On the impact of online interactionist vs. interventionist dynamic assessment on Iranian EFL learners' writing performance

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ABSTRACT
This paper reports the results of a study aiming to investigate the effects of interactionist and interventionist dynamic assessment (DA) on learners' writing performance. To do so, 63 upper-intermediate EFL learners were selected as the study participants. A writing pretest was administered to ensure the homogeneity of the participants and determine their level of proficiency prior to treatment. In the online interactionist DA group, the researchers implemented the treatment based on the 'Dynamic Mediation Process' proposed by Elliott (2002) and Xiaoxiao and Yan (2010). The framework comprised topic-choice, idea-generation, structuring and macro-revising stages. In doing so, the pre-task phase was conducted, followed by providing the mediation and performing post-task. In the interventionist DA group, Lantolf and Poehner's (2011) framework was followed. Based on this framework, the learners' erroneous language chunks were treated through the teacher's underlining the error, putting a question mark, circling it, or posing a written question concerning the problematic part. Alternatively, the teacher would point out the incorrect part and offer two options for the learners to choose from. At the end, a writing posttest was given to all groups to evaluate their writing performance after treatment. As the study findings helped reveal, both interactionist and interventionist DA types improved learners' writing performance. In addition, the comparison of the posttest scores indicated that the interactionist DA group participants even outperformed the interventionist ones on the writing posttest. The implications of the findings are discussed throughout the paper.

Keywords: Argumentative writing; interactionist dynamic assessment; interventionist dynamic assessment; virtual learning environment

INTRODUCTION
Writing plays a seminal role in achieving success in the field of English as a Foreign Language (EFL) as well as in other academic disciplines. However, due to its peculiar nature which qualifies it as a demanding skill to acquire, most researchers (e.g., Alavinia & Hassanlou, 2014; Calkins, 1994; Modirkhameneh, et al. 2018; Marten, et al., 2005) are of the view that its teaching process is also a complex and unwieldy one. Zimmerman and Risemberg (1997) attribute the poor writing performance of EFL learners to the inefficient methods administered by their instructors.

Being a productive skill, writing is a significant determiner for an individual's ability for self-expression, and hence enhancing the writing ability can lead to better performance and assist learners to express the ideas in more fluent and appropriate ways and learn to use the words and rules better (Lee, 2003). Researchers (e.g., Ellis, 2008; Heidari, 2019; Lantolf & Poehner, 2014) affirm that the difficulty of learning writing can be partly tackled by applying new techniques, methods

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and approaches of teaching and assessing writing. This reappraisal, as they aver, must occur not only in terms of choosing suitable teaching strategies, but also in opting for proper assessment techniques for writing.

Appropriate assessment techniques, from this novel perspective, are the ones focusing on the whole process of writing and looking for smooth progress of learners throughout the whole journey. As regards the appropriacy of writing assessment, Lussier and Swanson (2005) refer to the focal role proper assessment can play in providing the right sort of feedback for writing enhancement. It must be borne in mind that according to many educational methodologies, assessment has always been taken as a strong and effective part of teaching system. Educational researchers (e.g., Colley, 2008; Pinter, 2009; Rixon, 2000), hence, maintain that inappropriate assessment strategies can adversely affect the instructors' endeavors for augmenting teaching efficacy.

One important measure to be taken is moving away from traditional assessment techniques which regarded teaching and testing as separate elements and failed to see writing as a process which develops throughout the time. Chapelle and Brindley (2002) state that in 1970s, "assessment tended to take the form of proficiency testing, based on general ability constructs, which was largely unconnected to the curriculum" (p. 284). Hence, to foster learners' writing skill one can opt for alternative modes of assessment including dynamic assessment (DA). The renewed attention given to the interplay between assessment and teaching deriving from these new assessment techniques has paved the way for fundamental changes in the concepts, ideology and practices of assessment. Poehner (2008), for instance, maintains that dynamic assessment can help teachers effectively deal with learners' potential abilities.

