

## **Incorporation of Dynamic Assessment Models into Developing Language Awareness and Metacognitive Strategy Use in Writing Classes**

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### **Abstract**

Dynamic Assessment (DA) has become a growing trend in education in general, and language education in particular. The present mixed-methods study aimed at implementing two different models of DA known as the interventionist and the interactionist models regarding developing EFL learners' level of language awareness (LA) and metacognitive strategy use (MSU) in the process of writing instruction. The participants of the study included 60 Iranian undergraduate students majoring in English Translation Studies. Quantitative analysis of the data revealed that the participants in the experimental groups were able to gain higher levels of LA than their control group counterparts; however, both interventionist and interactionist models of DA entailed relatively similar effects. In the case of MSU, the results showed that neither the interventionist nor the interactionist models of DA of writing resulted in higher levels of MSU. Nevertheless, during the qualitative phase (i.e., interviews analysis) most of the participants in the experimental groups reported some changes in their LA and MSU as a result of DA. The results of the study can shed light on some aspects of integrating DA in English as a foreign language (EFL) education in terms of not only skill development but also cognitive and personality changes. The findings can bear lucrative insights for various practitioners ranged from classroom teachers and EFL researchers to those who are involved in strategic education.

**Keywords:** Interventionist Dynamic Assessment, Interactionist Dynamic Assessment, Language Awareness Writing Skill, Metacognitive Strategy Use

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## 1. Introduction

Assessment is identified as an inseparable part of any educational process which gives “insights about learners’ level of knowledge and ability” (McNamara, 2004, p.765). It is also regarded as an integral part of good teaching and in line with the goals of education. Testing and pedagogy, however, seem to have developed in two distinct directions with their own specializations and traditions (Poehner, 2005). In recent years, following the theoretical paradigm shift leading to the introduction of Dynamic Assessment (DA), the two fields have begun to become more unified.

DA challenges the current views and practices in language education and emphasizes the integration of instruction and assessment as a single activity. Moreover, it is regarded not only as a means of assessing the learners’ development but also as a way of improving it. In other words, as DA provides learners with mediation throughout the assessment procedure, it can bring development to the students by itself (Poehner, 2005). Therefore, it can be expected that DA have positive effects on different aspects of language learning.

Since its introduction in the field of English as a second/foreign language (ESL/EFL), DA has begun to attract attention from many researchers and practitioners (Fani & Rashtchi, 2015). Most of these studies have focused on the impact of DA on EFL/ESL learners’ overall achievement of different language skills, whereas, some other aspects of language learning have been somehow neglected. This is the main reason behind aiming the present study at investigating the possible effects of DA on Language Awareness (LA) and Metacognitive Strategy Use (MSU) as two facilitating factors in the process of language learning in an EFL context.

## 2. Literature Review

DA is rooted in the Sociocultural Theory (SCT) of higher mental functioning proposed by Lev Vygotsky (1978) and the concept of Zone of Proximal Development (ZPD) extracted from this theory. Vygotsky defines ZPD as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p.86). ZPD, in fact, seems to be Vygotsky’s proposal for understanding a child’s relative proximity to the next age level of development, while performing what he referred to as diagnostics of development (Vygotsky 1998). The main point, however, is that ZPD is Vygotsky’s approach to understanding cognitive development which rests on two important, interrelated constructs: mediation and internalization.

## 2.1. Different Models of Dynamic Assessment

Vygotsky's work has been interpreted in different ways to develop various DA procedures (Poehner, 2008) and, as a result, there currently exists a variety of approaches and methods that fall under the general concept of DA. These approaches have been mainly categorized under two groups of *interventionists* and *interactionists* (Lantolf & Poehner, 2004).

Interventionist DA tends to stay closer to psychometric concerns of many static forms of assessment and relies on standardized mediation arranged typically from implicit to more and more explicit (Thouésny, 2010). Therefore, it can produce easily quantifiable, comparable and predicting results (Poehner, 2005). Budoff's "Learning Potential Assessment" (1987) and Brown's "Graduated Prompt" approach (1985) are two of the most widely recognized models in this category. On the contrary, interactionist DA follows Vygotsky's preference for cooperative dialoging and allows for the assistance to emerge from the interaction between the examiner and the learner, and is, therefore, highly sensitive to the learner's ZPD (Poehner, 2005). Very few studies have aimed at comparing and contrasting the effects of interventionist and interactionist DA. Ahmadi Safa, Donyaie and Mohammadi (2015) investigated the effects of interventionist and interactionist DA on EFL learners' speaking proficiency and concluded that although both models led to significantly better results, the learners in the interactionist DA group outperformed the others. In the same manner, Ahmadi Safa and Beheshti (2018) examined the effects of interventionist and interactionist DA on EFL learners' listening comprehension and concluded that interactionist DA was more effective for the EFL learners' listening comprehension development than the interventionist DA.

## 2.2. Dynamic Assessment of the Writing Skill

Through the years many different approaches to teaching writing have shown up and many different ESL/EFL scholars have sought methods to interact with learner's learning. The earliest method of teaching writing is perhaps the product-oriented approach based on which writing is seen primarily about linguistic knowledge with attention focused on the appropriate use of vocabulary, syntax, and cohesive devices (Badger & White, 2000). A more recent approach is the process-oriented approach in which students are taught problem solving skills connected with writing process to realize the goal and nature of writing at each stage (Seow, 2002). There is also the genre-based approach which is based on teaching-learning cycle with three stages of modeling a text, joint construction of a text and finally independent construction of a text (Firkins, Forey, & Sengupta, 2007).

