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Research Paper

Iranian Male and Female EFL learners' Metacognitive Awareness of Reading Strategies: Links to Their Reading Comprehension Performance

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Abstract

Reading comprehension is a fundamental language skill for many EFL learners and might be impacted by a wide range of factors like reading strategies and gender. The present study was conducted to compare Iranian male and female EFL learners' tripartite reading strategy use, Problem Solving Reading Strategies (PSRSs), Global Reading Strategies (GRSs), and Support Reading strategies (SRSs), and their relationship to their reading comprehension. To serve the purpose, 80 undergraduate EFL learners, 40 females and 40 males, majoring in English Language Teaching (ELT) and English Translation (ET) at Islamic Azad University-Tabriz Branch were selected randomly. The research variables were measured based on the participants' performance on the reading section of the PET test and the Metacognitive Awareness of Reading Strategy Inventory (MARSI) (Mokhtari & Reichard, 2002). The obtained research data were analyzed through Independent Samples T-test and a Standard Multiple Regression (MR) analysis. The results revealed significant differences between male and female participants in terms of their reading comprehension and perceived use of PSRSs. It was also exhibited that for male participants, only SRSs were the statistically significant predictor of males' reading comprehension while for females it was the PSRSs that made significant contribution to explain reading comprehension. The gender variation in reading comprehension, reading strategies and the correlational pattern between these two variables exists. Such variations have to be addressed in the process of teaching and suggestions will be made as how teacher trainers, syllabus designers, and individual university students majoring in English Language Teaching (ELT) and English Translation (ET) can apply the findings to promote their outcome.

Keywords: Metacognitive Awareness of Reading Strategies, Reading

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Comprehension, EFL Learners.

Introduction

Reading which requires different cognitive processes and reading abilities over the life span is the most fundamental tool and a complex process for learning for students. Reading comprehension has been defined as the psycholinguistic, interactive conversion process of active reconstruction of a message from written passage (Chastain, 1988) which is not only essential to lifelong learning but also to academic learning (Dole et al., 1991). It is also supposed to be a primary source of language input, a pleasurable activity, and a means of extending one's language knowledge (Chastain, 1988). Research in second language acquisition (SLA) has long established the significance of this skill in the process of learning a second or foreign language (Krashen, 1981). The reading plays a secondary role in ESP courses and functions as a source of content input from original resources. It is often said to be the main concern of learners in countries in which English is taught as a foreign language (Farhady, 1998). Consequently, EFL teachers should attribute importance to teaching reading comprehension in their general English and ESP classes. In classrooms, students may have different educational backgrounds, language proficiency levels, cultures, and prior experiences (Ediger, 2001; Nugroho, Bharati & Hartono, 2019). However, all of them need to learn how to read more

effectively to cope with their diverse needs and to achieve academic success. Despite multiplicity of the prerequisite skills that can help learners comprehend better, experts highlight the role of a set of reading strategies which might be introduced and practiced to facilitate various aspects of the comprehension process and help them to develop their decoding skills which can be a valuable diagnostic aid in reading process (Machado, 2010; Liao et al., 2022).

Reading strategies indicate how readers conceive of a task, how they make sense of what they read, and what they do when they don't understand (Sheorey & Mokhtari, 2001; Bagheri Masoudzadeh et al., 2020). Basically, reading strategies which can be any comprehension-enhancing action taken by the readers consist of a whole range of strategies including skimming and scanning, contextual guessing, and reading for meaning, utilizing background knowledge, recognizing text structure, and so forth (Hsu, 2006). Similarly, in other study it is mentioned that reading strategies cover a wide range which are skimming, scanning, skipping unknown words, contextual guessing, tolerating ambiguity, and reading for meaning and making inferences (Oxford, 1990). These strategies are teachable and when taught, they help students improve their performance on test of comprehension and recall (Dole et al., 1996; Rezabeigi et al., 2021).

Reading strategies, along with other learning strategies, are of paramount importance since they not only can tell us the degree to which readers interact with the written text, but also differentiate proficient readers from those who are not (Chastain, 1988). In other words, research findings have indicated that reading strategies, in particular, are important to students' comprehension, and not only can improve reading comprehension, but also differentiate good comprehenders from poor ones (Dole et al., 1996). As Chastain (1988) proposed, while reading a text, readers employ different strategies consciously or subconsciously by connecting the material in the text to what they have already known, asking themselves questions about the text, trying to paraphrase or considering what they know about the structure of the text. Application of such strategies can determine the extent of readers' interaction with the text as well as their comprehension of it. According to Grellet (1981) and Mohseni et al. (2020), proficient readers do not concentrate on sentences and words; instead they start with global understanding and then work toward comprehension of detailed aspects of the reading. And as Chastain (1988) proposed, while they are reading a text, they connect the material in the text to what they have already known, ask themselves questions about the text, trying to paraphrase or consider what they know about the structure of the text, etc.

