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The Effectiveness of Reflective Learning through Semi-structured Reflection Writing in Reading Performance and Metacognitive Awareness of Iranian EFL Learners

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Abstract

Reflective learning includes learning through reflection and representing the learning process mainly through the medium of writing. This study investigated the effectiveness of reflective learning process in Iranian EFL learners' reading performance and enhancing their metacognitive awareness as one of the main benefits of reflective learning acknowledged in the literature. Participants of the study were 63 high school students assigned to experimental and control groups. A reading comprehension test and Persian version of Metacognitive Awareness Inventory (MAI) were administered at pretest and posttest. A semi-structured reflection sheet was introduced to the experimental group learners to guide their reflections. Independent samples t-test showed significant differences between the experimental and control groups' reading ability and overall metacognitive awareness. Among the metacognitive awareness components, MANOVA showed significant differences in regulation of cognition and three of its subcomponents. There was no significant difference in knowledge of cognition but two of its subcomponents indicated significant differences. Qualitative analysis of the reflections indicated the learners' perceptions of the reflective learning's effectiveness in terms of metacognitive awareness for enhancing reading performance. Reflective learning created a situation for the participants' engagement through writing about their learning and pacing it. They could assess themselves regularly, monitor their learning, manifest their perception, and deal more with their needs, strengths and weaknesses. They reflected their problems and tried to find solutions for them. It gave the teacher awareness of the learners' needs to meet them and provide them with appropriate feedback.

Keywords: Reflective learning; reading performance; metacognitive awareness; self-regulation

INTRODUCTION

Reflective thinking refers to a thinking way about educational matters. It involves the ability to identify problems, make rational choices, find solutions, assess intended and unintended consequences, and assume responsibility for those choices (Taggart & Wilson, 1996). Reflection deals with thinking to learn and according to Dewey (1933) it is an "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusions to which it tends" (p. 9). Suggested levels of reflection include reflection-in-action, reflection-on-action (Schon, 1983), and reflection-for-action or thinking and making decisions for what will happen (Killion & Todnem, 1991).

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Reflective learning includes thinking deeply about learning and manifesting it mainly through the medium of writing, to be assessed by others (Moon, 2004). It occurs when a challenging material is learned for which learners should apply a deep approach, upgrade existing ideas once they use their prior knowledge, reconsider existing ideas that may be meaningful but search for additional meaning without specific intention to form meaning but meaningful ideas occur (Moon, 2004). Reflective learning according to Moon (2004) was defined as follows:

Reflection / reflective learning or reflective writing in the academic context, is also likely to involve a conscious and stated purpose for the reflection, with an outcome specified in terms of learning, action or clarification. It may be preceded by a description of the purpose and/or the subject matter of the reflection. The process and outcome of reflective work are most likely to be in a represented (e.g., written) form, to others and to be assessed. All of these factors can influence its nature and quality (p. 83).

According to Moon (2004), it is a part of the process of learning, plays a role in the enhancement of other learning, and enhances conditions that favor learning by:

- slowing the learning pace, which provides intellectual space
- developing a sense of ownership of learning
- encouraging metacognition that supports learning

Moreover, it can result in knowledge, understanding, problem solving, and deals with emotion.

A learning journal is a vehicle for reflection. It refers to a collection of material primarily based on the writer's processes of reflection over a period of time. Learning implies a total intention by the writer or those who adjust the task for learning enhancement (Moon, 2006). Reflections mainly consist of two important types of information: observable context including the details of experience and environment, and internal context incorporating cognitive and affective processes such as thoughts, emotions, motivations, and attitudes (Ma & Oxford, 2014). Since it is difficult for teachers to analyze and compare the unstructured journals or diaries, which do not provide enough prompt for learners (Mackey & Gass, 2005), structured type of reflection journals can be preferable (Amirkhanova, Ageeva, & Fakhretdinov, 2016).

Reflection can foster critical thinking skills as the process of hunting assumptions, discovering the way of thinking and acting during this process, then checking assumptions for accuracy and validity (Brookfield, 2011). Reflection journals help to scaffold the learning process, and participants who experience the utilization of learning journals, start framing their learning through thinking and recording their individual perceptions of their performance (Diaz, 2015). Sage and Sele (2015) also explored using reflective journals as a flipped classroom technique in order to increase reflective thinking, which was indicated to be effective.

Writing reflection provides better insight into learning, makes the teacher and learners focus on learning process, and increases their engagement. Assessing skill development through reflective learning journals, Cathro, O'Kane, and Gilbertson (2017) found that students appeared to be engaged deeply and were able to represent their skill level though their reflective ability across different skills. Writing reflective journals helps to develop aspects like remembering, self-encouraging, and self-realizing in completing the task. Reflection in language classrooms enhances the effectiveness and reinforces noticing to learning experiences like recast (Lee, 2013). Reflective learning helps language learners discover more about their real selves during the learning process and gives insight into the learning process to the teachers (Lee & Gyogi, 2016). Teacher's intervention and regular use of the journals in the classroom also proved to be useful for reflective writing (Mauroux, Zufferey, Rodondi, Cattaneo, Motta, & Gurtner, 2016). Reflective practice was initially developed in nursing and teacher education, and it is applied across professions. Reflection

has different depths and levels, which affect its effectiveness (Moon, 2004).

