The Impact of Cognitive and Metacognitive Strategies on Iranian EFL Bilingual versus Monolingual Learners' Reading Comprehension ability

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Abstract

This study attempts to measure the effect of the implementation of cognitive and metacognitive reading strategies on reading ability of second year high school students who were bilinguals and monolinguals. In order to address these issues, a quantitative study was conducted on 193 EFL bilingual and monolingual students who were randomly selected from some high schools of Markazi province (Arak and Farahan) . To meet the mentioned aims, subjects were given English proficiency test, reading comprehension test, cognitive and metacognitive strategies questionnaire By utilizing t-test and ANOVA revealed that there would be statistically significant differences between the above-mentioned subjects as follows:

1-There wasn't meaningful difference between female bilingual and female monolingual learners in using cognitive and metacognitive strategies .

2- There was meaningful difference between male bilingual and male monolingual learners in using cognitive and metacognitive strategies .

3- Gender didn't have significant effect on using cognitive and metacognitive strategies in EFL learners' reading comprehension ability.

Keywords: Bilinmgualism; Monolingualism; Cognitive and metacognitive strategies.

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1.Introduction

At first there would be brief discussion about the importance of reading strategies especially cognitive and metacognitive strategies ,then bilingualism and monolingualism have been regarded.

1.1.Reading strategies

Since the 1970's, there have been a variety of reading strategies advocated by second language learning theorists to teach students to read well .These strategies include skimming, scanning, contextual guessing, skipping unknown or ambiguous words, critical reading, making inferences, etc., all of which are recognized as traditional reading skills . Notable researchers such as Brown, Baker, and Flavell in 1981's, have also studied several different aspects of the relationship between metacognitive ability and effective reading.

In recent years, some investigators such as Hosenfeld and Block used think-aloud techniques and text structure recognition, which are regarded as effective methods for metacognitive strategies to identify relations between certain types of reading strategies and successful or unsuccessful foreign/second language reading. The results of both their studies showed individual learners' greater progress in developing their reading skills after one semester in college (Carrell, 1989).

Reading, whether in L1 or L2 is surely an important skill. Talebi(2011) noted that "reading is a basic and complementary skill in language learning." Since reading is a problem-solving activity, the idea of strategic reading has become the matter of investigation in recent years. Since the late 1970's, ESL researchers have begun to recognize the relationship between reading strategies and successful and unsuccessful second language reading inL1 and/or regard reading strategies as "ways of getting around difficulties encountered while reading.

Some books about reading comprehension written by Muth, 1990,Pearson & Johnson, 1978 and Pressley & Afflerbach, 1995).

As Khalaj,H,R& Vafaeeseresht(2012) pointed out :a lot of researches have focused directly on reading comprehension and its instruction (Dole, Duffy, Roehler, & Pearson, 1991; Fielding & Pearson, 1994; Pearson & Fielding, 1991; Pressley, El-Dinary et al., 1992; Rosenshine & Meister, 1994). They discussed about comprehension from psychological and neurological point of view which for any information to be learned and understood, it first must be processed through working memory or short-term memory. In other words, comprehension is a psychological and neurological process, and for the comprehension to take place, the information should first pass successfully through the working memory.

The idea of Royanto(2012) is that reading is an important skill that must be mastered by students since they are young, because it helps the students to widen their knowledge and to communicate with others and also to continue their studies. Some research findings show that Indonesian students reading skill is limited.

Mohammadi Ghavam,Rastega & Razmi(2011)expressed that learners' metacognitive strategic knowledge in reading is composed of thinking about the reading process, planning for reading, monitoring comprehension during the reading process, evaluating the effectiveness of strategies used in reading, and verifying what is read as well as specific steps in problem solving during comprehension (Flavell, 1987; O'Malley & Chamot, 1990; Wenden, 1991).