Consequently, the critically important aspects of skilled reading

were considered as strategic awareness and monitoring of the comprehension process (Sheorey & Mokhtari, 2001; Fitri & Ginting, 2021). In reading skill, such awareness and monitoring were often referred to as 'metacognition' which 'entails knowledge of strategies for processing texts, the ability to monitor comprehension, and the ability to adjust strategies as needed' (Auerbach & Paxton, 1997; Sheikh, Soomro, & Hussain, 2019). It was the combination of the conscious awareness of the strategic reading processes and the actual use of reading strategies that distinguished the skilled from the unskilled readers (Sheorey & Mokhtari, 2001). Anderson (2002) believes that metacognitive reading strategy awareness is students' regulation or monitoring reading strategies while reading.

Review of the Related Literature

The relationship between reading comprehension and metacognitive reading strategy use has been empirically substantiated in ESL contexts (e.g., Sheorey & Mokhtari, 2001) and in EFL contexts (e.g., Tavakoli, 2014), and in terms of gender variation (e.g., Griva et al., 2009; Talebi & Fallahi, 2021). For example, Sheorey and Mokhtari (2001) examined the differences between English as a second language (ESL) and United States of America students in their perceived use of reading strategies while reading academic materials. The sample for the quantitative study was 302 college students (150 US native English speaking and 152 ESL readers). Results from the

study illustrated that there was a difference between learners with high reading ability in the first language and second language used a comparatively higher degree of cognitive and metacognitive reading strategies compared to the L2 readers.

Furthermore, in the context of Iran, Tavakoli (2014) explored the overall pattern of metacognitive awareness of reading strategy use and its possible relationship with reading comprehension. Moreover, the study investigated the influence of gender and proficiency level on the use of these strategies. The results revealed that there was a strong positive correlation between reported metacognitive awareness of reading strategies and reading comprehension achievement. The findings also showed that the students' knowledge of metacognitive reading strategies were significantly influenced by their levels of English proficiency. According to the findings, Iranian EFL students are moderately aware of reading strategies and the most frequently used strategies were the Support Reading Strategies (SUP), followed by Global Reading Strategies (GLOB), and then Problem-Solving Strategies (PROB). It was also revealed that no significant difference existed between male and female language learners in the use of reading strategies.

Gender difference also plays a significant role in reading strategy research. Empirical studies have shown that male and female learners act differently in EFL reading performance and strategy

use such as Griva, Alevriadou, and Geladari (2009), who studied the gender differences on the effects of selections of EFL reading strategy use, concluded that female students were reported making extensive use of a wider range of strategy repertoire and showed more strategic knowledge and flexibility in using both cognitive and metacognitive strategies.

Consequently, the significant role of reading as a way of providing meaning-focused input (Nation & Newton, 2009) has been acknowledged for EFL learners. However, Iranians in general and Iranian EFL learners in particular have been reported as weak readers (Amiryousefi et al., 2012). Therefore, this study can be important for EFL learners because when they want to read a text successfully, they need to know and use reading strategies which can facilitate their comprehension (Samuel & Kamil, 1984).

To the best of our knowledge, however, no previous study has addressed Iranian male and female EFL learners' tripartite reading strategies' predictive ability in their reading comprehension and the probable relationship between these strategy types and the participants' reading comprehension. Thus, this study has been designed to pursue this purpose.

The purpose of this study is to answer the following questions:

1) Are there any significant differences between Iranian male and female EFL learners' reading comprehension?

2) Are there any significant differences between Iranian male

and female EFL learners' tripartite metacognitive reading strategy use?

3) Which components of metacognitive reading strategy use best predict the Iranian male learners' reading comprehension?

4) Which components of metacognitive reading strategy use best predict the Iranian female learners' reading comprehension?

Method

Participants

To carry out the study, 80 participants, 40 female and 40 male, were selected randomly out of 100 undergraduate Iranian EFL students Bachelor of Arts (BA) degree majoring in the English Language Teaching (ELT) and English Translation (ET) at Islamic Azad University-Tabriz Branch, Iran, in the second semester of the academic year 2016. The age range of the participants was between 19 to 40 and they were native speakers of Azari with Farsi as their second language and were learning English as a third language.

Instruments

The present study employed two instruments: the reading section of Preliminary English Test (PET) and the Metacognitive Awareness of Reading Strategies Inventory (MARSIS source).