Another challenging area regarding the writing skill is how to assess second language (L2) writing. As Rezaei and Lovorn (2010) reported,

different interpretations of the scoring rubrics employed by different teachers might raise the possibility of unreliable assessment. It is also important to notice the fact that since writing instruction has moved towards process-oriented approaches in EFL classrooms throughout the world, the way in which the instructors respond to learners' writing has become a significant issue as well. Some scholars have mentioned that even summative assessment suffers from certain limitations. For instance, as Garb (2008, as cited in Xiaoxiao & Yan, 2010) indicates, traditional summative assessment tries to summarize learners' performance at some point in time, like the end of a course, but cannot offer immediate, contextualized feedback which is useful for helping instructors and learners during the learning process. As a result, the dynamic and holistic aspects of process cannot be fully met (Xiaoxiao & Yan, 2010). In this situation, DA has been seen to work as an alternative in both the instruction and assessment processes.

A number of studies have attempted to examine the application of DA in L2 writing. One of the earliest studies on DA was conducted by Aljaafreh and Lantolf in 1994. The researchers designed a regulatory scale based on which the instructor gave corrective feedback to the learners. This scale, designed from the most implicit to the most explicit mediation, has been used widely by different researchers ever since. Besides, Anton (2009) conducted a study with the aim of implementing diagnostic assessment in an advanced Spanish language program at the university level. She concludes that the exhaustive reports, which can be given about each student as a result of the analysis of the kind of mediation they need, can help to fully understand each student's areas of problem. In the Iranian context, Aghaebrahimian, Rahimirad, Ahmadi and Khalilpour Alamdari (2014) investigated the effects of DA on the writing skill of advanced Iranian EFL learners. They came up with a significant change in the essays of the participants in the experimental group. Moreover, almost all participants advocated DA for its positive effects not only on their final product but also on the process in which they engaged to produce their essays.

DA is not expected to just contribute to skill development, rather it is supposed to be related to and contribute to changes in other areas including awareness raising, cognition, learning strategies, etc. discussed as follows.

### **2.3. Dynamic Assessment and Language Awareness**

At the heart of most definitions given on LA lies the notion of conscious attention and sensitivity towards different forms and functions of language (Carter, 2003; Faiclough, 1999). According to Garcia (2009), "language awareness (LA) or knowledge about language (KAL) in teaching is used to encompass three understandings: about language, its teaching, and its learning" (p.385). The website of Language Awareness Association

defines LA as “explicit knowledge about language, and conscious perception and sensitivity in language learning, language teaching and language use” (Association for Language Awareness, n.d). Improving LA gives a clearer view of any given language to its users and can be helpful to EFL learners (Farahian & Rezaee, 2015).

It can be expected that DA may increase the levels of LA in EFL learners as it helps them notice the elements of language more closely. A number of studies have focused on the positive effects of DA on learning different language components. For instance, Barzegar and Azarizad (2013) found that DA could help EFL learners gain better mastery over different English tenses. Moreover, Malmeer and Zoghi (2014); Ahmadi and Barabadi (2014) and Daneshfar, Aliasin and Hashemi (2018) reported that DA plays an effective role on the learners’ demands of grammar. Furthermore, Ebadi and Yari (2017) concluded that DA can enhance the vocabulary knowledge among EFL learners. However, the impact of DA on language learners’ LA in an EFL context has not been under investigation to date as the literature reveals a gap in this regards.

#### **2.4. Dynamic Assessment and Metacognitive Strategy Use**

Another non-skill area supposed to be influenced by DA is the use of various strategies and nature of metacognition including metacognitive strategies (MS). MS have been defined and addressed by many different scholars such as O’Malley and Chamot (1990), Oxford (2002), and Cohen (2005; as cited in Zhang & Seepho, 2013). In essence, all definitions entail that MSs are high order executive skills that make use of knowledge of cognitive processes and constitute an attempt to regulate ones’ own learning by means of planning, monitoring, and evaluating (Zhang & Seepho, 2013). Moreover, MSs have been categorized in different models. For instance, Phakiti (2003) conceptualized MSs as involving planning, monitoring and evaluating of the learning process or in tackling a given cognitive task. There are several evidences that learners’ metacognition can directly affect the process and the outcome of their learning (Boekaerts, Pintrich, & Zeidner, 2000; Bolitho et al., 2003; Eilam & Aharon, 2003; Mokhtari & Reichard, 2002; Zimmerman & Schunk, 2001; as cited in Rahimi & Katal, 2012).

In this regards, Birjandi, Estaji and Deyhim (2013) explored the impact of DA on reading comprehension and metacognitive awareness of strategy use in Iranian high school EFL learners. They revealed that DA of reading comprehension did not lead to higher levels of MSU. On the other hand, Weisgerber (2015) investigated the role of DA in improving the oral proficiency skills of English-as-an-additional-language learners and showed a greater use of cognitive and MSU in DA. The results indicated that instances of MSU were greater in DA than in non-dynamic assessment. Therefore,

Weisgerber (2015) claimed the possibility that the DA method potentially promoted the use of MSs amongst participants.