Informed by the difficulty of gaining mastery in writing and attempting to aid EFL learners to enhance their writing skill, the researchers in the current study utilized two modes of online dynamic assessment, i.e. interventionist and interactionist techniques, aiming to find out which mode of DA can prove to be more efficacious. Though a number of researchers (e.g., Alavinia, et al. 2014; Köroğlu, 2019; Kushki, et al. 2022; Rahmani, et al. 2020; Rassaei, 2023; Safa & Beheshti, 2018) have already delved into this area and probed the efficacy of different types of DA, as well as scaffolding, for learning enhancement, it seems that scant research has been done on the influence of interventionist and interactionist DA on Iranian EFL learners' writing enhancement, particularly when the context of language schools is concerned. Furthermore, the implementation of DA in the virtual learning environment and the integration of technology into the process of DA are the other principal concerns

attended to in the current study, which can be regarded as the other major novelty aspect of the research at hand. It is hoped that the findings of the current research will provide useful implications for teachers, equipping them with better means of assessing and enhancing their learners' writing skill.

Dynamic Assessment: Theoretical Perspectives
Traditional psychometric testing has a number of advantages, including impartiality when comparing learners. However, because student performance is judged statistically, no adjustments or interventions are permitted during the assessment. In addition, traditional static tests have the problem of not taking non-intellectual aspects such as self-regulation or perceptions of competence into account. As a result, researchers have to explore a broader viewpoint in order to account for psychological and cognitive aspects. As Poehner (2008) highlighted, DA is opposed to the widely held belief that individuals must be tested in isolation in order to acquire pure measures of ability, and it challenges such beliefs by arguing that assessment and teaching should be completely integrated rather than separated. According to Lidz and Gindis (2003, p. 99) "The integration of instruction and assessment happens in the form of intervention embedded within the assessment procedure in order to scrutinize individuals' abilities and help them increase their self-regulation in future moves." Furthermore, elaborating on DA, Douglas (2010) explained that "assessing learner individually and on the basis of his previous knowledge is not enough and the learner needs to be assessed for his future capabilities which will be unmasked with the help of teacher's mediation" (p. 79). To put it another way, DA is an evaluation of a learner's current abilities as well as his/her learning potential. According to Barjesteh and Niknezhad (2013), the major focus of DA is on the education process rather than the learning results, and it considers the examiner's engagement in the procedure. Dynamic assessment, in their opinion, entails assisting learners in realizing their full potential by recognizing their strengths and challenges, which may be accomplished by prompting, cueing, or mediating within the exam.

DA was mostly employed in face-to-face circumstances. However, researchers have lately discovered that alternative methods may be used for mediation, such as Nirmalakhandan (2013), who used a computerized dynamic assessment application to improve undergraduate fluid mechanics students' problem-solving abilities. Another research on the impact of computerized DA of L2 reading comprehension on high and low achievers was undertaken by Pishghadam, et al. (2011). The findings demonstrated that computerized dynamic assessment assists learners to

improve their performance in terms of reading comprehension.

According to Davin (2011), another objective of DA is to make suggestions based on developmental potential that isn't indicated by regular non-dynamic exams. Participants in DA are given instructions on how to execute certain activities and are given mediated guidance on how to master them. In other words, the goal of DA is to examine a learner's latent potential or reserve capacity in a dynamic, process-oriented, and adaptable manner, with teaching and feedback providing aid or mediation for cognitive skill acquisition (Sternberg & Grigorenko, 2002). The logic behind this style of evaluation is that if a student can improve on his/her original performance when mediated, then he/she has the capacity to achieve more (Smit, 2010).

Empirical Research on DA
Successive to presenting a concise theoretical background on DA, the researchers now turn to some relevant empirical research addressing DA and its two major types, i.e., interactionist and interventionist perspectives. Alavi, et al. (2012) utilized group dynamic assessment (GDA) for listening comprehension to determine the mediational approaches used by a mediator during GDA interactions with a group of L2 learners. Furthermore, the researchers attempted to see how GDA-based teaching affected L2 listeners' co-construction of knowledge. The study demonstrated that collective scaffolding could prepare the way for distributed help among students inside the classroom's social environment, in which secondary and main interactants benefit from each other's accomplishments.