Studies on the effect of reflective journal writing have shown that it promotes academic performance. Portfolio, as a sort of writing reflection effectively enhances learning performance (Slepcevic-Zach & Stock, 2018). Nourdad and Asghari (2017) also indicated that reflective reading through reflection journal writing had a positive effect on the reading comprehension of Iranian EFL learners.

Reflection enhances metacognition, which has a supportive role in learning (Moon, 2004). "Metacognition results in critical but healthy reflection and evaluation of thinking that may result in making specific changes in how learning is managed, and in the strategies chosen for this purpose" (Anderson, 2008, p. 99). Prompts efficiently help to the use of metacognitive strategies, and therefore ,the more metacognitive strategies are detected in writing, the higher is the learners' performance (Mauroux et al., 2016). Moreover, self-reflection activities and assignment as a facilitative agent improve the students' self-regulation (Wang, Chen, Lin, & Hong, 2017). When the learning process results in enhancing metacognitive awareness, it will be more efficient in improving reading performance as Khodaverdian, Sheikh, and Vahdany (2015) revealed a strong relationship between reading comprehension and self-regulation and a high relationship between metacognitive awareness and reading comprehension.

Metacognition (mainly regulation of cognition) overlaps the self-regulation constructs considerably, but today it is also considered as just one component of self-regulation (Zimmerman & Moylan, 2009), and the definition of self-regulation consists of three other elements including regulating behavior, emotion, and motivation (Oxford, 2017). Regulation of cognition includes learners' ability to manage their own learning and facilitate the control aspect of learning (Schraw & Dennison, 1994). As Maddux (2011) has written, "Self-regulation (simplified) depends on three interacting components (Bandura, 1986, 1997; Barone et al., 1997): goals or standards of performance; self-evaluative reactions to performance; and self-efficacy beliefs" (p. 282). Learners can assess themselves, use critical thinking, regulate the learning process efficiently, engage in learning enthusiastically, and move toward autonomy through learning process, which provokes self-regulation. Autonomy might be placed in any combination of directly or indirectly observable behaviors in which control over an aspect of the learning process is displayed and can be concerned with the controlling the learning management, the cognitive processes of acquiring a second language, and the learning's content (Benson, 2007).

There are various predictors and factors to be taken into account, considering the reading's multidimensional nature including learners' motivation, metacognitive awareness, background knowledge, textual and contextual elements, and learning styles and strategies (Grabe, 2009; Grabe & Stoller, 2013). Accordingly, engaged readers are those who are "... motivated to read, strategic in their approaches to reading, knowledgeable in their construction of meaning from text, and socially interactive while reading" (Guthrie, Wigfield, & You, 2012, p. 601). It is important to focus on psychological or linguistic factors that increase learners' engagement and self-regulation in reading through a purposeful learning process, which reflects their perceptions.

Some EFL learners find reading as their classroom activities or in the exams problematic and they are unwilling to be engaged in reading in English though they need it for their educational and academic needs. They also need to enjoy their reading experiences. EFL learners should be able to assess their learning and then manifest it to be assessed by others to receive effective feedback and to be provided with appropriate learning opportunities. They should be engaged in learning process and interact with their teacher and peers, manage their learning, and design a personal plan based on their abilities, needs and interests, which can lead to a self-regulated learning. They need an opportunity to think critically about their learning and achieve

learning ownership. It is helpful for both learners and teachers to be engaged in a learning process in which learners can manifest their perceptions of the psychological and linguistic factors and affordances, indicate their difficulties, try to solve their problems, and move toward critical thinking and creative learning.

This study aimed to investigate the effect of reflective learning specifically on reading performance through purposeful semi-structured reflection writing, which focused on the reading content and learning experiences of low intermediate EFL learners. It examined enhancing and affording metacognitive awareness because metacognitive wareness is taken into account as one of the reflective learning's advantages, outcomes, and effectiveness mechanisms (Moon, 2004), which serves as a contributor to reading performance. Emotion is also central to the reflective practice but this study focus on metacognitive awareness, which involves in turn the consideration of personal emotional functioning (Moon, 2004). Reflection was applied as a means of manifesting the learners' perception of the learning experiences and opportunities. It also helped the learners to pace their learning. The results of such studies help the teachers to provide appropriate learning opportunities regarding the learners' perceptions through invoking affordance-based lesson plan (Anderson, 2015) and applying appropriate materials to meet the learners' needs and interests, and enhance their engagement and teaching effectiveness.