The impact of DA on different aspects of LA and MSU in EFL context has not gained enough attention and there are still many hidden areas which ask for further research. In a bid to fill these gaps, the present study was an attempt at exploring the effects of two different models of DA on EFL learners' LA and MSU both in terms of the product and process. To this end, the study sought to answer the following questions:

1. Do DA models result in significant development of LA among Iranian EFL learners?
2. Do DA models result in significant development of MSU among Iranian EFL learners?
3. What are Iranian EFL learners' perceptions of the effects of DA models on their LA?
4. What are Iranian EFL learners' perceptions of the effects of DA models on their MSU?

### **3. Method**

#### **3.1. Participants**

The participants of this parallel mixed-methods design study (Ary, Jacobs, Sorensen, & Razavieh, 2010) included 60 (three groups of 20) undergraduate university students majoring in English Translation Studies. All participants including both male and female were native speakers of Persian and aged between 19 to 30 years old coming from a variety of social backgrounds.

The course was English Grammar and Writing for the undergraduate students of English Translation Studies. It holds four credits and is aimed at developing the students' basic grammar and writing principles of English. The classes were three hours long per session, held for 15 sessions (45 hours altogether) once a week.

##### *3.1.1. Participants Selection*

In order to select a homogenous sample of the participants in terms of language proficiency, an IELTS mock exam was administered among a pool of 81 students. Out of them 66 students scored band 4.5-5 (= B1 in Common European Framework) and 60 were selected and took part fully in the study.

In order to make sure of the homogeneity of the participants regarding LA and MSU, LAQ and the MSQIT were also administered at the beginning of the course and a one-way Analysis of Variance (one-way ANOVA) was run to compare the interventionist, interactionist and conventional groups'

means. The non-significant results of the test (Levene's  $F(2, 57) = 2.22, p = .118$ ) indicated that the assumption of homogeneity of variances was retained. Also, based on the results of ANOVA ( $F(2, 57) = .779, p = .464, \omega^2 = .007$  representing a weak effect size), it was concluded that there were no significant differences between the means of the three groups on the pretest of LA in writing and they were homogenous in terms of their LA prior to the main study.

As to the MSU, the significant results of the test (Levene's  $F(2, 57) = 3.51, p = .036$ ) indicated that the assumption of homogeneity of variances was violated. That is why instead of the one-way ANOVA results; the results of the robust tests were reported. Based on the main results of the robust test Welch and Brown-Forsythe ( $F_{\text{Welch}} = .859, P = .433$ ) and ( $F_{\text{Brown-Forsythe}} = .749, p = .479$ ), it was concluded that there were no significant differences between the means of the three groups on the pretest of MSU and they were homogenous in terms of their MSU prior to the main study.

### **3.2. Materials**

The participants were provided with pamphlets adopted from the book Complete IELTS band 5-6.5 by Brook-Hart and Jakemen (2012), focusing on the targeted IELTS tasks which the course were based on. For this research study only those sections of the book which covered academic IELTS Writing Task 2 were worked on.

### **3.3. Instruments**

#### *3.3.1. Adults English Language Awareness Questionnaire (LAQ)*

Language Awareness Questionnaire (LAQ) for adult English learners has been provided by British Council (2013). This questionnaire contains a list of language points, which often come up in course books and other published materials. The learners will show how much they know about each point by circling a number on a Likert scale from 1 (I don't know what this means) to 5 (I know this inside out, nothing new to learn).

#### *3.3.2. Metacognitive Strategies Questionnaire by Item Types (MSQIT)*

Metacognitive Strategies Questionnaire by Item Types was utilized in this study in order to measure the participants' metacognitive strategy use. The questionnaire has already been validated by Purpura (1999). The questionnaire consists of three sections: goal setting processes, planning processes and assessment processes.

#### *3.3.3. Reliability and Validity of the Questionnaires*

Cronbach's alpha reliability indices for the pretests and posttests of LA and MSU showed that reliability indices ranged from a low of .65 for pretest of LA to a high of .924 for posttest of LA. Additionally, an

exploratory factor analysis using Principle Axis Factoring (PAF) and varimax rotation methods were run to probe the underlying constructs of the pretests and posttests of LA and MSU; leading to three factor solution with an accuracy of 33.83 percent.

#### *3.3.4. Semi-structured Interviews*

In order to answer research questions three and four, a semi-structured interview was administered at the end of the course with the experimental groups. In order to make the data more organized and manageable, all the items on the LAQ were categorized in three major groups of a) characteristics of English vocabulary (countable/uncountable nouns, articles, adjectives, lexis...) b) English tenses and c) other grammatical features (reported speech, passive,...). Regarding MSU, the participants were asked to select the category (Goal Setting, Planning, Assessment) in which they believed the course had helped them improve the most and explain how.

### **3.4. Procedure**

This study followed a parallel mixed-methods design in which data are collected and analyzed separately but simultaneously (Ary, Jacobs, Sorensen, & Razavieh, 2010). In parallel designs, each data set leads to its own set of inferences (Ary, Jacobs, Sorensen, & Razavieh, 2010). From the quantitative aspect, a control group pretest-posttest quasi-experimental design and for the qualitative part, a basic qualitative research design (basic interpretive study) was adopted (Ary, Jacobs, Sorensen, & Razavieh, 2010).