Through the technique of dynamic assessment in cake format, Seyed Erfani and Agha Ebrahimiyan (2013) studied the influence of the web on the writing abilities of Iranian EFL learners. Twenty upper-intermediate EFL students were randomly chosen to participate in an eight-session writing lesson. The participants were divided into two groups (control and experimental), each with 10 members. In the experimental group, intervention via DA was carried out online through a blog, whereas the control group's dynamic assessment was conducted using the typical paper-and-pencil technique. The findings revealed that using blogs not only enhanced the learners' writing abilities, but also made the process of assessing their writing easier.

In another study, Safa and Beheshti (2018) investigated the influence of interactionist and interventionist strategies to GDA on the improvement of listening comprehension of Iranian intermediate EFL learners. To conduct the study, 90 intermediate EFL students were divided into experimental and control groups. A shortened version of a sample TOEFL Junior Standard Test was given to the participants to confirm that their performance levels were similar. The pre- and post-tests were adopted from the TOEFL Junior Standard Test's listening comprehension section. The participants in the main group were then divided into five four-member subgroups and two five-member subgroups. In the first experimental group, the researchers utilized interactionist techniques to interact with and guide the group members in their listening comprehension skills throughout the course of 13 treatment sessions. In the second experimental group, they based their intervention on the sandwich concept of interventionist method to dynamic assessment. The results pointed toward the effect of both DA strategies on learners' listening comprehension betterment.

A later study conducted by Köroğlu (2019) probed the effectiveness of the interventionist model of DA in assessing student teachers' speaking performance and attitudes towards dynamic assessment. The study included 29 student teachers registered in the English Language Teaching Department of a Turkish public institution. Due to the large number of participants, a structured questionnaire was established and used as a checklist to gather quantifiable information. A written structured interview, on the other hand, was used to obtain qualitative data from the participants. The findings of the research revealed that participants were happy with the interventionist model and had positive views regarding this assessment type. The interventionist DA, according to the participants, created a real, creative, and soothing environment that reduced their speaking anxiety. Furthermore, the interventionist strategy was found to maintain and improve the oral skills performance of student teachers.

In another study, Rahmani, et al. (2020) probed the impact of interactionist versus interventionist dynamic assessment on the enhancement of argumentative writing. Their participants were 66 novice EFL teachers selected through convenience sampling. The findings through ANOVA statistics revealed that the interactionist approach seemed to be more effective than interventionist DA in improving the participants' argumentative writing scores on the posttest.

In another investigation, Kushki, et al. (2022) probed the use of interactionist and interventionist dynamic assessment in writing argumentative essays. The participants of their research were five sophomore Persian-speaking EFL learners at an Iranian university. To gather the data, they held four one-on-one sessions between a mediator and the learners. As the results revealed, interactionist group learners outperformed those in the interventionist group.

Finally, in a more recent probe, Rassaei (2023) explored the impact of mobile-assisted DA on the

acquisition of request speech act by learners. Using WhatsApp as the major ground for communicating and providing feedback to learners, the researcher implemented the treatment in DA group via creating some scenarios that would bring about the production of appropriate request forms. The researcher then involved the learners in self-correcting their erroneous or inappropriate requests after receiving the teachers' prompts. The findings of his study pointed toward a significant enhancement in the DA group participants' ability and knowledge of producing proper request forms.

Due to the difficulties that Iranian instructors and EFL learners mostly encounter while teaching or learning writing (e.g., Sadeghi & Khanahmadi, 2011), the current study aimed to examine the effect of online interactionist vs. interventionist DA on upper-intermediate EFL learners' writing enhancement. Due to the dearth of studies on interventionist and interactionist DA, particularly in the realm of writing, it is clear that more research is needed to better understand the effect of dynamic assessment on learners' writing enhancement. Also, the current research might be regarded as a novel attempt in its own type, as it was conducted within the online learning context. Therefore, informed by the fact that the obtained results on the efficacy of different modes of dynamic assessment are inconclusive, the researchers in the current study attempted to launch a comparative investigation on the effects of interventionist vs. interactionist DA, and thereby fill in the lacuna in this domain. Thus, in accordance with the research objectives, the following research questions were formulated:

RQ1: Does online interactionist dynamic assessment have any significant effect on the writing performance of Iranian upper-intermediate EFL learners?

RQ2: Does online interventionist dynamic assessment have any significant effect on the writing performance of Iranian upper-intermediate EFL learners?

