

Metacognition and Spelling Performance of Iranian High School EFL Learners

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Abstract

The present study investigated the level of metacognitive awareness of Iranian EFL high school students and its relationship with their spelling performance. To attain the purpose of the study, 110 third grade high school students were selected to participate in this study. The participants were requested to complete the Metacognitive Awareness Inventory (MAI) (Sperling, Murphy, Miller & Howard, 2002) and a questionnaire to measure metacognitive awareness regarding their spelling errors (Vanderswalmen, Vrijders & Desoete, 2010). The participants took a dictation test too. The main goal of this study was to find out whether Iranian high school EFL learners' metacognitive awareness regarding their spelling errors is higher than the cut point which is the average score of the questionnaire used to measure metacognitive awareness regarding spelling errors. The results demonstrated that the participants had metacognitive awareness regarding their spelling error. In other words, they were metacognitively aware of their spelling errors. The other aim of this study was to find any relationship between the level of metacognition and spelling performance. The results revealed that learners with a higher level of metacognition had better performance in spelling than those with a lower level of metacognition. The results showed that there was a

significant correlation between the level of metacognition and spelling performance. The findings have implication for pedagogy as well as further research.

Keywords: Metacognition, Metacognitive awareness, spelling errors, EFL learners.

1. Introduction

Writing is one of the important skills in language learning. To learn a language and to have a meaningful communication, writing skill has a special status. It is via writing that an individual is able to communicate and send a variety of messages to the reader. Writing is an act of communication which causes an interactive process between the writer and the reader via the text. Writing needs to be encouraged during the language courses.

In order to master a language, the individual must not only be able to read and write, but to spell correctly as well. Spelling is the changing of linguistic forms in to written forms. It is extremely important in the modern world, whether the interaction takes the form of traditional paper-and-pencil writing or an up to date digital message on a computer, a cell phone or any other technological device (Olashtain, 2001).

Proficient spelling is a very important indicator of a person's language proficiency (Brindle, Graham, Harris & Sandmel, 2009). Although most of the teachers and learners are aware of importance of writing in language proficiency, in most of the classes, the teachers' main focus is not on writing and it's lower level skills such as spelling.

Many studies have been done on spelling in young children and they have revealed the importance of spelling. It is clear that spelling proficiency has a crucial role in writing and most of the learners are not aware of their spelling errors. When the learners use their working memory resources to realize how to spell a word, they may forget their ideas in writing a text (Carlisle, 1994). Spelling depends on the appropriate translation of sounds in to the letters and a proficient segmentation of letters (Friesen, Steffler, Varnhagen, 1998).

According to Westwood (2014) spelling is a thinking process. The human brain enables a person to gather and use different sources of information that are effective in recognition of words and proficient spelling. Cognitive skills are also directly useful in developing and using appropriate mental strategies for learning words and for finding useful connections between words. Learners use a variety of strategies to learn better. Some of these strategies are metacognitive strategies which help the learners to learn better and to think about their learning and the process of learning.

John Flavell(1979)proposed the word metacognition to refer to "cognition about cognitive phenomena "or "thinking about thinking" (Flavell, 1979, p.906). As Lai (2011) states, metacognition consists of two components: knowledge and regulation of cognition. In brief, Metacognitive knowledge includes knowledge about oneself, knowledge about strategies, and knowledge about why and when to use these strategies. Metacognitive regulation is the monitoring of learners' cognition.

It seems that learners who are metacognitively aware of their learning processes, have better performance in learning. Many researchers have made attempts to find any relationship

between metacognition and different skills of language learning. Having such a purpose in mind, the researchers have made an attempt to investigate the learners' spelling errors and its relationship with EFL (English as a Foreign Language) learners' metacognitive awareness. Moreover, this study explored the types of spelling errors that high school EFL learners make in their writing.