Preliminary English Test (PET)

In order to assess the participants' reading comprehension performance, the reading PET was administered to the participants and they answered it in 30 minutes. It includes 25 items in the form of multiple choices and if participants

answered each item correctly they would get one point, if not, they lost that point. So, the highest score of this test was 25 and the lowest one was 0. In particular, the test comprised four parts, the first part has five questions in which the participants should read the text in each question, ask themselves what they mean, and choose the correct explanation. The second part includes the other five questions, from 6 to 10, in which five people want to spend a day by the sea and on its other part there are descriptions of eight beaches. So, participants should decide which beach would be the most suitable for each person. The third part contains ten questions in which participants should first look at the statements about a film-making competition then read the text to decide if each statement is correct or incorrect. The fourth part incorporates a text in which participants should read it and answer the questions from 21 to 25.

The Metacognitive Awareness of Reading Strategies Inventory (MARSIS source)

MARSIS, designed by Mokhtari and Reichard (2002), was adapted to measure the participants' metacognitive awareness of reading strategies. It includes three subcategories: Global Reading Strategies (GRSs), Problem Solving Reading Strategies (PSRSs), and Support Reading Strategies (SRSs). GRSs allow readers to intentionally monitor or manage their reading, PSRSs help readers to directly solve reading difficulties, and SRSs are basic

mechanisms to enhance reading comprehension. Additionally, the 30-item MARSIS has a five-point Likert scale, ranging from one-point (I never or almost never do this) to five points (I always or almost always do this). The range of scores is from 30 to 150. The higher scores indicate the more frequent use of reading strategies. Also, Mokhtari and Reichard provided a key to interpreting the mean for each item and overall item ratings of the MARSIS. They considered a mean 2.4 or lower as low usage, 2.5–3.4 as medium usage, and 3.5 or higher as high usage. Mokhtari and Reichard (2002) analyzed the validity of the questionnaire and results supported that the scale was valid for eliciting reading strategies that are used by foreign language learners. The internal consistency of the questionnaire calculated through Cronbach's alpha was .87, indicating a high reliability of the questionnaire.

Procedure

During the class time, first of all the reading comprehension PET test was given to the selected 80 undergraduate Iranian EFL Learners in ELT and ET field. It has 25 questions and after a brief elaboration, participants were asked to answer the questions on the answer sheets in 30 minutes. Further, the participants were asked to answer MARSIS. It includes 30 items which are five-point Likert-scale and after the beginning instructions which were given in English and then in Farsi to ascertain participants' comprehension, the participants

were asked to read each of 30 statements in the questionnaire and rate each item on a five-point Likert scale with alternatives of (1= I never or almost never do this) to (5= I always or almost always do this) based on their use of those strategies while reading a text.

They were also asked to write their names, ages, and genders on the answer sheets of the reading PET test and also on the questionnaire. All of them were allowed to work at their own pace when they were rating the items of the questionnaire. They could take as much time as they needed to complete the questionnaire.

Data analysis

The SPSS software, version 22, was employed to analyze the research data. The first two research questions which addressed gender differences in the participants' reading comprehension and metacognitive reading strategy use were answered through Independent Samples t-test analysis. Further, research questions three and four dealing with the relationship between the components of the participants' perceived use of MARSIS and their reading comprehension were answered through Pearson Product Moment Correlation, Descriptive Statistics, Standard Multiple Regression, and ANOVA after the prerequisite assumptions of Multicollinearity, Normality, and Linearity were checked; the level of statistical significance for correlation tests was set at 1.0.

The current ex-post-facto correlational study explored the

difference among Iranian male and female EFL learners' reading comprehension and metacognitive reading strategy use. To achieve this purpose, the research was designed principally to be quantitative (i.e., correlation study) and make predictions about the relationship between reading comprehension and metacognitive reading strategy use.

Results and Discussion

Results

Male and Female Students' Reading Comprehension

The first research question dealt with the significant differences between Iranian male and female EFL students' reading comprehension. To answer this research question, the participants' reading scores were analyzed to find out the descriptive Statistics of the groups, as presented in Table 1.

Table 1- Descriptive Statistics of Male and Female Students' RC Scores

	Gender	N	Mean	Std. Deviation
Sum Reading Comprehension	Male students	40	15.85	4.01
	Female students	40	13.78	4.62

As it is shown in Table 1, the mean and the Standard Deviation (SD) reading comprehension are 15.85 and 4.01 for males and 13.78 and 4.62 for females. So, both of male and female learners' reading comprehension were low because their mean scores were lower than the mean+2SD, but males' reading

comprehension was better than the females as the males mean score was higher than the females. To verify the normality of the distribution of the reading comprehension scores, we applied One-sample Kolmogorov-Smirnov test, the results of are demonstrated in Table 2.