#### *3.4.1. The Mediation*

All groups practiced samples of similar tasks (IELTS writing Task 2); however, for the control group conventional treatment was given, while the experimental groups received mediation based on the models of DA for ten sessions as follows.

**The Interventionist DA Group.** In this group the practitioner/researcher used prefabricated prompts following the model proposed by Aljaafreh and Lantolf (1994). In this regulatory scale, a level of mediation from most implicit (level 0) to most explicit (level 12) was given to the learner. However, since this regulatory scale was designed for a one-on-one mediation, it was altered for the use in group writing classes based on the model used by Aghaebrahimian et al. (2014). Therefore, after each learner handed in the first draft of her/his essay, it was marked and given back to her/him. If the essay contained no errors, the learner did not have to revise the draft; otherwise, error was underlined and delivered to the participant without any hints. Each participant received her/his paper with the marked errors and then needed to make required adjustments according to her/his own idea about the source of error and resubmit the essay.



In the second submission, if the participant was able to correct the underlined errors, she/he was told so and did not have to continue the revision. Otherwise, in the second marking of the essay the errors were marked again by underlining them in addition to the former line already left from the previous rating. The source of difficulty was also implicitly stated in this phase.

Again if the participant in third submission could modify her/his writing, the revision would stop; otherwise, the paper was marked for the third time with an explicit explanation on the source of error. In the last step, if the learner failed to do so, an explanatory corrective feedback was given.

**The Interactionist DA Group.** The treatment given to the interactionist DA group took the suggestions advocated by Poehner (2005) into considerations. The model was inspired by Feuerstein's Instrumental Enrichment (1979) and encouraging mediated learning.

The mediation procedure was very similar to the one exercised with the interventionist group. The participants wrote an essay on a given topic and handed it in to the instructor. The instructor then underlined the erroneous parts of their writings and gave them back to participants to be self-corrected. This process was repeated for three times and the final step was for the instructor to give the correct form along with a full explanatory corrective feedback. The mediation moved on from implicit to more explicit forms with prompts emerging from the interaction between the mediator and the learners. Most of the mediation occurred in the form of writing except for some cases in which the mediator felt the necessity to discuss the errors with the learners. This happened only once with each participant during the course. However, oral mediation did not happen in one session for all participants and each session a few participants were selected to conduct an oral mediation on their writing errors.

#### *3.4.2. Quantitative Data Collection*

At the end of the course, the same LAQ and the MSQIT were re-administered for all three groups in order to measure their LA and MSU in the light of the DA implementations.

#### *3.4.3. Qualitative Data Collection*

One week after the re-administration of the LAQ and MSQIT, the experimental groups were individually interviewed (See 3.2.4 for the detailed questions). The interviews were conducted in English to the extent it was possible as whenever required, both the instructor and participants resorted to Persian.

**Trustworthiness.** Trustworthiness as an essential aspect of qualitative studies (Merriam, 1998) and a substitution or an alternative to the concepts of

'validity' and 'reliability' in the quantitative studies, is normally measured and ensured, as Lincoln and Guba (1985) propose, through four criteria: 'credibility', 'transferability', 'dependability', and 'conformability'. As far as the credibility of this study was concerned, triangulation and member checking (Creswell, 2012) were followed. First, the data collected through the semi-structured interviews had already been collected through the questionnaire. In other words, these two data sets are mutually supportive. Meanwhile, 'prolonged engagement' strategy suggested by Lincoln and Guba (1985), was implemented in this study as the researchers and the study participants were closely cooperating such that both developed a better understanding of the context and enjoyed intimate ties. As to the transferability, as a means of applying the findings of a study into another context, the study provides the readers with sufficient contextual information on the context of the study so that the target readers can have a clear picture of the possibility of the replication.

To ensure dependability, the transcribed interviews and the subcategories and categories extracted were double checked with some experts including the supervisor and advisor of the study. Moreover, as all processes of this study are described in details, further verification by interested researchers, another index of dependability focusing on "develop a thorough understanding of the methods and their effectiveness" (Shenton, 2004, p. 71), is also met. Last but not the least, conformability could also be achieved through techniques like audit trail, reflexive journal and triangulation (Lincoln & Guba, 1985). In a bid to ensure it, the role of triangulation on one hand, and following various transparent processes, data collection, analysis and interpretation, and comparison with other researchers' findings which might confirm the researcher's interpretations on the other, were concentrated.

### **3.5. Data Analysis**

After going through the procedure of calculating the scores of the questionnaires, the results were analyzed statistically by the help of Statistical Package for the Social Sciences (SPSS) in order to answer the quantitative research questions. Moreover, the end-of-course interviews were recorded, transcribed and coded for further qualitative analysis.

## **4. Results and Discussion**

### **4.1. Results**

Since the study enjoyed a mixed-methods design, the data were analyzed in two phases as follows:

4.1.1. Quantitative Phase

**Testing Normality of Data.** Before running the statistical analysis, the researchers examined the four main normality assumptions; that is, the normality of the distribution of the scores, the homogeneity of the variances of the groups, the independence of observations, and the continuity of data (Field, 2009; Hatch & Lazaraton, 1991). The normality of the data was tested by computing the ratios of skewness and kurtosis over their standard errors. Since the absolute values of the ratios were lower than 1.96, it can be claimed that the assumption of normality was retained.