Until recently, research on the effect of metacognitive awareness on spelling proficiency of EFL learners has been rare. Claes and Moeyaert (as cited in Vanderswalmen, Vrijders & Desoete, 2010), believe that compared to the past nowadays students seem to have increasing difficulties with spelling. Today, some of the learners are too weak in writing skills. There are many reasons for this phenomenon. The first reason is the priorities in language teaching. In most of the EFL courses the teachers' main focus is not on spelling and they overemphasize the macro level writing processes (i.e., planning, organization and self-monitoring). The other reason is the use of new communication technologies to send written messages. This means that because of the speed of communication, less attention is being paid to proper and appropriate language. Third, the students often lack the attitude and self-awareness of proficient spellers (Vanderswalmen et al., 2010). Although some of the EFL learners make a lot of spelling errors, they are not aware of these errors and they seldom try to correct them.

Vanderswalmen et al. (2010) conducted a research to measure the relationship between the different facets of metacognition, metacognitive experience, metacognitive knowledge, metacognitive skills, and spelling in college students. In this study, they tried to find the types of spelling errors in the students' native language (Dutch). Besides they endeavored to find out that what type of metacognitive measures can predict the proficient spelling. Although this study is the unique one in the field of metacognition and spelling, it was limited since it sufficed to investigate the feeling of confidence and types of spelling errors. That is to say, to the researchers' knowledge, no study has actually tried to measure the learners' metacognitive awareness regarding their spelling errors. As such, the goal then is to conduct an empirical study on metacognitive awareness and spelling proficiency of EFL learners. The other goal of this study is to find the relationship between metacognition and spelling performance of EFL learners and to find out whether they are metacognitively aware of these errors. Accordingly, two research questions were formulated in the present study:

1. Is Iranian high school EFL learners' metacognitive awareness regarding their spelling errors significantly higher than the cut point?
2. Do Iranian high school EFL learners with higher metacognitive awareness have better spelling performance than those with lower metacognitive awareness?

2. Literature Review

2.1. Metacognition

John Flavell proposed the term metacognition in the late 1970s to refer to "cognition about cognitive phenomena" or "thinking about thinking". Larkin (2010) believes that "meta refers to a change of position, a sense of going beyond or to a second order or higher level, and cognition refers to our faculty of knowing or thinking" (p.3). As cited in Lai (2011), Kuhn

and Dean explain that "metacognition is what enables a student who has been taught a particular strategy in a particular problem context to retrieve and deploy that strategy in a similar but new context" (p.5). In cognitive psychology, metacognition is defined as a form of executive control which involves monitoring and self-regulation. Schraw (1998) believes that metacognition is a set of general, rather than domain-specific skill which is empirically distinct from general intelligence, and may help learners to compensate for deficits in general intelligence and/or prior knowledge on a subject during problem solving. Flavell (1976) defined metacognition as follows:

In any kind of cognitive transaction with the human or non- human environment, a variety of information processing activities may go on. Metacognition refers, among other things to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in service of some concrete goal or objective. (p.232)

The other component of metacognition is monitoring of one's cognition which some researchers believe that includes activities of planning, monitoring or regulating and evaluating (Cross & Paris, 1988). Planning involves identification and selection of suitable strategies and includes setting of goal, activating background knowledge and time budgeting. Monitoring involves attending to and being aware of comprehension and includes self testing. Evaluation defines as "appraising the products and regulatory processes of one's learning" (Schraw, 2006, p.114). Flavell (1979) proposes a formal model of metacognition monitoring which includes four classes of phenomena and their relationships. These four classes are: (a) metacognitive knowledge, (b) metacognitive experience, (c)tasks and goals, (d)strategies and actions. (p.906)

2.2. Metacognition and Spelling

According to Westwood (2014) spelling is essentially a thinking process. The learner's brain enables him /her to integrate and use different sources of information that related to word recognition and proficient spelling. For example, careful thinking is needed when analyzing and storing information about a word and when recalling relevant information when encoding the word. When a learner is writing or correcting errors, he or she must consciously judge the correctness of the visual appearance of the written word and must test alternative ways of representing sound and meaning in that word (Dich & Pederson, 2013).Cognitive skills are also directly involved in developing and using suitable mental strategies for word learning and to find useful connection between words (Westwood, 2014, p. 48). Learning correct spelling of words requires the use of several cognitive strategies. A cognitive strategy is a mental plan of action that the learner can use it to control a task or problem in learning.