Table 2- One-Sample Kolmogorov-Smirnov Test for Male and Female Students' RC Scores

		Sum Reading Comprehension
	N	80
Normal Parameters ^{a,b}	Mean	14.81
	Std. Deviation	4.42
Most Extreme Differences	Absolute	.10
	Positive	.06
	Negative	-.10
	Kolmogorov-Smirnov Z	.93
	Asymp. Sig. (2-tailed)	.34

a. Test distribution is Normal.

b. Calculated from data.

As Table 2 demonstrates, the p-value of male and female participants' reading comprehension scores (.34) was higher than .05, implying the normality of the reading

comprehension scores distribution. Then, an Independent Samples t-test was run to test the significance of the observed difference. Table 3 shows the results.

Table 3- Independent Samples T-test for Male and Female Students' RC Scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
Sum Reading Comprehension		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Sum Reading Comprehension	Equal variances assumed	1.63	.20	2.14	78	.03	2.08	.97	.15	4.00
	Equal variances not assumed			2.14	76.47	.03	2.08	.97	.15	4.00

As it can be seen from Table 3, the significant value in Levene's

Test for equality of variances is .20. It means that the statistics of the

first row should be read. There was significant difference in scores for males and females participants' Reading Comprehension, $t(78) = 2.14, p = .03 < .05$.

Male and Female Students' Tripartite Metacognitive Reading Strategy Use

The second research question

concerned the significant differences between the Iranian male and female EFL students' tripartite metacognitive reading strategy use. To answer this research question, we first computed the Descriptive Statistics of the research data obtained from the MARSIs, as displayed in Table 4.

Table 4- Descriptive Statistics of Male and Female Students' Tripartite Metacognitive Reading Strategy Use Scores

	Gender	N	Mean	Std. Deviation
GRSs	Males	40	3.41	.39
	Females	40	3.51	.59
PSRSs	Males	40	3.33	.49
	Females	40	3.62	.61
SRSs	Males	40	3.38	.40
	Females	40	3.54	.54

It can be concluded from Table 4 that the Means and SDs of GRSs are 3.41 and .39 for the males and 3.51 and .59 for females, those of PSRSs are 3.33 and .49 for males and 3.62 and .61 for females, and those of SRSs are 3.38 and .40 for males and 3.54 and .54 for females. The results showed differences in all components of MARSIs with females obtaining higher mean scores because their mean scores of

all components of MARSIs were 3.5 or higher than 3.5 as it was stated in the MARSIs instrument by Mokhtari and Reichard (2002). Then, we checked the normality of the score distribution of the male and female students' tripartite metacognitive reading strategy and One-Sample Kolmogorov-Smirnov test. Table 5 illustrates the results of this test

Table 5- One-Sample Kolmogorov-Smirnov Test for the Male and Female Students' Tripartite Metacognitive Reading Strategy Use Scores

		GRSs	PSRSs	SRSs
	N	80	80	80
Normal Parameters ^{a,b}	Mean	3.46	3.48	3.46
	Std. Deviation	.50	.57	.48
Most Extreme Differences	Absolute	.07	.07	.10
	Positive	.05	.07	.10
	Negative	-.07	-.07	-.07
Kolmogorov-Smirnov Z		.65	.67	.91
Asymp. Sig. (2-tailed)		.78	.75	.37

a. Test distribution is Normal.

b. Calculated from data.

As Table 5 indicates, the p-values for GRSs ($p = .78$), for PSRSs ($p = .75$), and for SRSs ($p = .37$) were higher than .05. So, it was revealed that the Iranian male and female students' tripartite metacognitive reading strategy use scores had a normal distribution. After the

normality distribution assumption was met, an Independent samples t-test was ran to see whether there was a significant difference between the male and female participants' tripartite metacognitive strategy use scores or not. Table 6 specifies the results.

Table 6- Independent Samples T-test for the Male and Female Participants' Tripartite Metacognitive Strategy Use Scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
GRSs	Equal variances assumed	6.67	.01	-.89	78	.37	-.10	.11	-.32	.12
	Equal variances not assumed			-.89	68.05	.37	-.10	.11	-.32	.12
PSRSs	Equal variances assumed	2.03	.15	-	78	.02	-.29	.12	-.54	-.05
	Equal variances not assumed			-	74.43	.02	-.29	.12	-.54	-.05
SRSs	Equal variances assumed	4.88	.03	-	78	.14	-.16	.11	-.37	.06
	Equal variances not assumed			-	71.99	.14	-.16	.11	-.37	.06

As it can be seen from Table 6, the significance value in Levens' Test for GRSs were ($p = .01 < .05$), PSRS ($p = .15 > .05$), and SRSs ($p = .03 < .05$). There was no significant difference in scores for males and females' GRSs, $t(68.05) = -.89$, $p = .37 > .05$, nor in scores their SRSs, $t(71.99) = -1.46$, $p = .14 > .05$; however, there was a significant difference in scores for male and female participants' PSRSs, $t(78) = -2.36$, $p = .02 < .05$.