**Testing Null Hypothesis One.** A one-way ANOVA was run to compare the three groups’ means on the posttest of LA in order to probe null-hypothesis 1. The results of the test (Levene’s  $F(2, 57) = .99, P = .377$ ) indicated that the assumption of homogeneity of variances was met.

Table 1 displays the descriptive statistics for the three groups on the posttest of LA. The results indicated that the interventionist group ( $M = 89.80, SD = 12.49$ ) had the highest mean on the posttest of LA, followed by the interactionist ( $M = 87.30, SD = 16.65$ ), and conventional ( $M = 66.80, SD = 12.07$ ) groups.

Table 1

*Descriptive Statistics; Posttest of LA by Groups*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Conventional	20	66.80	12.077	2.700	61.15	72.45	47	91
Interactionist	20	87.30	16.655	3.724	79.51	95.09	50	108
Interventionist	20	89.80	12.455	2.785	83.97	95.63	66	107
Total	60	81.30	17.153	2.214	76.87	85.73	47	108

Table 2 displays the main results of the one-way ANOVA. Based on these results ( $F(2, 57) = 16.52, p = .000, \omega^2 = .341$  representing a large effect size), it can be concluded that there were significant differences between the means of the three groups on the posttest of LA. Thus, the first null hypothesis was rejected.

Table 2

*One-Way ANOVA; Posttest of LA by Groups*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6370.000	2	3185.000	16.521	.000
Within Groups	10988.600	57	192.782		
Total	17358.600	59			

Additionally, the post-hoc Scheffe’s tests (Table 3) show that;

- The interventionist group (M = 89.80) had a significantly higher mean on the posttest of LA than the conventional group (M = 66.80) (Mean Difference = 23, p = .000).
- The interactionist group (M = 87.30) had a significantly higher mean on the posttest of LA than the conventional group (M = 66.80) (Mean Difference = 20.50, p = .000).

Table 3

*Scheffe’s Post-Hoc Comparisons Tests; Posttest of LA by Groups*

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Post-LA-WR	Interventionist	Control	23.000*	4.391	.000	11.96	34.04
		Interactionist	2.500	4.391	.851	-8.54	13.54
	Interactionist	Control	20.500*	4.391	.000	9.46	31.54

\*. The mean difference is significant at the 0.05 level.

There was no statistically significant difference between interventionist (M = 89.80) and interactionist (M = 87.30) groups’ means on the posttest of LA writing (Mean Difference = 2.50, p = .851).

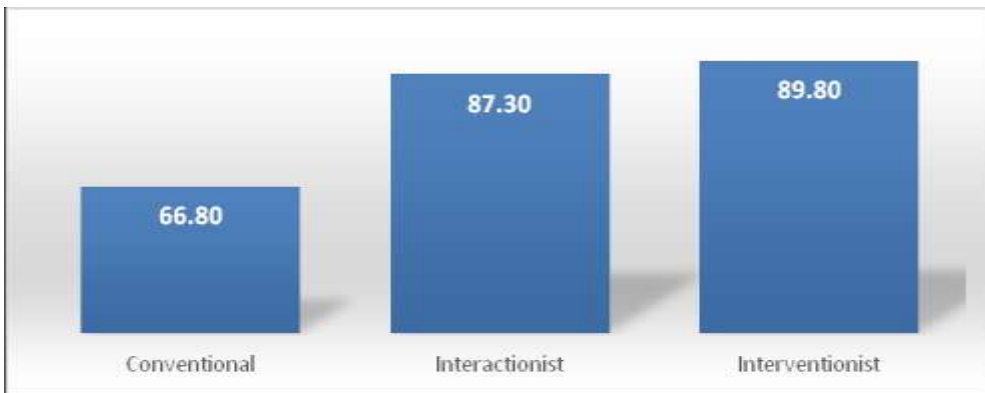


Figure 1. Means on Posttest of LA by Groups

**Testing Null-Hypothesis Two.** Similarly, a one-way ANOVA was run to compare the three groups’ means on the posttest of MSU in order to probe null-hypothesis 2. The significant results of the Levene's test (F (2, 57) = 3.40, p = .040) indicated that the assumption of homogeneity of variances was violated. Thus, the robust tests of Welch and Brown-Forsythe (Table 5) were reported.

Table 4 shows the descriptive statistics for the three groups on the posttest of MSU. The results indicated that the interventionist group (M = 136.75, SD = 28.40) had the highest mean on posttest of MSU. This was followed by the interactionist (M = 135.70, SD = 24.70) and conventional (M = 120.05, SD = 15.65) groups.

Table 4

*Descriptive Statistics; Posttest of MSU by Groups*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Conventional	20	120.05	15.656	3.501	112.72	127.38	89	146
Interactionist	20	135.70	24.709	5.525	124.14	147.26	94	175
Interventionist	20	136.75	28.401	6.351	123.46	150.04	80	175
Total	60	130.83	24.385	3.148	124.53	137.13	80	175

Table 5 shows the main results of the robust test Welch and Brown-Forsythe. The results of the two tests were contradictory. The Welch test ( $F_{\text{Welch}} = 4.30, p = .021$ ) indicated significant differences between the means of the three groups on the posttest of MSU, while the Brown-Forsythe tests and ( $F_{\text{Brown-Forsythe}} = 3.15, P = .051$ ) indicated no significant differences between the means of the three groups. Thus, the null-hypothesis 2 was retained because, as displayed in Table 6, the results of the post-hoc Scheffe’s tests did not show any significant differences between any two pairs of means.