Zarei, Shokrpour, Nasiri& Kafipour(2012) said that Metacognition, in essence, is thinking about thinking . It refers to person's awareness of cognitive processes and states such as memory, attention, knowledge, guessing and illusion In other words, it is thinking about what you are thinking and comprehending what you are doing. Metacognitive strategies in a reading context have played an important role in successful learning. Individual learners with a high level of metacognitive knowledge and skills are aware of their own strengths and weaknesses, and they can ensure their

academic attainment. In addition, students who display a wide range of metacognitive skills perform well and complete schoolwork more effectively.

Ahmadi&Mansoordehghan (2012) reported that most of reading comprehension studies use gender-oriented reading texts and that there was a need for more research on L2/FL reading comprehension using gender-neutral text. Also, he has mentioned that probably the first factor to explain individual differences in reading comprehension is background knowledge. However, background knowledge is not the only factor that may explain the individual differences in reading comprehension.

1.2. What is bilingualism?

The concept of monolingualism is clear from its name ,so person whocan speak just in one language and also understand only one language are monolinguals but the concept of bilingualism is difficult to be defined.

In one perspective, being bilingual equals being able to speak two languages perfectly, as Bloomfield in1935's defined bilingualism as 'the native-like control of two languages'. On the other hand, Macnamarain 1967's suggested that a bilingual is anyone who possesses a minimal competence in only one of the four language skills, listening comprehension, speaking, reading and writing, in a language other than his mother tongue. Bialystok, Craik, Green and Gollan(2009) estimated that approximately 60% of the world's population is either bilingual or multilingual; that is, more than half the people in the world routinely use two or more languages in their daily communication .

 The present researcher intended to work on the following questions:

Q1:Is there any significant difference between female monolingual and bilingual learners in using cognitive and metacognitive strategies?

Q2:Is there any significant difference between male monolingual and bilingual learners in using cognitive and metacognitive strategies?

Q3:Does gender have significant effect on using cognitive and metacognitive strategies in EFL learners' reading comprehension ability?

Regarding above questions , the following hypotheses are formulated:

H1: There is significant difference between female monolingual and bilingual learners in using cognitive and metacognitive strategies.

H2: There is significant difference between male monolingual and bilingual learners in using cognitive and metacognitive strategies.

H3: Gender has significant effect on using cognitive and metacognitive strategies in EFL learners' reading comprehension ability.

2. Methodology:

2.1. Participants:

The initial sample of this study consisted of 220 students with the age range of 15 to18 years old. By means of a background questionnaire some information about subjects were elicited. Accordingly,27 subjects were discarded. The researcher decided the remaining subjects(193)into four groups as:

a)50 male monolinguals

b) 50 female monolinguals

c) 45 male bilinguals

d) 48 female bilinguals

2.2. Instruments:

The different instruments that were used in this study include:

a) Background questionnaire: It will utilize to elicit some information as: the subjects 'full name, their age, name of their school and the language/languages they use.

b)   General English Proficiency Test (Transparency Test):

This test has been composed of multiple-choice cloze passage, vocabulary, grammar, and reading comprehension sections (See Appendix B). In order to have a reliable test of proficiency at the piloting stage the test was given to 15 students, who were selected randomly, and its reliability was estimated through the K-R21 formula as .85 and then the test was found reliable for the purpose of this study.

The time allotted for taking this test was also determined at the piloting stage as 40 minutes. Duration of the test was estimated by calculating the time spent by the fastest and the slowest students in answering the test divided by 2. Thus, the time allotted for the test was: $\frac{50+30}{2} = 40$

D) General Reading Comprehension Test:

It was used to determine the proficiency level of the subjects in reading comprehension ability. This test was consisted of two separate texts with 6 questions in each one. So this test had 12 scores. Like proficiency test, duration of the test was estimated by calculating the time spent by the fastest and the slowest students in answering the test and then divided by 2. $\left(\frac{20+40}{2} = 30\right)$, so the time allowed was 30 minutes. To ensure that this test is an appropriate one in terms of readability, some passages were randomly selected. The readability formula was run afterward to obtain an index of readability for them. The mean index turned out to be 22.14and seemed quite suitable for the purpose of this study. Going through KR-21 formula, it was indicated that reading comprehension test was reliable enough (.68) for the respective goal in the present thesis.