Predictive Ability of Tripartite Metacognitive Reading Strategy Use Components in Male' Students' Reading Comprehension

The fourth research question dealt with the significant predictive ability of tripartite metacognitive strategy use components in male and female students' reading comprehension.

In order to answer this question, we first computed the descriptive statistics of the mean scores of the Iranian male students' reading comprehension and three main

components of metacognitive reading strategy use were computed. Table 7 displays the results of descriptive statistics of this test.

Table 7- Descriptive Statistics of the Iranian Male Students' RC and Three Main Components of MARSIScores

Groups of students	Mean	Std. Deviation	N
Sum Reading Comprehension	15.85	4.01	40
Male students			
GRSs	3.41	.39	40
PSRSs	3.33	.49	40
SRSs	3.38	.40	40

As it is indicated in Table 7, the mean score of the Iranian male students' reading comprehension was 15.85 with the standard deviation of 4.01 while the mean scores of the metacognitive reading strategy use components were as follows: GRSs (M=3.41, SD= .39), PSRSs (M= 3.33, SD= .49) , and SRSs (M= 3.38, SD= .40).

Employing a Standard Multiple Regression (MR) analysis requires checking the assumptions of Multicollinearity, Normality, and Linearity. In order to check the normality of the distribution of the residual errors, I used the Normal P-P Plot of regression standardized

residual. The result of this test indicated the normality distribution assumption was met. Then, we employed a scatter plot to check the Linearity assumption of the relationship between reading comprehension and metacognitive reading strategy use components, its outcome illuminated the linearity assumption was met.

On the other hand, to determine the correlation between the components of metacognitive reading strategy use and reading comprehension, we employed Pearson- Product Moment Correlation. The results of these tests are shown in Table 8.

Table 8. Pearson Product Moment Correlation for the Iranian Male Students' Tripartite Components of Metacognitive Reading Strategy Use and RC

Groups of Students		Sum Reading Comprehension	GRSs	PSRSs	SRSs
Male Students Pearson Correlation	Sum Reading Comprehension	1.00	-.006	.15	.28
	GRSs	-.006	1.00	.44	.25
	PSRSs	.15	.44	1.00	.32
	SRSs	.28	.25	.32	1.00
	Sig. (1-tailed)				
Sum Reading Comprehension	Sum Reading Comprehension	.	.48	.17	.03
	GRSs	.48	.	.002	.05
	PSRSs	.17	.00	.	.01
	SRSs	.03	.05	.01	.
N	Sum Reading Comprehension	40	40	40	40
	GRSs	40	40	40	40
	PSRSs	40	40	40	40
	SRSs	40	40	40	40

The results in Table 8 specified that there was no significant small and negative relationship between the Iranian male students' sum reading comprehension and GRSs ($r = -.006$, $P = .48$), no significant small and positive relationship between sum reading comprehension and PSRSs ($r = .15$, $P = .17$), but a significant small and positive relationship was found between sum reading comprehension and SRSs ($r = .28$, $P = .03$). Also, the relationship

between the components of the independent variable is high. Therefore, among the tripartite components of metacognitive reading strategy use, only SRSs correlated significantly ($r = .28$, $P = .037$) with reading comprehension.

On the other hand, to determine the statistically significant prediction ability of each of the tripartite components of the MARSIs, we conducted an ANOVA table of regression. Table 9 demonstrates the results of this test.

Table 9- ANOVA Table of Regression for MARSIs Components as Predictors of the Iranian Male Students' RC

Groups of students	Sum of	Mean			
Model	Squares	Square	Df	F	Sig.
Male	61.40	20.46	3	1.30	.03 ^a
students Regression					
1	565.70	15.71	36		
Residual					
Total	627.10		39		

a. Predictors: (Constant), SRSs, GRSs, PSRSs

b. Dependent Variable: Sum Reading Comprehension

Based on Table 9, the p-value (.03) and the magnitude of F-value (1.30) revealed the statistically significant predictive power of metacognitive reading strategy use components for reading comprehension. However, Coefficient regression table was

used to check the Multicollinearity assumption and to see which components of the metacognitive reading strategy use significantly predicted Iranian male students' reading comprehension. Table 10 presents the results.