Table 5

*Robust Tests; Posttest of Metacognitive Strategy Use in Writing by Groups*

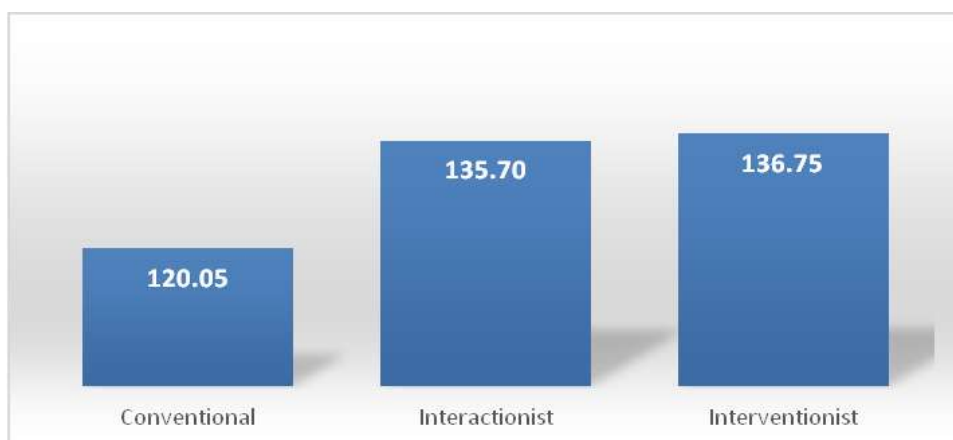
		Statistic	df1	df2	Sig.
Post-MSU-WR	Welch	4.302	2	35.406	.021
	Brown-Forsythe	3.158	2	48.455	.051

Table 6 displays the results of the post-hoc Scheffe’s tests on posttest of MSU. The results indicated no significant differences between the three groups’ means.

Table 6

*Scheffe's Post-Hoc Comparisons Tests; Posttest of MSU in Writing by Groups*

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Interventionist	Control	16.700	7.444	.090	-2.01	35.41
	Interactionist	1.050	7.444	.990	-17.66	19.76
Interactionist	Control	15.650	7.444	.119	-3.06	34.36

*Figure 2. Means on Posttest of MSU by Groups*

#### 4.1.2. Qualitative Phase

**Addressing Research Question Three.** In order to give a clearer answer to the research question which asks for the comparison between the interventionist and interactionist DAs, each of the experimental group's results are presented in a separated section.

**The Interventionist Group.** At the end of the DA sessions, the experimental groups were interviewed regarding their experience with DA. All the items on the LA questionnaire were categorized in three major groups and participants were asked which category they thought they had made the most progress in during the course;

- a) Characteristics of English vocabulary (countable/uncountable nouns, articles, adjectives, lexis...)?
- b) English tenses?
- c) Other grammatical features (reported speech, passive...)

Table 7

*Results of LA Interviews with the Interventionist Group*

	Total number of participants	Characteristics of English vocabulary	Tenses	Other grammatical features
Number of participants	20	8	12	9
Percentage of participants	100%	40%	60%	45%

As table 7 shows, most of the participants mentioned that the course had helped them improve their knowledge of English tenses. The participants believed that the mediation process had made them more sensitive to different tenses and helped them to pay more attention to the tenses they needed to use. This was followed by other grammatical features, some participants mentioned different areas; these areas included noun phrases and adverbs of frequency.

≠ “When I write I sometimes don’t pay enough attention to tense and grammar, but when the teacher underlined my errors, I thought about them and could correct them in most cases. In some cases, I was surprised why I had made that mistake because I knew the correct form...”

≠ “...Using the correct tense is a major problem among our students. When they were led to the correct form instead of being given the correct grammar after their first attempt, it worked definitely better for many of us...”

Regarding Vocabulary, 40% of the participants believed that DA had helped them recall the new vocabulary and phrases better. This was followed by many participants mentioning some particular areas including adjectives and adverbs. Additionally, the participants seemed very interested in the mediation process and had enjoyed being given the opportunity to self-correct their errors:

≠ “In many cases, the implicit help from the teacher made me look back at my errors with more attention...”

≠ “I didn’t used to check the spelling of the words if I was not sure of it. I thought I was writing all the words correctly but when the teacher underlined my errors I realized I had to pay more attention.”

**The Interactionist Group.** The results from the interviews with the interactionist group (for interview questions see 2.3.4) are summarized in

table 8. Some of the participants mentioned only one of the categories while some other mentioned two or even three (all).

Table 8

*Results of LA Interviews with the Interactionist Group.*

	Total number of participants	Characteristics of English vocabulary	Tenses	Other grammatical features
Number of participants	20	10	13	11
Percentage of participants	100%	50%	65%	55%

As table 8 shows most of the participants (65%) stated that the mediation provided during the DA sessions had helped them increase their knowledge of different English tenses. This was followed by other grammatical features (55%):

≠“I like to be given the chance to rethink about my sentence because maybe I can correct it by myself!”

≠“When I looked at my mistakes about grammar, I had to think about them again. I was surprised because I could correct most of them. I just needed a little hint.”

In general the participants believed that DA could help them improve in grammar. Many participants indicated that DA gave them the chance to pay more attention to different grammatical features. Also, they mentioned that the step by step mediation helped them remember different grammatical structures.

