive Reading Strategies

		GRSs	PSRSs	SRSs
Extrinsic	Pearson Correlation	.218	.313	.199
	Sig. (2-tailed)	.252	.003	.180
	Common Variance	4.56	22.31	2.35
	N	36	36	36
Intrinsic	Pearson Correlation	.248	.248	.346
	Sig. (2-tailed)	.043	.124	.064
	Common Variance	12.16	8.06	11.94
	N	36	36	36

Discussion

The present study aimed to explore the kind of metacognitive reading strategies that are mostly used by Iranian Intermediate EFL students. By the comparison of mean scores of global, support, and problem-solving strategies, results indicated that problem-solving reading strategy appeared to be used more than global and support reading strategies. Therefore, the findings reported here sheds light on the importance of helping EFL readers develop their metacognitive awareness of specific reading strategies deemed necessary for proficient reading. As Pressley (2000) highlighted, teachers can play a great role in enhancing students' awareness of such strategies, and in assisting them to become constructively responsive readers. Sheorey and Mokhtari (2002) pointed that teaching students to become constructively responsive readers can promote skillful academic reading, which, in turn, can enhance academic achievement. Regarding the points mentioned and based on the students' enthusiasm to use metacognitive strategies in an Iranian context, it can be stated that considering the instruction of these strategies in different curricula can help the students solve their problems in a deeper manner and make them to self-control their educational operation. When they are more aware in their learning process, it seems reasonable to be more creative in an academic context by the use of metacognitive strategies. However, during the metacognitive-based activities in the early steps, learners may enjoy scattered and disorganized mind without any model; therefore, educational activities should be compiled in a way providing the condition for expressing such creative reflections. Additionally, since most of the students in the classrooms make their best to get just higher scores, metacognitive strategies automatically conform themselves to the class and teacher's condition and it seems an important impediment for creativity in the classrooms. This study was also an attempt to see how Iranian EFL learners are motivated, intrinsically or extrinsically. To do so, descriptive statistics and paired t-test was run and results indicated a little change in the patterns of motivation; therefore, the findings of this procedure prove that there is no significant difference in terms of type of motivation among Iranian EFL learners.

The final aim of the present study was to investigate the relationship between the type of motivation (extrinsic/ intrinsic motivation) and the choice of Metacognitive Reading Strategies among Iranian EFL learners. Findings revealed a positive but not high correlation between intrinsic motivation and three categories of metacognitive reading strategies. In addition, a positive correlation was arrived between extrinsic motivation and all three categories of metacognitive reading strategies. In the category of metacognitive reading strategies, the correlations between global, problem-solving, and support strategies and intrinsic motivation, though not significantly high, was more than extrinsic motivation. However, the correlation between PSRSs and extrinsic motivation, in particular introjected regulation, was positively larger and statistically more significant. The reason pertains to performing an activity in response to some kind of pressure that the individuals have internalized. In other words, students try to direct their attention and concentrate on the reading task because they would feel guilty if it were not completed, or they put efforts into reading task in order to impress others with their proficiency (Deci and Ryan ,1985).

Conclusion

This study was to investigate the use of metacognitive reading strategies, patterns of motivation as well as the relationship between motivation and L2 readers' metacognitive awareness and perceived use of strategies among Iranian EFL learners. A total number of 36 intermediate students from an English Institutes in Qazvin took part in this study. The following conclusions can be drawn from the study:

Regarding the use of metacognitive reading strategies, some strategies are more frequently used than the others are, although the frequencies of the use was not high and the difference between uses of strategies was not highly significant. This finding necessitates prioritizing teaching sequences, with the least frequent strategies receiving as much emphasis as the most frequent ones.

Concerning patterns of motivation, the t-value of a paired t-test (.123>0.05) did not show a significant difference between the means of the two categories (Intrinsic Motivation and Extrinsic Motivation). Therefore, the findings suggested that there is no significant difference in terms of type of motivation among Iranian EFL learners.

In relation to the relationship between motivation and use of strategies, findings revealed a positive but not high correlation between intrinsic motivation and three categories of metacognitive reading strategies. In addition, a positive correlation was arrived between extrinsic motivation and all three categories of metacognitive reading strategies.

Finally, the fact that the use of metacognitive reading strategies was not high among Iranian EFL learners suggested that readers' metacognitive awareness should be cultivated and strategy instruction should be integrated into the teaching of reading. Teachers can use the results of this study as a guide to determine the strategies that have the potential to improve learners' motivation and learning. They can provide instruction and practice in using metacognitive awareness strategies while reading, especially in support, which was found to have the least frequency but positive influence on motivation. In addition, cultivating, maintaining and developing intrinsic motivation of EFL learners should be important goals pursued by all educators in the L2 field.

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