RQ3: Is there a significant difference between the effects of online interactionist and interventionist dynamic assessment on writing performance of Iranian upper-intermediate EFL learners?

METHOD

The purpose of this study was to see if online dynamic assessment and particularly interactionist and interventionist assessment types have any impact on Iranian upper-intermediate EFL learners' writing performance. It is worth noting that this study was quantitative and used a pretest, posttest quasi-experimental design. The independent variable in the current study was dynamic assessment (interactionist vs. interventionist type)

and the dependent variable was the learners' writing performance.

Respondents

Prior to the study, in order to select homogeneous upper-intermediate participants, 63 female students from three intact classes in Himora language institute took the Oxford Placement Test (OPT) whose validity and reliability were already verified. The participants were in intact groups already constituted by the institute, and their ages ranged from 17 to 25. This study used upper-intermediate female EFL learners who were attending the online classes held by the institute in the summer semester of 2021. After administering the OPT, 54 participants whose scores were between 41-60 and then fell between one standard deviation below and above the mean were selected as the ones qualified as upper-intermediate and were asked to participate in the research. The selected classes were randomly assigned to interactionist experimental group (N=21), interventionist experimental group (N= 17) and control group (N=16). It is worth mentioning that the classes were held two times a week for an hour and thirty minutes.

Instruments

Consent Form

The students who participated in this study were briefed on the aim of research. Hence, in order to let participants make an informed decision as to whether participate or not, at the outset of the study, they were asked to complete the online consent form to indicate their willingness for voluntary participation or withdrawal.

Oxford Placement Test

Although the sample of the study was selected from among the existing upper-intermediate learners in Himora Language Institute (HLI), the researchers used an Oxford Placement Test (OPT) as a homogeneity measure to eliminate the initial variations in the English language proficiency of the participants. OPT is a language proficiency test consisting of grammar and vocabulary parts in which the test takers are required to choose the best response among the multiple choice items offered. The exam composed of two sections for elementary to upper-intermediate candidates, Part A containing questions 1-40 for beginner to intermediate and Part B comprising of questions 41-60 for upper-intermediate learners. It's worth mentioning that the allotted time for the test was 70 minutes.

Writing Pretest and Posttest

In order to check the participants' English writing proficiency prior and successive to treatment, two writing tasks were administered as pretest and posttest. Participants were asked to write an essay, once as a pretest after taking the OPT, and once again after providing the treatment (i.e. online

interventionist and interactionist dynamic assessment), to check the effect of treatment on their writing performance in comparison to the other groups. The essay topics – two similar topics chosen from Bailey's (2003) Academic Writings – were given to participants for pre- and posttest, and the students were required to write them in 40 minutes.

Participants' writings were scored using a scale created by Jacobs et al. (1981) in which scripts were rated on five aspects of writing i.e., content, organization, vocabulary, language use, and mechanics. It's worth noting that although the current researchers were well-informed about the other more recent frameworks and rubrics for rating the learners' writing performance, they found the Jacobs et al's framework more practical for the current research purposes. In addition, to ensure inter-rater reliability, another experienced teacher in the institute with similar qualities as the first researcher and with no familiarity with the participants, scored 10 percent of the data. Correlation coefficients of .79 and .72 were found between the two raters, which indicated the reliability of the scoring procedure.

Writing Assignments

As the study was aimed at investigating the differential effects of online interactionist and interventionist dynamic assessments on the development of learners' writing proficiency, the researchers used 9 writing assignments during the treatment sessions followed by the relevant interactionist and interventionist treatment to implement the dynamic assessment with the participants. The details of the treatment sessions are briefed in the 'procedure' section. It's worth reiterating that the researchers used Bailey's (2003) Academic Writings as the main source for selecting the writing topics.

Scoring Rubrics

In order to establish a consistent and uniform scoring system, the researchers used the scoring rubrics which consisted of content, organization, vocabulary, language use, and mechanics. The papers were scored by the first researcher and an experienced teacher on a scale created by Jacobs et al. (1981). The five aspects are differentially weighed to emphasize first content (30 points) and next language use (25 points), with organization and vocabulary weighed equally (20 points) and mechanics receiving very little emphasis (5 points).