d)Cognitive and Metacognitive Reading Strategies:

The instrument measures two broad categories of reading strategies, namely, metacognitive strategies that are "intentional, carefully planned techniques by which learners monitor or manage their reading", and cognitive strategies that are "the actions and procedures readers use while working directly with the text (Sheorey & Mokhtari, 2001, p. 436). Strategic approach, or the process of comprehension, was measured by means of a five-point Likert scale questionnaire (Never/ Seldom/ Sometimes/ Usually/ and Always). All the 33 items (out of which 17 items were metacognitive and 16 items were cognitive in nature) in this study were adopted from different related questionnaires in research validated studies (e.g., Baker & Boonkit, 2004; Oxford, et al. 2004; Sheorey & Mokhtari, 2001; Taillefer & Pugh, 1998)

First part related to activities before reading a text, second part was about activities during reading and last part was about activities after reading a text .In each part, students should have picked one of five numbers which were belong to students' preference in using cognitive and metacognitive strategies when they are reading a text. In order to ensure the

reliability of the instrument, at the piloting stage it was administered to 15 students of the similar group taking part in the study. Based on the data gathered, the reliability was calculated to be 0.78. The present researcher also asked two experts in same field of the study to evaluate the instrument in terms of its effectiveness. The experts' feedback confirmed the content validity research.

2.3. Procedures

To achieve the objectives of this study the following procedures were taken by the researchers. First, the background questionnaire was given to the subjects to fill them out within 5 minutes. Two groups of High and Low language proficiency levels were identified, that is, those whose scores were 1SD below the mean were taken as Low and those whose scores were 1SD above the mean as High level, making 193 students in total. A the end of this session, reading comprehension test was administered among the subjects to be completed in 30 minutes as determined at the pilot study in order to have an assessment of their English reading comprehension ability.

Checking all subjects in general reading comprehension ,the researcher started the treatment on cognitive and metacognitive strategies through some simple examples and clear explanation. The learners filled the questionnaire based on their using these strategies when they are reading.

## 3. Result s and discussion:

Several statistical operations were performed to answer the research questions and test the corresponding hypotheses. The mean scores of both the bilingual and monolingual group would be used to verify or reject the research hypotheses. In addition, independent sample *t*-test and one way analysis ANOVA were run to see whether the differences were significant or not.

Table1:Descriptive statistic in   cognitive and metacognitive reading strategies awareness between female bilingual and female monolingual learners

Reading strategies	Number	Mean	Standard deviation	Standard error measurement	df	P
Female monolinguals	48	97.66	14.35	2.07	96	0.893
Female bilinguals	50	98.24	26.00	3.67		

According to table1,mean scores and standard deviations indicated for two groups of female bilingual and monolingual learners and p=0.893>0.05,So there isn't meaningful difference between two groups in using cognitive and metacognitive strategies .In other word, first hypothesis(there is   significant difference between female monolingual and bilingual learners in using cognitive and metacognitive strategies) was rejected. The result of analyzing first hypothesis is obvious in figure1.