Proficient spellers have a source of ways for learning, storing, recalling and checking the spelling of the words they use. Less competent speller, because of underdeveloped metacognitive skills, uses fewer strategies and therefore select rote learning (Kraai, 2011).Hacher, Keener, and Kircher (2009) found that metacognitive monitoring and control are essential components of proficient writing and spelling. Hacker et al. (2009) define writing as applied metacognition. According to Vanderswalmen et al. (2010) in writing,

declarative metacognitive knowledge can take many forms. First, there is the writer's knowledge about himself/ herself as a writer, including the writer's knowledge about the knowledge that he/she is comfortable with and which components of spelling they have not yet master. Furthermore, there is metacognitive knowledge regarding the writing task which includes specific strategies for a particular writing task which includes specific strategies for a particular writing task.

There is a lack of studies conducted on metacognition and spelling. Pie-Ye (2009), conducted a study to investigate the effect of metacognitive strategy instruction on EFL primary school students' spelling performance. The main goal of this study was to find out whether Metacognitive Strategy Instruction (MSI) promoted students' metacognitive skill and spelling performance. Moreover, this study investigated the relationship among the MSI, metacognitive skills and spelling performance. The instruments which have used in this study were Metacognitive Strategy questionnaire (MSQ) and two spelling tests. The results showed that after receiving the MSI, the students in the experimental group have better performance in MSQ posttest and in spelling posttest and it showed that metacognitive skills played a role in learning and promotes the students' spelling performance.

In the same line Vanderswalmen et al. (2010) studied the metacognitive knowledge (Mk), skill (MS) and experience (ME) and spelling skills of college students. The instruments of this study were two questionnaires, Prospective Metacognition Questionnaire (PMQ) which assessed students MK of the self as speller and students' use of MS in spelling, and a Retrospective Metacognition Questionnaire (RMQ) which assessed metacognitive experience, namely feeling of confidence (FOC metacognitive feeling) and estimate of the number of spelling errors. They analyzed the types of spelling errors too. The results showed that the higher the MK and MS, the less the errors made. Moreover, It revealed that quite a large number of college students made spelling errors. It showed that measures of MK, MS and ME would equally well predict spelling.

3. Methodology

3.1. Design

In this study the researchers attempted to examine the effect of metacognitive awareness on spelling performance of third grade high school students. Indeed, the researchers tried to find whether these learners are metacognitively aware of their spelling errors or not. In order to investigate the metacognition level and spelling performance, using two questionnaires the researchers used the survey technique to gather data. This study is ex post facto in design.

3.2. Participants

A total of 110 Iranian third grade high school female students participated in this study. The researcher used the intact classes of students in three high schools in Kermanshah. The participants were EFL learners and all of them were native speakers of Persian.

3.3. Procedure

First the researchers did a pilot study and asked some of the randomly selected participants to

take a dictation test to find the words with which they had more writing errors. Then the researchers chose the words for the dictation test and used some of the words in the questionnaire which measured the learners' metacognitive awareness regarding spelling errors.

In the next step the researcher asked the selected participants to answer the questionnaires to find out if any misunderstanding arises. After the pilot study, the researchers started the remaining stages of the research.

Next, the participants took the dictation test. The test was dictated in the following way. First, the words were read aloud and the students had to write down. After dictating all the words, the complete dictation test was read aloud once more to give the students the opportunity to check their errors.