Procedures

In order to conduct the study, the researchers obtained the consent and permission of the head of the institute and supervisor of the language center. Also, informed consent was obtained from all the participants at the outset of the study. The teachers were then briefed on the objectives of the study and

the treatments they were supposed to use in the classes. To ensure the appropriate implementation of DA techniques in the two experimental groups, the first researcher joined the classes as an observer and asked the teachers to follow the steps. It's worth noting that the participants were all ensured of the conditions of anonymity and confidentiality at the outset of research.

As stated earlier, the participant selection first initiated by choosing 63 female upper-intermediate students in three intact groups from Himora Language Center. All the participants were informed that their identities would be kept anonymous and no information revealing their identity would be used in the study. To get assured of their voluntary participation, they were asked to fill in the consent form.

As the second step, the participants were asked to take Oxford Placement Test which was provided by the researchers in an online version following a test link sent to them. The participants were given 70 minutes to take the test. As mentioned before, the test consisted of 60 questions and at the end only 54 learners whose scores fell within the range of one standard deviation below and above the mean were considered as the upper-intermediate learners and participated in the study. Then, the participants were randomly assigned to interactionist experimental group (N = 21), interventionist experimental group (N = 17) and control group (N = 16).

In the next phase of the study, to gather the required data, a writing pretest was administered to all participants. It's worth noting that the study was done in the summer 2021 and the allotted time to write the essay was 40 minutes. The next phase of the study (i.e. treatment) continued for 9 sessions during the semester. Since the study coincided the pandemic lock-down, all the institutes and language centers had opted for e-learning and digital platform. In Himora Language Institute, Skyroom online teaching and communication platform was applied through which the classes were held, and all teaching, learning and evaluation processes were carried out in an online fashion. The classes were held three sessions a week, each lasting for 75 minutes. The materials covered in the classes were the same, and Summit 2 by Ascher and Saslow (2004) was taught as the course book.

The researchers founded the dynamic assessment in the interactionist group on the model proposed by Elliott (2002) and Xiaoxiao and Yan (2010) referred to as 'Dynamic Mediation Process'. The framework included topic-choice, idea-generation, structuring and macro-revising stage. The process designed for this group was first giving pre-task, then providing the mediation and finally performing post-task.

In the second experimental group, i.e. interventionist group, the participants received interventions based on Lantolf and Poehner's (2011)

scale. If the student's writing was correct, no mediation was provided. However, if his/her writing was erroneous, the teacher would provide feedback through highlighting, underlining, putting a question mark, circling the wring part of the sentence, or posed a written question, such as 'what is wrong with this sentence?' Alternatively, the teacher would point out the incorrect word directly, offer two options to choose from, provide the correct answer or explain the reason. Indeed, the teachers sometimes chose among the techniques proposed by Lantolf and Poehner (2011) in dealing with the learners' errors. The strategies the teacher selected were making pauses, repeating the whole utterance in a questioning tone, repeating just the erroneous part of the utterance, posing a question to signal the existence of an error or asking what the error was, highlighting the incorrect word, giving options for the incorrect part, or explicitly mentioning the error. After implementing the online interactionist and interventionist dynamic assessment techniques in the experimental groups and traditional assessment in control group, a writing posttest was given to all participants to evaluate their writing performance after treatment.

Data analysis

Using SPSS (version 23), the researchers initially calculated Cronbach's Alpha for inter-rater reliability between the scores of the raters. Later, the descriptive data were used to analyze the homogeneity test scores and omit the outliers. Kolmogorov-Smirnov normality tests were used to check for the normality or distribution of writing pretest and posttest scores.

In order to analyze the participants' performance after the pretest, an ANOVA test was run to see if the three groups performed significantly differently on the writing pretest or not. After treatment and obtaining the results of posttest, to address the research questions, the researchers used paired samples t-tests to compare the pre- and posttest performances of the groups. Later, to address the third research question, and to check whether the performances of the students in the experimental and control groups were significantly different, an ANOVA test, along with a Tuckey post hoc analysis was run on the scores of the writing posttest.

FINDINGS AND DISCUSSION

Based on the normality test results, the parametric statistics were used to analyze the research questions. The descriptive statistics related to the scores on writing pretest are shown in Table 1.