**Addressing Research Question Four.** In this section, the fourth research question has been addressed.

**The Interventionist Group.** Through the semi-structured interviews at the end of the course the participants were asked about different categories of MSU. Results of the interviews are summarized in Table 9. Some of the participants mentioned one of the categories of MSQIT, while some others mentioned two or even all the categories.

As it can be seen in Table 9, majority of the participants (70%) stated that interventionist DA had helped them improve their Planning Processes. However, some of the participants mentioned the fact that the course did not have any specific effect on their Planning Processes. They believed that planning their learning was very difficult for them and they had not gained enough skills to do that.



Table 9

*Results of MSU Interview with the Interventionist Group*

	Total number of participants	Goal Setting Processes	Planning Processes	Assessment Processes
Number of participants	20	2	14	6
Percentage of participants	100%	10%	70%	30%

The next highly ranked category by the participants was Assessment Processes (30%). They asserted that after the course they started thinking more about their learning and their problems. Nevertheless, many of the participants did not believe that the course had any impact on their Assessment Processes. They said they do not usually think about what they had said or how they could say that better.

All in all, DA did not seem to have any specific impact on Goal Setting and Assessment Processes categories of MSU of the participants. In many cases they answered the questions with words like “sometimes”, “maybe”, “I’m not sure” or “not usually”, which indicate that they could not say for sure if the course had helped them improve different MSU.

**The Interactionist Group.** The result of the interview with the interactionist group is summarized in Table 10. Some of the participants mentioned one of the categories, while some others mentioned two or even all the categories.

Table 10

*Results of MSU Interview with the Interactionist Group*

	Total number of participants	Goal Setting Processes	Planning Processes	Assessment Processes
Number of participants	20	6	12	8
Percentage of participants	100%	30%	60%	40%

The majority of participants (60%) claimed to use Planning Processes more than the other categories of MSQIT. They also stated that during the DA sessions they were motivated to make more plans for their learning. This became apparent in the writing tasks as the participants became noticeably more organized in their writing. The next highly selected processes were the Assessment Processes (40%). Here are some of their original words:

≠ “I learned to try to understand the purpose of the task.”

≠ “Before I start writing I think about whether I know the correct grammar to express myself ...”

And finally, the Goal setting Processes were rated by 30% of the participants. The participants who selected these processes said they usually set goals for their learning. However, it cannot be stated whether they had learned this skill as a result of DA for sure. Here are some of the participants' ideas:

≠ “ All the time, the night before exam I felt so stressed but now at the beginning of each month I set my goals and have a plan for them. This has helped me to feel less stressed...”

≠ “...I learned to choose goals for myself...”

All in all, the comparison of the results from the interviews with the interventionist and the interactionist groups reveals that:

- *Both groups chose Planning Processes as the most highly ranked category.*
- *In both groups Assessment Processes were placed in the second position.*
- *The lowest rated category in both groups was Goal Setting Processes.*

It can be, therefore, concluded that the participants in both the interventionist and the interactionist experimental groups rated the different categories of MSQIT in the same manner but with slightly different percentages. Nevertheless, it cannot be strongly claimed that these results are a direct impact of interventionist and interactionist DA on the participants' MSU.

## **4.2. Discussion**

Research questions one and three explored the possible effects of interventionist and interactionist DA on EFL learners' LA from quantitative and qualitative aspects. As a result of the quantitative analysis of the data, it was revealed that there was a significant difference between the effects of different models of DA (interventionist and interactionist) and conventional assessment of the writing skill in developing the LA of Iranian EFL learners. These results are consistent with the results of previous studies conducted by Ahmadi Safa, Donyaie and Mohammadi (2015) on EFL learners' listening skill and Ahmadi Safa and Beheshti (2018) on the speaking skill which indicated that both the interventionist and interactionist models of DA had significantly positive effects on the learners' overall achievements.

Moreover, in the present study, data analyses did not show any significant difference between the interventionist and interactionist groups' means on the posttest of LA, which convey the fact that both these models can be equally effective in developing EFL learners' level of LA. Whereas, the studies conducted by Ahmadi Safa et al. (2015) and Ahmadi Safa and Beheshti (2018) showed that interactionist DA was more effective than interventionist DA in improving EFL learners listening and speaking skills respectively and the participants in interactionist groups, in both studies, outperformed the ones in interventionist groups.

The obtained results regarding the positive effects of DA on LA in the present study can be attributed to the fact that the learners in experimental classes were given the chance for self-correction in the process of mediation. This might have contributed to the development of more conscious attention and sensitivity to different properties of language (Carter, 2003). However, given the scarcity of related studies focusing on LA and DA, the results cannot be compared or contrasted with other studies.

Moreover, the qualitative phase focused on investigating the participants' perceptions whereby it was revealed that most of the experimental groups' participants ranked their knowledge of English tenses to be highly affected by the DA procedures in both the interventionist and interactionist groups. Poehner (2005) also reported that in his study interactionist DA helped his learners gain higher control over French tenses. The results are comparable to the findings of Barzegar and Azarizad (2013) who investigated the effect of DA on EFL learners' control over different tenses and reported that at the end of the course the experimental group outperformed the control group as a result of administering DA as the midterm exam. In the same manner, Malmeer and Zoghi (2014) explored the impact of DA on EFL learners' grammar skill and reported that DA did have a significant impact on the improvement of grammar skill among both teenager and adult EFL learners. The results are also parallel to the works of Daneshfar, Aliasin and Hashemi (2018) and Ahmadi and Barabadi (2014) on the positive effects of DA on EFL learners' grammar skills.