The present study investigated the effect of reflective learning through writing semi-structured reflection on reading performance regarding its role in enhancing learners' metacognitive awareness as an effective factor for enhancing reading performance by addressing the following questions:

1. *Does reflective learning done through writing semi-structured reflection affect Iranian EFL learners' reading performance?*
2. *Does reflective learning done through writing semi-structured reflection affect Iranian EFL learners' metacognitive awareness?*
3. *What are Iranian EFL learners' perceptions of the reflective learning's effects and affordances in terms of metacognitive awareness for enhancing reading performance?*

METHODS

Participants

Participants of the present study were 63 Iranian EFL learners attended different classes of the same grade in senior high school. They were all female and their ages ranged from 16 to 18 years old. Convenience sampling method was possible because the researcher investigated naturally formed groups (intact classes). The participants were homogenized based on the B1 Preliminary English Test (PET) results and students who scored 140- 159 were assigned into two groups, including an experimental group of 32 and a control group of 31 (low) intermediate level learners. The learners whose means were low based on the PET results participated in the study because of investigating in intact school classes and regarding moral considerations but their data were excluded and ignored in the data analysis, related to the present study.

Instruments and Materials

Reading Comprehension Test

Reading comprehension test was administered to both experimental and control group learners at pretest and posttest. The test consisted of four long texts from the reading sections of Preliminary English Test (PET). Each text ends with five multiple-choice questions that mainly examine determining the main idea and the best title or purpose of the text, scanning some details, making inferences, and identifying author intentions and tone of the passage. It was piloted using a sample of more than 40 learners other than the sample in the main study and enjoyed acceptable reliability. The internal reliability of the test (Cronbach's alpha) was .70 in the main study.

Metacognitive Awareness Inventory (MAI)

The Persian version of Metacognitive Awareness Inventory (MAI) by Schraw and

Dennison (1994), which was translated and validated for this study by administering it to more than 50 language learners other than the sample of learners who participated in the main study. Then, it was administered to both experimental and control group learners at pretest and posttest. The Persian version of Metacognitive awareness Inventory (MAI) like its English version, consists of 52 items which measure on a five-point-Likert scale and includes two main categories: knowledge of cognition and regulation of cognition, which they totally include eight subdivisions. Knowledge of cognition consists of three subdivisions including declarative, procedural, and conditional knowledge and regulation of cognition consists of five subdivisions, which include planning, information management strategies, comprehension monitoring, debugging strategies, and evaluation. The English version of the questionnaire enjoys acceptable validity and reliability. In a two-factor model, factors were reliable (i.e., $\alpha = .90$) and inter-correlated ($r = .54$)

The questionnaire was translated into Persian, it was piloted for clarity and reliability estimates, and two experts checked it validity. Internal reliability (Cronbach's alpha) of the Persian translation was .95 for the whole questionnaire, .84 for knowledge about regulation for and.93 for regulation of cognition in the pilot test and .93 for the whole questionnaire, .85 for knowledge about regulation and .90 for regulation of cognition in the main study.

Reading Materials

Reading materials contained reading texts and tasks of the learners' school textbook, parallel reading books, and reading parts of standard exams, which were used as complementary. Flesch Kincaid Calculator was also applied to calculate the readability of the texts by providing a Flesch Readability Ease score (shows the approximate educational level a person will need to be able to read a particular text easily). Moreover, it calculates the Flesch-Kincaid Grade Level (the educational level a person will need in order to understand a particular text) to help the researcher homogenize the texts based on the learners' proficiency level. The scores of the calculator fall between 0 and100, and the texts which were used in the present study, had scores nearly between 52 and 66 that is estimated to be appropriate for 10th to 12th grade (high school). Therefore, the texts were neither below both groups' reading ability nor highly above it.

Semi-structured Reflection Sheet

Learners reflected using a semi-structured reflection sheet after reading a text. Sample reflection questions in similar studies, recommendations for diary studies in research method books including Dörnyei (2007) , sample after-class reflection worksheet for the teacher (Grabe & Stoller, 2013) , reflection questions in Moon (2004) and the constructs in Metaconitive Awareness Inventory (MAI) (Schraw & Dennison, 1994) were applied to generate the reflection sheet questions. After studying the recommendations and comparing the existing sample reflection sheets, the first draft contained more than fifteen questions about how and what the learners did and learned and what they found to be effective. The questions were piloted among some EFL learners so that any repetition and ambiguous points in the questions could be revised. After piloting and revising, the numbers of questions were reduced, and the redundant ones were deleted. Two experts also checked them.

Procedure

At the beginning of the study, for determining the reading comprehension ability of both groups, a reading comprehension pretest was administered to both groups, including four long texts from the reading section of the Preliminary English Test (PET). Moreover, the Persian version of the Metacognitive Awareness Inventory (MAI) by Schraw and Dennison (1994), which had been translated and validated in this study, was administered to both groups as the pretest.

A semi-structured reflection sheet was introduced to the experimental group participants to be familiar with writing reflection, and to guide their reflection practices during the study. Both groups attended the same grade in senior high school. They

received the same instruction, including the reading texts, but the experimental group learners wrote content and experience-based reflections after reading, and control group followed their reading activities without writing reflection. As their first experience, it was asked from experimental group learners to write a reflection without giving them the semi-structured reflection sheet to see the extent to which they can assess themselves.