Table 10- The Coefficient Regression for MARSJ Components as Predictors of Iranian Male Students' RC

Groups of students	Model	Unstand		Standardized	t	Sig.	95.0%		Collinearity		VIF		
		ardized	ardized				Confidence	Correlations	Statistics				
		Coefficients	Coefficients	Coefficients			Interval for B	order	Partial	Part			
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-	Tolerance			
Male	(Constant)	7.68	6.97		1.10	.27	-6.47	21.82					
students	1												
	GRSs	-1.30	1.81	-.12	-.71	.47	-4.99	2.37	-.006	-.11	-.11	.78	1.26
	PSRSs	.94	1.50	.11	.62	.53	-2.11	4.00	.15	.10	.09	.75	1.33
	SRSs	2.80	1.68	.28	1.65	.01	-.62	-6.22	.28	.26	.26	.87	1.13

a. Dependent Variable: Sum Reading Comprehension

As it is illustrated in Table 10, in the standardized Beta coefficients column, the largest Beta coefficients value of .28 was for SRSs, that is, the SRSs made the strongest contribution to explain the reading comprehension when the variance explained by all other variables in the model was controlled for. In other words,

SRSs component was the only statistically significant predictor of reading comprehension since the p-value of the SRSs (B= .28, P= .01) was lower than .05.

The magnitudes of tolerance and VIF values indicated that the interaction between metacognitive reading strategy use components and reading comprehension leads to

collinearity. Therefore, the multicollinearity assumption was not violated. Therefore, the fourth research question is answered: among tripartite metacognitive reading strategy use components, SRSs component was statistically significant predictor of Iranian male students' reading comprehension.

Predictive Ability of Tripartite Metacognitive Reading Strategy Use Components in Female Students' Reading Comprehension

The fourth research question dealt with the significant predictive ability of tripartite metacognitive strategy use components in male and female students' reading comprehension .

In order to answer this question, the descriptive statistics of the mean scores of the Iranian female students' reading comprehension and tripartite components of metacognitive reading strategy use were computed. Table 11 displays the results of descriptive statistics of this test.

Table 11- Descriptive Statistics of the Iranian Female Students' RC and Tripartite Metacognitive Reading Strategy Use Components

Groups of students	Mean	Std. Deviation	N
Sum	13.78	4.62	40
Reading			
Comprehension			
Female students GRSs	3.51	.59	40
PSRS	3.62	.61	40
SRSs	3.54	.54	40

According to the results represented in Table 11, the mean score of the Iranian female students' reading comprehension was 13.78 with the standard deviation of 4.62, but the mean scores of the metacognitive reading strategy use components were in this manner: GRSs (M=3.51, SD= .59), PSRSs (M= 3.62, SD= .61) , and SRSs (M= 3.54, SD= .54). Besides, in order to determine the normality of the distribution of the residual errors, we used the Normal P-P Plot of regression standardized residual. The results of this test revealed that the normality distribution

assumption was met. On the other hand, in order to determine the linear relationship between reading comprehension and metacognitive reading strategy use components, we used a scatter plot which demonstrated the linearity assumption was met.

In order to find out the correlation between the components of metacognitive reading strategy use and reading comprehension, the researcher employed Pearson- Product Moment Correlation. The results of these tests are shown in Table 12.

Table 12- The Pearson Product Moment Correlation for the Iranian Female Students' Tripartite Components of Metacognitive Reading Strategy Use and RC

Groups of students		Sum Reading Comprehension	GRSs	PSRSs	SRSs
Female students Pearson Correlation	Sum Reading	1.00	.06	.23	.14
	Comprehension				
	GRSs	.06	1.00	.54	.61
	PSRSs	.23	.54	1.00	.60
	SRSs	.14	.61	.60	1.00
Sig. (1-tailed)	Sum Reading	.	.33	.07	.18
	Comprehension				
	GRSs	.33	.	.00	.00
	PSRSs	.03	.00	.	.00
	SRSs	.18	.00	.00	.
N	Sum Reading	40	40	40	40
	Comprehension				
	GRSs	40	40	40	40
	PSRSs	40	40	40	40
	SRSs	40	40	40	40

As is illustrated by Table 12, there was a non-significant small and positive relationship between reading comprehension and GRSs ($r=.06$, $P=.33$), significant small and positive relationship between reading comprehension and PRSs ($r= .23$, $P=.03$), and non-significant small and positive relationship between reading comprehension and SRSs($r= .14$, $P= .18$). For that reason, among the tripartite components of metacognitive

reading strategy use, PSRSs correlated significantly with reading comprehension.

On the other hand, to establish the statistically significant prediction of the Iranian female students' reading comprehension by taking metacognitive reading strategy use components into account, the researcher used ANOVA table of regression. Table 13 demonstrates the results of ANOVA table of regression.

Table 13- ANOVA Table of Regression for MARSJ Components as Predictors of the Iranian Female Students' RC

Groups of students	Model	Sum of Squares	Df	Mean Square	F	Sig.
Female students 1	Regression	52.60	3	17.53	.80	.004 ^a
	Residual	780.38	36	21.67		
	Total	832.98	39			

a. Predictors: (Constant), SRSs, PSRSs, GRSs
 b. Dependent Variable: Sum Reading Comprehension

As it is observed in Table 13, the p-value of .004 and the magnitude of F-value .80 revealed the statistically significant predictive power of metacognitive reading strategy use components for reading comprehension. Nevertheless, Coefficient regression table was

used to check the Multicollinearity assumption and to see which components of the metacognitive reading strategy use significantly predict Iranian female students' reading comprehension. Table 14 indicates the results of this test.