Figure1:Graph of cognitive and metacognitive reading strategies awareness between female bilingual and female monolingual learners.
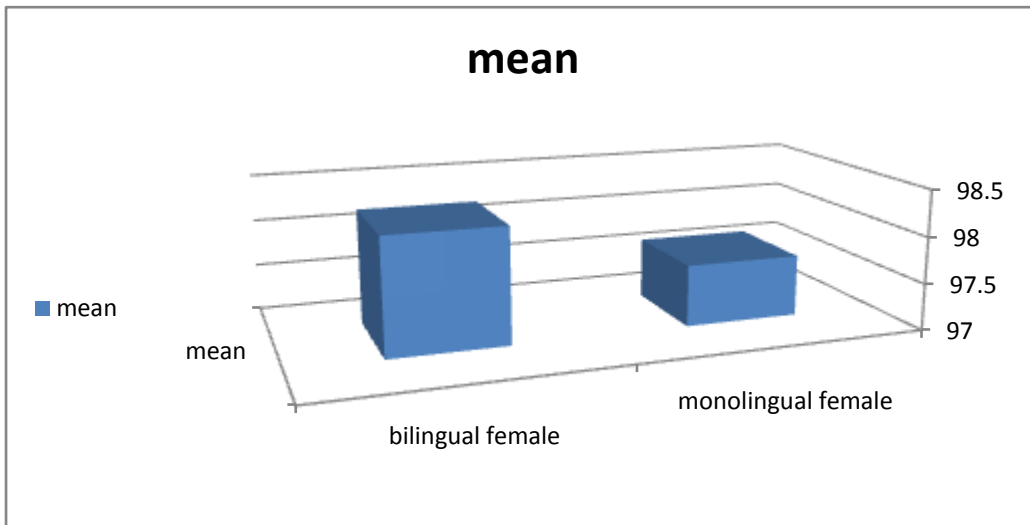

Regarding statistical analysis, mean scores of male monolinguals and bilinguals are 95.62and 105.95 , respectively. On the other hand, obtained p value is 0.016 and it is clear that this value is lower than 0.05. So, there is a meaningful difference between monolingual and bilingual male subjects in their using cognitive and metacognitive reading strategies awareness. It means male bilinguals used these strategies more than male monolinguals. So the second hypothesis (there is significant difference between male monolingual and bilingual learners in using cognitive and metacognitive strategies) was accepted that is clear in figure2.

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Table2:Descriptive statistic in cognitive and metacognitive reading strategies awareness between male bilingual and male monolingual learners

Reading strategies	Number	Mean	Standard deviation	Standard error measurement	df	P
Male monolinguals	50	95.62	20.80	2.94	93	0.016
Male bilinguals	45	105.95	19.97	2.97		

Figure2:Graph of cognitive and metacognitive reading strategies awareness between male bilingual and male monolingual learners
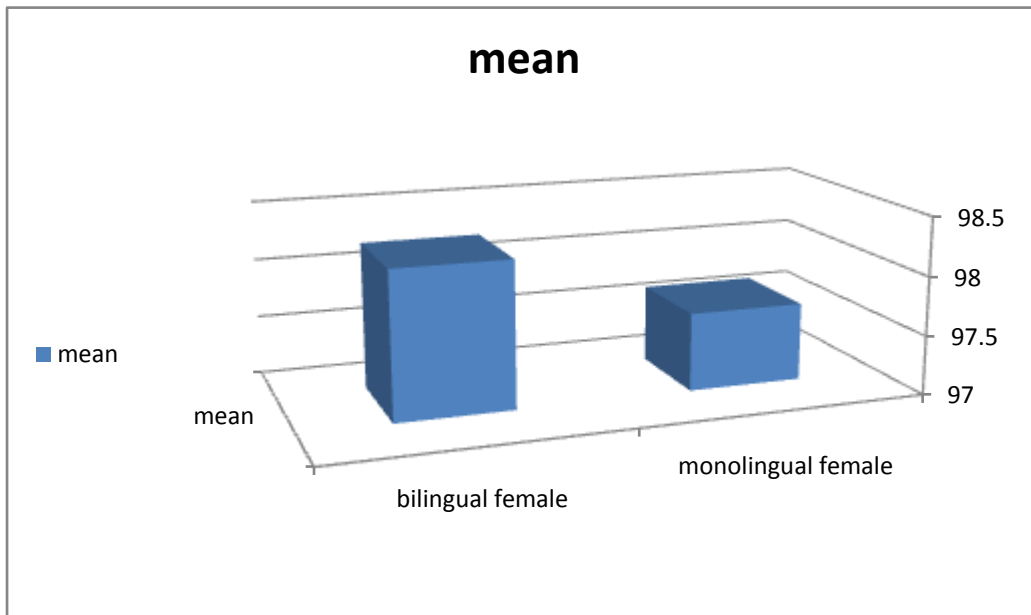