During the study, both groups (experimental and control) read a text each session, and did the exercises or answered the questions. Reading activities of both groups were followed by introducing reading strategies incorporated in their coursebook accompanied by teaching sentence structures and new vocabularies. The sample strategies within the textbook that were taught during the instruction mainly consisted of skimming, scanning, and highlighting main idea. Reading activities and test items mainly focused on inferential skills, determining the main idea, the best title, scanning for details, identifying referents, making inferences, identifying the authors' attitude, making predictions, and guessing the meaning of unknown words.

The experimental group performed their reading tasks and wrote reflections in semi-structured form. They also reflected on the reading tests held during the semester. The control group learners also received equivalent tests. Reflection sheet questions were revised slightly during the study and the learners were allowed to write down both in Persian and English. They wrote their reflections mainly in school and could add additional points, which had not been mentioned in their reflection sheet questions. Control group participants did the same activities and received a similar instruction as they had the same grade as the experimental group but they did not reflect on what they did.

Experimental group learners had a better opportunity to consider to text structure and practice the mentioned strategies through writing reflection. They could focus on note-taking, paraphrasing, summarizing, inferring, referring, monitoring learning, managing time, and organizing information. They considered to learning new vocabulary and grammatical or structural points related to sentence structure and sentence relations. They reflected on the reading texts, focusing on the content of the texts, their experiences during reading and any upgrading plan for future reading. It was observable that through writing a reflection most of the experimental group learners had appropriate opportunities to receive feedback, engage more actively in reading activities, look for appropriate reading resources, and mention their motivations and feelings.

This study consisted of writing regularly ten semi-structured reflections as learning journals once a week after reading sessions by the experimental group. The questions were used just to lead their reflections (not completely) and let them to be able to manage and incorporate their own structure for their reflections. They could add additional points besides the answers to the questions.

After reviewing the experimental group reflections, the researcher gave feedback and whenever the learners talked about their writing and commented or asked for help, the necessary explanation was provided. The teacher controlled and managed the time, discussions after reading and reflection writing, and sharing ideas.

The researcher collected and reviewed the learners' reflections each session to extract the influential factors and affordances incorporated and perceived by the learners. After the study that continued for 14 weeks, reading comprehension test and MAI questionnaire at the posttest were administered to both groups.

Design and Data analysis

The design of this study was multi-phase, which consisted of quantitative (quasi-experimental design) and qualitative methods. Quantitative data gathered at pre-test and post-test, was analyzed by Statistical Package for the Social Sciences (SPSS) through Independent-Samples T-Test and MANOVA to indicate the effect of reflective learning on reading performance and metacognitive awareness as a main predictor. In the qualitative phase, learners' reflections as learning journals were collected, reviewed, coded, and narrated by the

researcher in order to indicate the reflective learning's affordances in terms of metacognitive awareness for enhancing reading, which were perceived by the learners.

RESULTS

Quantitative Phase

Normality of the data was tested by computing the ratios of skewness and kurtosis and it showed normal distribution. Independent samples t-test was run to answer the first question of this study and analyze the results of reading pretest and posttest. Descriptive statistics of reading pretest showed that the mean scores of experimental and control groups were 10.25 and 9.83 respectively, which showed slight difference. There was no significant difference between experimental group (M=10.25, SD=1.62) and control group (M=9.83, SD=1.26) in reading performance; t (61) =1.11, p=.26 (p>.05). Levene's test for equality of variances showed equal error variances across groups, p>.05.

Independent samples t-test indicated that the mean score of experimental group (M=11.46) was higher than that of control group (M=10.16) in reading posttest (Table 1).

Table 1

Descriptive Statistics of Reading Posttest

	Groups	N	Mean	SD	Std. Error Mean
Reading Posttest	Experimental	32	11.46	1.99	.35
	Control	31	10.16	1.39	.25

As is shown in Table 2, Levene's test for equality of variances showed that error variance was equal across groups (p>.05) and variability in two conditions was not significantly different. The results showed a significant difference between experimental (M=11.46, SD=1.99) and control group (M=10.16, SD=1.39) in reading performance; t (61) =3, p=.004 (p<.05). The results represented a large effect size (Cohen's *d* = 0.75).

Table 2

Independent Samples t-test of Reading Posttest

		Levene's Test		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Posttest	Equal variances assumed	1.63	.20	3.00	61	.004	1.307	.435
	Equal variances not assumed			3.01	55.45	.004	1.307	.433

To answer the second question of the study, independent samples t-test was run to compare the mean differences of overall metacognitive scores between experimental and control groups. Descriptive statistics of pretest showed that the mean scores of experimental and control groups were 3.60 and 3.69 respectively and there was no significant difference between experimental group (M=3.60, SD=.52) and control group (M=3.69, SD=.38). Levene's test

for equality of variances showed equal error variances across groups, p>.05 and variability in two conditions was not significantly different.