Table 14- Coefficient Regression for MARSJ Components as Predictors of Iranian Female Students' RC

Groups of students	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Collinearity Statistics				
		B	Std. Error				Lower Bound	Upper Bound	Zero-order	Partial Part	Tolerance	VIF	
Female students 1	(Constant)	7.83	5.45		1.43	.16	-3.23	18.90					
	GRSs	-.85	1.67	-.10	-.50	.61	-4.24	2.54	.06	-.08	-.08	.57	1.74
	PSRSs	2.00	1.60	.26	1.25	.002	1.25	5.26	.23	.20	.20	.58	1.70
	SRSs	.46	1.91	.05	.24	.80	-3.42	4.35	.14	.04	.03	.51	1.92

a. Dependent Variable: Sum Reading Comprehension

Regarding the results of Table 14, the magnitudes of tolerance and VIF values indicated that the interaction between metacognitive reading strategy use components and reading comprehension leads to collinearity. Therefore, the multicollinearity assumption was not violated. In the standardized Beta coefficients column, the largest Beta coefficients value of

.26 was for PSRSs. It means that the PSRSs made the strongest contribution to explain the reading comprehension, when the variance explained by all other variables in the model was controlled for. Similarly, among the tripartite components of the metacognitive reading strategy use, only PSRSs component made significant contribution to explain reading

comprehension. In other words, PSRSs was statistically significant predictor of reading comprehension since the p-value of the PSRSs ($B=.26$, $P= .002$) was lower than $.05$.

Discussion

The first research question dealt with the significant differences between Iranian male and female EFL students' reading comprehension and the third and the fourth ones addressed any significant relationship between this comprehension and the components of MARSII. Results indicated that the males and females' reading comprehension were low because their mean scores were lower than the mean+2SD, but the males were superior to the females and there was significant differences between them in terms of reading comprehension $t(78) = 2.14$, $p= .03 < .05$. On the other hand, SRSs component was the best predictor of the males' reading comprehension ($B= .280$, $P= .016$) while the females' comprehension was best predicted by PSRSs ($B=.264$, $P= .002$).

The findings call into question those of Brantmeier (2003) who reported topic-based gender variation in reading comprehension viably owing to differences in the groups of participants' background knowledge. It was found that in case of feminine-related topics and content, female readers tended to outperform their counterparts. In another study conducted a year later, Brantmeier (2004) examined the topic familiarity levels and comprehension of university level

male and female second language (L2) readers with two different authentic violence-oriented texts. The results revealed that while advanced male and female readers tended to be equally familiar with violence-oriented content of the target culture, females outperformed their male counterparts on L2 comprehension tasks for texts that involved male-to-female violence. The overall findings suggest that females may have an advantage over males in the free written recall procedure. The findings are also incongruent with those of Schueller (2004) who examined the effects of pre-reading strategy training on male and females' conceptually driven top-down strategies and text-bound bottom-up reading comprehension and found that the participants in the top-down training group outperformed those in the bottom-up or no training groups with females outperforming males on nearly all assessment measures. As suggested by Brantmeier (2003, 2004), there is not sufficient evidence to explain such gender variation in reading comprehension nor to justify the superior performance of Iranian male participants.

In terms of the relationship between reading comprehension and components of MARSII, the findings might be compared to those of Tavakoli (2014) who explored the overall pattern of metacognitive awareness of reading strategy use and its possible relationship with reading comprehension of Iranian EFL students. The results showed a

strong positive correlation between reported metacognitive awareness of reading strategies and reading comprehension achievement. The results also showed that the students' knowledge of metacognitive reading strategies was significantly influenced by their levels of English proficiency. According to the findings, Iranian EFL students are moderately aware of reading strategies and the most frequently used strategies were the Support Reading Strategies (SRSs), followed by Global Reading Strategies (GRSs), and then Problem-Solving Reading Strategies (PSRSs). No significant difference, however, were reported between male and female language learners in the use of reading strategies. In contrast, Estacio (2013) investigated bilingual readers' metacognitive strategies as predictors of reading comprehension and results revealed that the participants use the three major types of metacognitive reading strategies. However, results have not been conclusive as to which strategy affects reading comprehension more because there was no single predictor of the reading tests scores. Nonetheless, the results of the study validated the relationship between bilinguals' use of metacognitive reading strategies and their reading comprehension.