Table3:Descriptive statistic in   cognitive and metacognitive reading strategies awareness between male and female learners

Reading strategies	Number	Mean	Standard deviation	Standard error measurement	df	P
Females	98	97.95	21.01	2.12	191	0.399
Males	95	100.51	20.95	2.15		

As table3andfigure3 display, mean score of males is 100.51 while the mean score of females is97.95 and p value is 0.399>0.05, so there isn't meaningful difference between males and females in using cognitive and metacognitive reading strategies. So the third hypothesis(Gender has significant effect on using cognitive and metacognitive strategies in EFL learners' reading comprehension ability) was rejected. So gender doent have significant effect on using cognitive and metacognitive reading strategies.

Figure3:Graph of cognitive and metacognitive reading strategies awareness between male and female learners
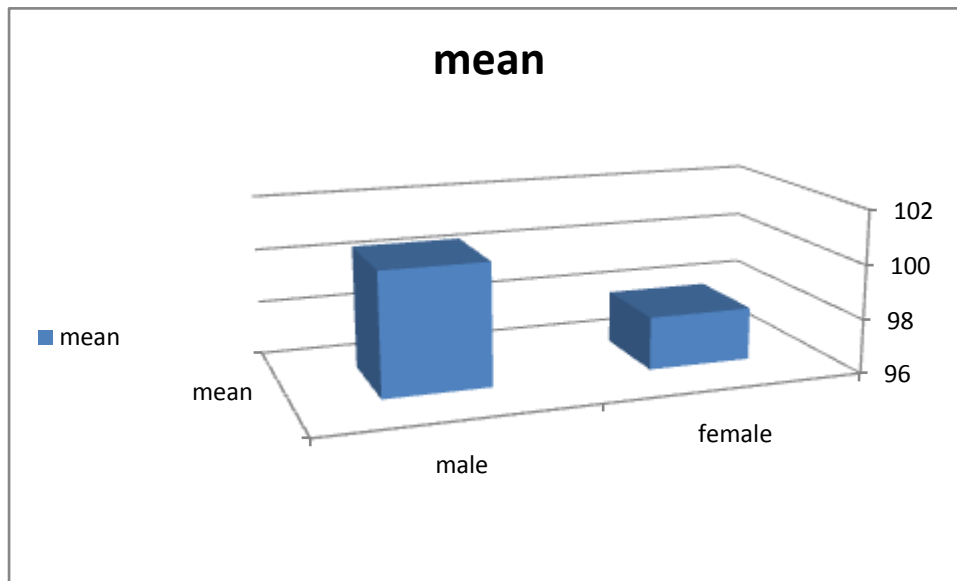
The result of the study by Tafaroji Yeganeh(2012) indicated that the metacognitive listening strategies among bilinguals are higher than monolinguals in general. This finding reveals that the degree of metacognitive awareness is affected by the number of languages known by the participants. Since in this study the outcome of bilinguals is much better than monolinguals it comes to mind that bilingualism will positively affect the degree of metacognitive awareness

Conclusion:

It is worth mentioning that the main aim of this study   is investigation on the impact of reading strategy awareness, i.e. cognitive and metacognitive strategies on EFL learners readings' ability regarding their gender and linguality. So ,as previously mentioned, there wasn't meaningful difference between female bilingual and female monolingual learners in using cognitive and metacognitive strategies and first hypothesis was rejected.

Regarding second hypothesis, there was meaningful difference between male bilingual and male monolingual learners in using cognitive and metacognitive strategies .Therefore ,second hypothesis was accepted. Finally, gender didn't have significant effect on using cognitive and metacognitive strategies in EFL learners' reading comprehension ability and third hypothesis was rejected.

In fact, the awareness of reading strategies will guide students know how to read a text, so it is believed that reading is rule-based and reading comprehension does not occur haphazardly.

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