Descriptive Statistics indicated that the mean score of experimental group (M=3.93) was higher than that of control group (M=3.77) in total metacognitive awareness posttest (Table 3).

Table 3
Descriptive Statistics of Overall Metacognitive Awareness Posttest

	Groups	N	Mean	SD	Std. Error Mean
metacognitive awareness Posttest	Experimental	32	3.93	.24	.04
	Control	31	3.77	.31	.05

As is shown in Table 4, Levene's test for equality of variances showed that error variance is equal across groups (p>.05) and variability in two conditions is not significantly different. The results showed significant difference between experimental (M=3.93, SD= .24) and control group (M=3.77, SD=.31) in Metacognitive Awareness; t (61) =2.29, p=.02 (p<.05). The results represented a medium effect size (Cohen's *d*=0.57*)*.

Table 4
Independent Samples t-test of Overall Metacognitive Awareness Posttest

		Levene's Test		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Metacognitive Awareness posttest	Equal variances assumed	.81	.37	2.29	61	.025	.161	.070
	Equal variances not assumed			2.28	57.20	.026	.161	.070

MANOVA was run to compare the mean differences of components and subcomponents of metacognitive awareness. It showed that there was no significant difference, Wilks' Lambda=.95, F (8, 54) =.31, p>.05, for two components including Knowledge of Cognition and regulation of cognition and their eight subcomponents between experimental and control groups. Levene's test showed that error variance of the constructs of metacognitive awareness is equal across groups p>.05 and there was homogeneity of variances. Tests of Between-Subjects effects also showed that there was no significant difference between experimental and control groups (p>.05) for all the constructs including the components and subcomponents of metacognitive awareness.

As the descriptive statistics of metaconitive awareness constructs in posttest shows in Table 5, experimental group had higher mean scores than control group in all the constructs.

MANOVA showed significant difference, Wilks' Lambda=.74, F (8, 54) =2.31, p<.05, for two components and their subcomponents between experimental and control groups (Table 6).

Table 5
Descriptive Statistics of Subdivisions of Metacognitive Awareness Posttest

Metacognitive Awareness	Groups	N	Mean	SD
Knowledge of Cognition	Experimental	32	3.99	.23
	Control	31	3.84	.35
Declarative	Experimental	32	4.14	.25
	Control	31	3.98	.33
Procedural	Experimental	32	3.81	.35
	Control	31	3.58	.47
Conditional	Experimental	32	4.03	.32
	Control	31	3.96	.45
Regulation of Cognition	Experimental	32	3.87	.30
	Control	31	3.69	.34
Planning	Experimental	32	3.88	.24
	Control	31	3.66	.35
Information	Experimental	32	3.98	.39
	Control	31	3.75	.42
Comprehension	Experimental	32	3.62	.38
	Control	31	3.55	.48
Debugging	Experimental	32	4.00	.50
	Control	31	3.91	.48
Evaluation	Experimental	32	3.88	.41
	Control	31	3.60	.44

Table 6
Multivariate Test of Subdivisions of Metacognitive Awareness Posttest

Test	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Wilks' Lambda	.74	2.31	8.000	54.000	.03	.25

As is shown in Table 7, Levene's test showed that error variance of the metacognitive awareness constructs is equal across groups and there was homogeneity of variances, p>.05.

Table 7
Levene's Test of Subdivisions of Metacognitive Awareness Posttest

Dependent Variables	F	df1	df2	Sig.
Knowledge of Cognition	2.63	1	61	.11
Declarative	2.51	1	61	.11
Procedural	1.15	1	61	.28
Conditional	3.20	1	61	.07
Regulation of Cognition	.030	1	61	.86
Planning	3.26	1	61	.07
Information	.38	1	61	.53
Comprehension	1.42	1	61	.23
Debugging	.45	1	61	.50
Evaluation	.01	1	61	.91

Tests of Between-Subjects effects (Table 8), showed a significant difference between the means of two groups in regulation of cognition, F (1, 61) = 4.60, p=.03 (p< .05) but for knowledge of cognition there was no significant difference between two groups, p>.05. Among the subdivisions of knowledge of cognition there was a significant difference between experimental and control groups in declarative, F (1, 61) = 4.11, p=.04 (p<.05) and procedural knowledge, F (1, 61) =4.49, p=.03(p<.05). MANOVA results also showed significant differences for three subdivisions of regulation of cognition including planning, F (1, 61) =8.66, p=.005 (p<.05), information management strategies, F (1, 61) =5.07, p=.02 (p<.05) and evaluation F (1, 61) =6.33, p=.01 (p<.05).