Findings of the second research question bore out significant gender differences merely in the participants' of PSRSs scores, $t(78) = -2.365, p = .021 < .05$) but not in their GRSs scores, $t(68.050) = -.893, p = .375 > .05$), nor their SRSs scores, $t(71.993) = -1.469, p = .146$

$> .05$). In contrast, we have other studies like Karbalaei (2010) who investigated whether there are any significant differences between EFL and ESL readers in metacognitive reading strategies when they are reading academic texts in English. The results of this study indicated that the subjects in both groups reported a similar pattern of strategy awareness while reading academic texts although the two student groups had been schooled in significantly different socio-cultural environments. Regarding the difference existing among both groups, Indians reported more awareness and use of global, support, and total metacognitive reading strategies. Iranian students reported no significant difference in using problem-solving reading strategies. These findings explain some of the differences and similarities between EFL and ESL readers by employing metacognitive strategies in both contexts. On the other hand, Griva, Alevriadou, and Semoglou (2012) conducted a study to identify the correlation between gender and reading preferences and reading strategies employed by 5th and 6th Grade students of primary school in Greece. Four hundred and five Greek students (206 boys and 199 girls) participated in the study and were asked to fill in a questionnaire and think aloud about the processes they followed and the strategies they used. The questionnaire results indicated significant differences between male and female students in reading preferences, since the female students showed a greater preference for 'human-interest'

stories and males preferred to read comics and action-stories. The verbal data revealed the females' flexibility in strategy use and their higher metacognitive awareness compared to males.

Gender differences also plays a significant role in reading strategy research, empirical studies have shown that male and female learners act differently in EFL reading performance and strategy use such as Griva, Alevriadou, & Geladari (2009), who studied the gender differences on the effects of selections of EFL reading strategy use and concluded that female students reported making extensive use of a wider range of strategy repertoire and showed more strategic knowledge and flexibility in using both cognitive and metacognitive strategies. Likewise, Lee (2012) aimed to probe the question whether types of foreign language reading strategy use among EFL College freshmen differ in terms of frequency and gender. Results indicated that the differences between male and female students on the types of reading strategies were significant, male students reported greater strategy use than their female counterparts regarding memory, cognitive, compensation strategies, while fewer males than females used strategies of meta-cognitive and social-affective while reading. In addition, males were more worried about unknown words compared to their counterparts while reading. Furthermore, Goh & Foong's (1997) research pointed out that significant differences were found between males and females

in the categories of compensation and affective strategies, yet not in the other four categories of memory, cognitive, metacognitive, and social strategies. However, Phakiti's study (2009) found no gender differences in either reading performance or use of cognitive and metacognitive strategies.

Conclusion

Based on the findings the following conclusions might be drawn:

1. Both of male and female undergraduate EFL learners' reading comprehension at Islamic Azad university- Tabriz Branch were low because their mean scores were lower than the mean+2SD, but male learners were better than female counterparts with significant differences merely in their perceived use of Problem-Solving Reading Strategies (PSRSs) component of MARSII. Surprisingly, the females' higher score on this component (3.62), compared to the males (3.33), did not lead to a superior performance on the reading test. Hence, it might be concluded that mere superior awareness of reading strategies is not sufficient to guarantee comprehension. Learners need to be trained how to reach a balance in their use of strategies to avoid unnecessary and hampering

pauses that may hinder the flow of comprehension.

2. Gender variation in the predictive ability of the components of MARSII in predicting reading comprehension highlights individual differences and varying needs of the learners which have to be taken into account and addressed through practical techniques syllabus designers and teachers employ at the content specification and methodology of the curriculum.
3. Among metacognitive reading strategies, support strategies for male learners and problem solving strategies for female learners are predictors of reading comprehension. So, if male learners of Islamic Azad University of Tabriz Branch use support and female learners utilize problem solving reading strategies, they will have better comprehension, but if they do not use these strategies they cannot comprehend the texts better.

The findings emerging from the present study allude to a number of pedagogical implications for practicing teachers, syllabus designers, and individual university students majoring in English Language Teaching (ELT) and English Translation (ET). The significance of reading comprehension should be

acknowledged by practicing teachers not only in words but in actual measures they take to promote this skill because the findings show that EFL learners at Islamic Azad University of Tabriz are weak in this skill and it's a big weakness for them as ELT and ET undergraduate students. Also, selection of the teaching content is carried out by syllabus designers who have to base this endeavour on specified sets of goals and objectives that are compatible with the needs of the learners. In addition, practicing teachers, instructors, and professors have to remember the affective side of the learning process while teaching in actual classrooms. Finally, ELT and ET undergraduate students at Islamic Azad University of Tabriz and in other universities are recommended to assume more active roles in the process of learning how to teach. The findings from this research can help them acknowledge the role of strategies and plan to take the most of them through self-regulated learning.

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