The second research question compared the effects of DA models and conventional assessment on enhancing EFL learners' MSU. The results revealed that neither interventionist nor interactionist models of DA resulted in higher levels of MSU in Iranian EFL learners. The results are comparable with those of Birjandi, Estaji and Deyhim (2013) who explored the impact of DA on metacognitive awareness of strategy use in Iranian high school EFL learners and concluded that DA of reading comprehension did not lead to higher levels of MSU as compared to static reading assessment in high school students. The obtained results in the present study can be due to the fact that MSs were not directly presented to the learners throughout the course.

Therefore, since the students were not given explicit instruction on MSU, at the end of the course when they filled out the MSQIT, they might not have been aware of the strategies they used themselves. Another possible factor could be the limitation of time. As Birjandi et al. (2013) state, within the classroom context in which time is limited, DA may not be sufficient for developing the learners' metacognitive awareness of strategy use and other forms of assistance should be put into place to allow for higher metacognitive awareness. However, the results are contradictory to those reported by Weisgerber (2015) which detect a greater use of cognitive and metacognitive strategy use in the analysis of the participants' strategic behaviors during DA. One possible reason for this mismatch could be the use of video-stimulated recall in Weisgerber's work. This method could have helped the learners remember the strategies they had used without being aware of them. In the present study, however, due to the large number of participants such analysis was not possible.

The qualitative phase showed that in both the interventionist and interactionist groups Planning Processes were selected as the most highly ranked category possibly due to the fact that for the writing tasks they needed to plan their work prior to conducting it. Assessment Processes stood in the second position but the Goal Setting Processes were ranked the last in both groups. The obtained results could be explained based on the fact that Planning Processes were the most necessary processes for the learners in conducting the assigned tasks during the course and the posttests. However, the overall perception of participants regarding MSU in the final interviews was rather vague and uncertain, some of the participants even mentioned that it is very hard to say whether this course had affected MSU in them. The reason behind these might be lack of participants' awareness about MSs which did not allow them to assess their own improvement on different categories of MSQIT.

## **5. Conclusion and Implications**

In recent years the concept of DA has become an area of interest for many researchers in the field of SL/FL assessment. Nevertheless, most of these studies have primarily focused on language skills and no other facilitating factors in the process of language education. This has been the main rationale for the present study to investigate the possible effects of two different models of DA known as the interventionist and the interactionist models (Lantolf & Poehner, 2004) on EFL learners' LA and MSU. In order to explore the topic from different angles, the study took a parallel mixed-methods design (Ary, Jacobs, Sorensen, & Razavieh, 2010) in which the quantitative and qualitative data were collected simultaneously. Both

experimental groups received DA type-based mediation while the control group was exposed to the conventional methods of teaching and testing.

As a result of quantitative analysis of the data, it was concluded that both the interventionist and the interactionist models of DA of the writing skill can be equally effective in developing EFL learners' level of LA. The findings can suggest that DA should be regarded as more than just an assessment approach; it can be a paradigm shift whereby instruction and assessment are reintegrated as a single pedagogical activity (Poehner, 2005). Qualitatively speaking, during the final interviews when participants were asked which area they believed they had made the most progress in, most of the participants in both experimental groups mentioned that the course had helped them improve their knowledge of different English tenses and other grammatical features. The participants also mentioned that a kind of assessment in which the learners were given the chance to rethink about their errors and receive mediation was more effective than when the participants were not given any feedback from the instructor or were simply corrected on the spot. The results of this study suggest the need for further research regarding LA and DA both qualitatively and quantitatively. One of the possible areas in this field can be how meditational moves in DA might be tailored to address different language components and raise learners' awareness of the so called components.

Moreover, to explore the impact of DA on MSU, data were collected through MSQIT questionnaires and semi-structured interviews. Quantitative analysis of the data revealed that neither interventionist nor interactionist models of DA resulted in higher levels of MSU among Iranian EFL learners. Furthermore, the results from the interviews illustrated that in both the interventionist and the interactionist groups the participants chose Planning Processes as the most highly ranked category. One of the main reasons behind these results, as Birjandi et al. (2013) state, may be the limitation of time because as Poehner (2005) explains, it cannot be expected that DA will miraculously increase the learners' abilities in a short period of time. Therefore, it is suggested that further studies be conducted in this field specifying longer periods of time. Also similar studies can utilize other data collecting instruments which might help gain clearer image of the learners' use of MSs, such as stimulus recall. In the present study this means of data collection could not be utilized due to the large number of students and limitations of time, nevertheless, future research can investigate the impact of DA on MSU using stimulus recall.

The findings of this study can have implications for teachers and practitioners in the field of EFL who wish to incorporate DA as a part of their assessment or instruction. Additionally, the study made an attempt at providing the reader with quite thorough explanations on the difference

between the interventionist and interactionist approaches to DA so that one can gain an image of how these models work as well as their effectiveness and challenges. Nevertheless, if DA is to find its way in EFL education, further research studies are needed to address the shortcomings of this study. It is hoped that the findings of this study can pave the way for further investigations in this field.

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