Then, the participants answered MAI and the other questionnaire which measured the metacognitive awareness regarding spelling errors. The content validity of this questionnaire has been tested by asking some experts.

4. Results

To assess the participants' metacognitive awareness regarding their spelling errors, the researcher used a dictation test and the questionnaire to measure their metacognitive awareness regarding their spelling errors. To measure spelling performance, the dictation test was scored by counting the number of spelling errors. The descriptive statistics of the results of the questionnaire showed that the mean score was 47.31.

In order to find a cut point to classify the participants according to their metacognitive awareness regarding their spelling errors, the researchers used the average score of the questionnaire which was 38.5. Then using SPSS software and Mann-Whitney test the participants scores of metacognitive awareness questionnaire were classified to two groups, which was higher than the average score (>38.5) and lower than the average (<38.5).

Table 1. Ranks of Participants' Scores of Metacognitive Awareness Regarding Spelling Errors

awareness \leq 38.5 (FILTER)			
	N	Mean Rank	Sum of Ranks
awareness $<$ mean	15	8.00	120.00
$>$ mean	95	63.00	5985.00
Total	110		

Based on Table 1, the score of 15 participants were lower than the average score and it was 8.00. On the other hand, the score of 95 participants were higher than the average and it was 63.00.

Table 2. Mann-Whitney Test of Metacognitive Awareness

Metacognitive awareness	
Mann-Whitney U	.000
WilcoxonW	120.000
Z	-6.214
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: awareness <= 38.5 (FILTER)

According to Table 2, the results of Mann-Whitney test shows that $z = -6.214$ and $\text{sig} = 0.000$. Because the $\text{sig}(0.000) < 0.05$, the results reveal that there is a statistically significant difference between the ranks and the level of participants metacognitive awareness regarding their spelling errors is higher than average.

To find out whether learners are metacognitively aware of their spelling errors, the researcher used a Pearson-Correlation test to find any relationship between metacognitive awareness regarding spelling errors and score of dictation and to answer the first research question. The results of the Pearson-Correlation test showed that there is a significant correlation between metacognitive awareness regarding spelling errors and spelling performance.

In order to answer the second research question, the descriptive statistics of participants' metacognitive awareness were computed. The mean score was 65.8 and the standard deviation was 8.73. The minimum and maximum scores were 44 and 89 respectively. In order to classify the participants to two groups, to find the participants with higher level of metacognitive awareness, the researcher used the participants' mean score of metacognitive awareness (mean=65) as a cut point and classified the learners to two groups: a group with higher metacognitive awareness (>65) and a group with lower metacognitive awareness (<65). Table 3 shows the ranks of higher and lower group in relation to their dictation score.

Table 3. Ranks of Metacognition in Two Groups

Metacognition>65 (FILTER)				
		N	Mean Rank	Sum of Ranks
Dictation	low meta	50	48.91	2445.50
	high meta	60	60.99	3659.50
Total		110		

As it is obvious in this table, out of 110 participants, 50 learners' level of metacognition is lower than the mean score (<65) and 60 learners have higher level of metacognition (>65). The mean rank of dictation score in lower group is 48.91 and the mean rank of dictation score in higher group is 60.99. The results of Mann-Whitney test are represented in Table 4.

Table 4. Results of Mann-Whitney Test

Dictation	
Mann-Whitney U	1.170E3
Wilcoxon	2.446E3
Z	-2.015
Asymp. Sig. (2-tailed)	.044

a. Grouping Variable: Metacognition>65 (FILTER)

Based on Table 4. $Z = -2.015$ and $Sig = 0.044$. It shows that the mean score of learners' dictation test in higher and lower groups are different. The mean rank of higher and lower groups showed that the mean rank in higher group is higher than the mean rank of lower group. So, the results of the test revealed that the dictation scores of higher group are higher

than that of lower group. Therefore, the level of metacognition influenced the dictation score.