Table 8
Subdivisions of Metacognitive Awareness Posttest: Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Groups	**Knowledge of Cognition**	.339	1	.339	3.73	.058	.058
	Declarative	.367	1	.367	4.11	.047	.063
	Procedural	.789	1	.789	4.49	.038	.069
	Conditional	.064	1	.064	.41	.521	.007
	Regulation of Cognition	.494	1	.494	4.60	.036	.070
	Planning	.796	1	.796	8.66	.005	.124
	Information	.853	1	.853	5.07	.028	.077
	Comprehension	.081	1	.081	.425	.517	.007
	Debugging	.111	1	.111	.460	.500	.007
	Evaluation	1.171	1	1.171	6.33	.014	.094
Error	**Knowledge of Cognition**	5.530	61	.091			
	Declarative	5.441	61	.089			
	Procedural	10.694	61	.175			
	Conditional	9.296	61	.152			
	Regulation of Cognition	6.552	61	.107			
	Planning	5.603	61	.092			
	Information	10.260	61	.168			
	Comprehension	11.682	61	.192			
	Debugging	14.702	61	.241			
	Evaluation	11.266	61	.185			

Qualitative Phase

It was attempted to meet the trustworthiness of the data, considering the criteria proposed by Lincoln and Guba (1985) including credibility, transferability, dependability, and confirmability. There was prolonged engagement in the field of study for true data collection. The participants became familiar with the type of activity that they were supposed to do. Qualitative data collection was regarded as a part of learning process. The participants wrote reflection regularly as was mentioned in the procedure in order to learn to write and write to learn. The participants' reflections were collected each session and it was tried to focus on the details of the study and

the happenings in the class (creditability). The problem, the purpose of writing reflections and the setting were explained so that the readers and outsiders can recognize the major focus of the study, its scope and decide on possible transfer of the results (transferability). It has been attempted to report the learners' perception based on the learners' answers to the reflection questions as part of their learning and as the basis of interpretation which were collected and recorded and some excerpts of which have been illustrated. It was tried not to mediate in the learner's writings by giving them just the framework for writing (confirmability). Themes and categories are not limited to metacognitive awareness but it is the main focus in the present study.

The third research question dealt with the reflective learning's effects and affordances in improving metacognitive awareness for enhancing reading performance. Qualitative data analysis of the experimental group's reflections revealed the outcomes, summarized in Table 9, which include the process of reading and personal functioning. The responses to the questions were reviewed and analyzed, similar responses were categorized together, and codes were extracted. The codes were grouped and categorized. The major theme nested different categories and subcategories based on the extracted codes. The participants' perceptions, which were written mostly in Persian, have been translated into English in order to be used in this study. Each theme will be elaborated on below.

Table 9

Learners' perceptions of reflective learning affordances in terms of metacognitive awareness for reading

Theme	Categories
Affording Metacognitive awareness through reflective learning	**Planning** Providing opportunity to focus on: − time management and learning pace − the procedure for approaching the task and the strategies which should be used
	Managing information Providing opportunity to focus on: the organization of the text and its paragraphs − applying selective focus on information, classifying information and connecting ideas applying the strategies which have been efficient
	Correcting and compensating for errors Providing opportunity to: − receive suitable feedback or guidance − exchange ideas with the teacher or peers
	Evaluating comprehension Providing opportunity to: − analyze reading performance assess the learning process evaluate applying global or individual strategies
	Focusing on individual or situational factors Providing opportunity to: − think about strengths, weaknesses, difficulties, and finding solutions − think about positive or negative feelings (affective filter) and express them − create confidential and fearless practice situation

Transferring knowledge or skill
− focusing on studying habits including L1 reading habits
relating background knowledge

Planning

Participants indicated that they had difficulty in planning which includes organizing their time and pacing themselves and their learning. They had opportunity through writing reflections to think about fast, fluent, strategic, and purposeful reading. They also considered to the procedure they had applied and the procedure they have decided to utilize for approaching the task and the strategies, which should be used.

One of the participants had written in her reflection, *"I am not good at managing my reading procedure, I think about it more than before. I should improve my concentration and reading quality; writing at the end of reading helps me to do so, as I try out the techniques and strategies that I have learned and use my personal techniques to read and I spend more time for thinking about the results*". Another one had mentioned, "*I always lose time in reading tests and I need to know how I can read fast and efficiently. I try to consider to the factors that help me to extract the main points, remind, and relate them to each other quickly"*.

Managing information

Learners had enough opportunity to consider to information management. They focused on the organization of the texts and strategies to reinforce selective focus on information. They tried to apply the strategies, which were efficient and think about already known information as illustrated in the excerpts below:

First, I try to focus on the main points and then the details as I am sensitive to get all the details and sometimes this takes time. I try to use key words and topic sentences so I lose less time and remember the details well.

I have learned to read each paragraph, use some key words, and take brief notes. This way, I feel that I can classify information in my mind. I read and understood the texts but I forgot the details, reading some texts before.

Scanning and skimming in some cases help me to have a general idea of the text, comprehend the sentences, and then guess the meaning of unknown words. Using the words or sentences before or after them, helps me to guess their meaning.

Correcting and compensating errors

Writing reflection let the learners to think about and apply efficient strategies to compensate and correct their comprehension and performance errors. It provided opportunity for them to receive suitable feedback or guidance and exchange ideas with the teacher or peers as their sample responses show:

"When I did not understand some parts or important and new information, I went back to them, reread, and tried to get the meaning considering to the sentences before or after them."