5. Discussion

Considering the fact that no other studies have been carried out to assess the relationship between metacognitive awareness and spelling performance in Iran as an EFL context, the present study was conducted. To achieve the purposes of the study, the researcher chose third grade high school students to measure the level of their metacognitive awareness in spelling and to find out whether these learners were metacognitively aware of their spelling errors. Having such a purpose in mind, two questionnaires and a dictation test were used.

As a result, the data analyses were conducted. To answer the first research question of the study aimed at measuring the level of learners' metacognitive awareness regarding their spelling errors, descriptive statistics and Mann-Whitney test were performed. The data analysis indicated that the learners' level of metacognitive awareness regarding spelling errors were higher than the mean score and so, Iranian high school students are metacognitively aware of their spelling errors. The results of the data analysis using a correlation test between metacognitive awareness regarding spelling errors and the score of dictation test showed that, there is a significant correlation between the level of metacognitive awareness regarding spelling errors and dictation. The result of the first research question is new in the field of studies on metacognition.

The second research question aimed at finding whether Iranian high school EFL learners with higher metacognitive awareness had better spelling performance than those with lower metacognitive awareness. To answer this question the descriptive statistics of metacognitive awareness and dictation test were analyzed. The mean of score of metacognitive awareness were used as a cut-point to classify the learners according to the level of their metacognitive awareness. Then a Mann-Whitney test performed to find out the level of learners' metacognitive awareness. The results revealed that the higher group had better performance in dictation than the lower group. It shows that the level of metacognitive awareness influences the spelling performance of Iranian EFL high school students. It is in the same line with Alexander and Garner (1989) who believe that learners, who are metacognitively aware, have better performance than unaware learners.

6. Conclusion

It is clear that metacognitive awareness in educational setting has significance because of its important role in learners' academic success. Paris and Winograd (1990) emphasize the important role of metacognitive awareness in academic learning. Based on the relevant literature it seems that metacognitive awareness can help the learners to enhance their performance during language learning.

In an attempt to investigate the level of Iranian EFL learners' metacognitive awareness of spelling errors and to find out the relationship between level of metacognition and spelling

performance, the current study conducted on 110 third grade high school students. The findings indicated that there is a relationship between metacognition and spelling. As proficient spelling has a crucial role in language learning, promoting learners' level of metacognition can help them to become more proficient in spelling.

From the results of this study, it can be concluded that one way to improve learners' spelling performance, may be promoting the level of their metacognition. Metacognition could be used as a salience to help the learners in language learning. Moreover, metacognitive awareness has a direct relationship with spelling performance of EFL learners and makes them more aware of their spelling errors. Having higher level of metacognitive awareness, the learners become more aware of their spelling errors and correct them.

Additionally, the results show that EFL high school students are metacognitively aware of their spelling errors. It means that, the level of their metacognitive awareness is higher than average. The findings of this study may provide practical implications and suggestions for EFL learners, teachers, educators and administrators to improve qualities of material, syllabus design. In terms of English spelling, EFL students usually have difficulties in memorizing English words. Promoting students' self-awareness may help them identify their problems in English spelling. Thus it is worthwhile for teachers to help students promote their metacognitive awareness of spelling errors.

Based on the findings, learners are recommended to develop and integrate the use of metacognitive strategies to increase metacognitive awareness especially in spelling. Teachers, in view of the importance of metacognition in successful language learning, should comprise metacognition as part of English courses. Hence, in addition to language learning activities, English courses should also provide more metacognitive activities for students.

Teachers are also suggested to focus their attention on learners' spelling performance to help EFL learners become aware of these errors and correct them in their writing. Furthermore, teachers could find ways to increase learners' metacognitive awareness and as a result improve learners' spelling performance in EFL context.

This study was limited to a specific group of EFL learners. Further research studies are needed to replicate the study with different groups of EFL learners. Moreover, the present study did not focus on different genders, so, replicating this research to compare the performance of male and female learners might be an interesting issue for further research.

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