"I wrote about my problems, the teacher talked to me about them, and I think that I have better relation with my teacher and I feel more relaxed when I read."

Evaluating comprehension

Through Reflection, learners evaluated their reading performance including the psychological and linguistic factors. They had opportunity to write about the texts content and their experiences after they had finished reading a text (the focus is only on metacognitive awareness in this article). They summarized and took notes after they finished their reading, which helped them to find out whether they had learned as much as they could. This let the learners to be able to assess their reading performance (a form of self-assessment):

"My concentration and reading speed have improved. I use reading strategies but still I need to improve my vocabulary and time management"

"I did not feel good reading in English before but practicing different reading texts and writing about my procedure and experiences helped me to overcome some of my reading difficulties and I read regularly with less negative sense"

Focusing on individual or situational factors

Learners could think about individual or situational determinants involved in reading process. They thought about their strengths and weaknesses and tried to find remedies for their difficulties. They were provided with opportunities to express positive or negative feelings (affective filter) toward their reading experiences and performance. This created confidential and fearless practice situation for learners as one of the participants had written, "*I lose my concentration fast; this wastes my time, taking brief notes and summarizing main points help me. I try to concentrate more as I should write something and I practice how to do that."*

Evaluating her learning, one of learners had mentioned, "*I am not a careful reader and I become mixed up in inferring main ideas of some paragraphs or the whole text".* In the following sessions she wrote, "*I could make chains between underlined information, recorded notes, extracted key words, and topic sentences to get the ideas and I considered to the instructions and questions more than before*". Another participant had written in her reflection, "*I feel less stress, enjoy reading, and I feel calm. I think I have a better plan as I practice and report my work regularly"*. Among the participants, depth and breadth of vocabularies seemed to have a dominant role in creating difficulty, which are linguistic factors. Reflective learning for reading is a process that mainly regards enhancing reading performance and helps the learners to achieve a perspective of their reading procedure.

Transferring knowledge or skill

Learners could focus on their existing reading habits in L1 and their background knowledge and some believed that L1 reading habits can help to L2 reading and even improving L2 habits may affect L1 reading:

"Previous knowledge and information is effective for me, specifically when the text is scientific or about some facts. I like texts by which I learn new interesting things"

"When I know something about the topic and the text content, it helps me to feel more ease. I liked this topic. It was new and interesting" (it was about colors)

DISCUSSION

The present study investigated the reflective learning's effectiveness through semi-structured reflection writing in improving reading performance and enhancing learners' metacognitive awareness as a main contributor to reading and its affordances for reading performance regarding metacognitive awareness.

The first research question addressed the reflective learning's effect on Iranian EFL learners' reading performance through writing semi-structured reflections. The findings indicated that there was a significant difference between the experimental and control groups in their reading performance, ($p<.05$) and the experimental group outperformed the control group. The findings are in line with the results of similar studies like Nourdad and Asghari (2017) who examined the effect of reflective reading through reflection writing and indicated its positive effect on reading comprehension of Iranian EFL learners, Khanjani, Vahdany, and Jafarigohar (2018) who showed the writing journal's significant effect on promoting reflective practice in teacher trainees, Brookfield (2011), and Wirth and Aziz (2015). It is also in line with the findings of Zulfikar and Mujiburrahman (2018) and Kim (2018). They revealed that journal writing had a positive effect on promoting reflective practice, conceptualizing views on the application of knowledge, and improving the English language skills. Reflective learning proved to have a significant effect on reading performance in this study through providing appropriate opportunities for the learners to think deeply about the texts content and reading procedure. It strengthened learners' engagement through regular semi-structured reflection writing.

Reflective learning enhances metacognition, which has a supportive role in language learning (Moon, 2004). The second research question of the present study

addressed the reflective learning's effect on Iranian EFL learners' metacognitive awareness and self-regulation through writing a semi-structured reflection, as predictive factors of reading performance. The results showed a significant difference between the experimental and control groups, ($p<.05$) again. The results of the current research agree with the studies conducted by researchers like Glava and Glava (2011) and Celik (2014) , who found that reflective writing has been effective in metacognitive awareness and self-regulation.

In this study, the experimental group showed enhancement in all constructs of metacognitive awareness though not all the constructs showed significant difference. A significant difference was indicated between the two groups in the regulation of cognition and in its three subdivisions. Regulation of cognition encompasses mainly the strategies required for self-regulation and taking responsibilities in learning process. The experimental group was better than the control group in planning, information management strategies, and evaluation. There was not any significant difference between the experimental and control groups in the knowledge of cognition, but significant difference was shown for two subdivisions of it, including declarative and procedural knowledge, which include mainly the knowledge required before information processing and problem solving or being able to use critical thinking and apply knowledge for the learning process. Learners' reflections created enough space and paced learning so that the learners could focus more on managing their reading.

These findings agree with the studies conducted by Clipa, Ignat, and Stanciu (2012) that provided a better understanding of the students' learning needs and the necessity of developing the metacognitive competencies, and Jafarigohar and Mortazavi (2013) who examined the impact of three different journal writing techniques, and indicated that journals could significantly boost learners' self-regulatory skills. It is also in line with the findings, which show learning journals are a self-regulated way of writing for elaboration and reflection on the learning content and cognitive and metacognitive strategies result in higher learning outcomes (Cazan, 2012). The learners could think about their learning, which helped them to store and retrieve information efficiently. The participants thought about their learning experiences, found the problems, and tried to solve them. They thought about improving their reading performance and tried out strategies and applicable plans.

The third research question addressed the Iranian EFL learners' perceptions of the reflective learning affordances regarding metacognitive awareness for enhancing reading performance. Reflective learning in this study afforded planning for reading, which provides focus on learning pace and the procedure for approaching the task and the strategies, which should be used. Affordances in learning opportunities may be predicted or arise during the lesson in an affordance based lesson plan compared to an objective lesson plan (Anderson, 2015) though they are mostly unpredictable. They arise from communication and interaction and then noticing or reacting to them. The learners read the texts and participated in the activities, then wrote about their learning and considered to what was effective or problematic. They focused on the strategies, content, text structure, topic and time management, and then they could share ideas and receive suitable feedback.

Learning conditions can be improved by the "optimal environment necessary for learning to take place" (Kumaravadivelu, 2003, p. 48). According to Anderson (2015) learning opportunities may mainly include cognitive and metacognitve, system and skill-related and effective learning opportunities in an affordance-based lesson plan. Reflective learning through writing reflections provided opportunity for managing information, which includes focusing on the organization of the text, applying selective focus on information, classifying information, connecting ideas, and applying the efficient strategies. The learners received suitable feedback or guidance, exchanged ideas with the teacher, and engaged in the classroom actively. Experimental group learners analyzed their reading performance and assessed their learning procedure. They

thought about their strengths, and weaknesses, tried to find solutions for their problems, and focused on their studying and reading habits including L1 reading. It helped them to achieve a better insight about their abilities and performance.

Reflective learning as a tool for intellectual adaptation provides the learners with deep thinking, which at a higher level of reflection, leads to critical thinking. Reflective learning can improve reading performance by affording the focus on reading tasks. It can affect reading performance through its benefits and mechanisms, one of which is enhancing metacognitive awareness through focusing on knowledge of cognition and regulation of cognition for solving problems and performing tasks.

However, learners' writing ability and willingness to write reflection repeatedly and their familiarity with monitoring and assessing themselves and their learning based on their real self, might have affected the participants' accurate writing. Learners' patience to answer the questionnaire's items might also have affected the results of analyses. The results of the study cannot be completely generalized beyond the mentioned population.

CONCLUSION

The need for efficient and fluent reading is prolonged both in L1and L2. Reflection writing lets the learners think deeply and regularly about their learning process. It can be a primary step in creating an internal context and providing opportunities to make the learners be aware of the learning, manifest their perception, and move toward higher-order thinking.

Reflective learning in this study created an opportunity for visualizing and verbalizing factors involved in reading comprehension through learners' purposeful self-reflection. The participants applied self-assessment and it helped them to learn how to assess their own reading performance to improve it. It was a type of self-inquiry about the interactional processes among reader, text, and context. As the results of the study showed, writing reflection enhanced metacognive awareness and increased the focus on reading content and procedure, which resulted in higher reading performance. It improved information management, which in turn resulted in enhancing reading comprehension. Reflections made it possible to focus specifically on reading correlates and perceived affordances of reflective learning for metacognitive awareness, which results in reading enhancement.

As the present study indicated, learners can write in order to learn. Reflections can provide more information about the involved factors and affordances, both psychological and linguistic ones. Reflective learning let determine students' reading needs and effective contributors to efficient reading and to enhance their reading performance by encouraging metacognition that supports learning and creating knowledge, understanding, and problem-solving and regarding the learners' emotion as Moon (2004) mentions as the outputs of reflective learning. Reflection on different aspects of reading instruction and students' reading procedure provided an opportunity for purposeful feedback and improved student-teacher relations for achieving efficient reading and appropriate situation. It revealed the learners' attitudes toward their reading experiences and the topics of interest through qualitative data, provided through analysis of reflection sheets as it has been referred to in Grabe and Stoller (2013) and gave the teacher insights into students' perceptions of their reading experiences to meet the learners' immediate reading-related needs and interests. The present study attempted to help to the EFL learners who found reading comprehension problematic or felt unwilling to be engaged in reading. A main benefit of writing about learning was creating intellectual space through pacing learning. They had opportunity to think deeply about the learning and express their ideas. They monitored their learning and focused on the factors that affected it.

Further studies can be implemented for both male and female learners at different levels of proficiency to compare the differences in the perceived effective psychological and textual factors and affordances, and their effects on

language learning. Further studies may also focus on different textual features and contextual elements. Future studies may apply different forms of reflections and prompts and investigate the effects of different mediums and affordances of mobile or computer-assisted language learning. It can be applied through e-reflections.

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