Table 1
Descriptive Statistics of Writing Pretest Scores

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Interactionist	21	22.88	2.00	.47	15.00	24.00
Interventionist	17	23.02	2.16	.49	16.00	25.00
Control	16	22.32	2.00	.46	18.00	23.00
Total	**54**	**22.56**	**2.03**	**.23**	**15.00**	**23.00**

The interactionist, interventionist, and control groups had mean scores and standard deviations of M = 22.88, SD = 2.00, M = 23.02, SD = 21.16, and M = 22.32, SD = 2.00, respectively, as indicated in the table. The researchers then utilized Levene's test of variance homogeneity to check whether the assumption of homogeneity of the variances in pretest scores was violated or not. The results are shown in Table 2.

Table 2
Levene's Test of Variance Homogeneity

Pretest			
Levene's Statistic	**df1**	**df2**	**Sig.**
.33	2	51	.80

It can be inferred that the homogeneity of the variance assumption was not violated because the observed level (p =.80) was higher than the alpha level (.05) according to Table 2. Following Levene's Test of Variance Homogeneity, a one-way ANOVA was performed on the writing pretest scores of all groups to see whether there were any differences among them.

Table 3
Analysis of Variances of the Writing Pretest Scores

	Sum of Squares	df	Mean Square	F	Sig.
Pretest					
Between Groups	132.67	2	67.89	.23	.89
Within Groups	169.48	51	4.27		
Total	**302.16**	**53**			

Based on the statistics shown in the table above, F (3, 51) = .23, *p* = 0.89, there was not any statistically significant difference at *p* < .05 level in writing pretest scores for all groups. In other words, it is concluded that the writing proficiency of all three groups is similar; hence, any changes in the posttest can be due to the given treatment. After getting assured of similarity of participants in terms of writing proficiency prior to the treatment, in the following section, the analysis of posttest scores is expounded.

Analysis of Post-test Scores
Similar to the procedure taken to analyze the pretest scores, first the interrater reliability was calculated and then the normality of distribution was checked. After conducting the posttest, the papers were scored by the researcher; however, another teacher rated 10% of the writing papers to check for the reliability of the scoring process. Therefore, an interrater reliability was calculated to confirm that the scoring procedure was consistent (see Table 4).

Table 4
Interrater Reliability between the Writing Posttest Scores

		Rater one	Rater two
Rater one	Pearson Correlation	1	.832**
	Sig. (2-tailed)		.012
	N	6	6
Rater two	Pearson Correlation	.832**	1
	Sig. (2-tailed)	.012	
	N	6	6

As the data in Table 4 help reveal, a positive strong correlation coefficient of .83 was observed between the two raters, indicating the sufficient reliability of the scoring procedure. The Kolmogorov Smirnov normality distribution test was used once more to make a proper judgment on the type of statistical analysis to be performed on the data.

According to the results which intended to check the distribution normality of writing posttest scores, it was revealed that the data did not significantly deviate the conditions for normal distribution since the significance levels (*p* = .46, z = .56), (*p* = .84, z = .75) and (*p* = .49, z = .85) were

above the alpha level (0.05). Henceforward, it was inferred that the distribution of writing posttest scores was normal.

Comparing the Pretest and Posttest Scores
The pre- and posttest scores were compared using paired samples t-tests to see whether there was any impact or possible development to address the study hypotheses and verify the efficacy of the applied treatment on the learners' writing skill development. Table 5 illustrates the descriptive statistics obtained for writing posttest, and Table 6 depicts paired samples t-test results for pretest and posttest scores of interactionist group.

Table 5
Descriptive Statistics of the Data Obtained for Writing Posttest

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Writing Posttest						
Interactionist	21	28.56	3.56	.498	15.00	29.00
Interventionist	17	26.32	2.66	.467	17.00	28.00
Control	16	25.02	2.34	.423	17.00	27.00
Total	54	26.41	3.00	.212	15.00	29.00

Table 6
Paired Samples t-Test Comparing Writing Pretest and Posttest Scores of Interactionist Group

		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
		Paired Differences			**95% Confidence Interval of the Difference**				
Pair 1	interactionist-pre interactionist-post	–5.68	3.68	1.49	5.22	11.47	5.58	20	.01

According to the statistical results of t-test run on the scores, the observed enhancement in learners' writing level in interactionist dynamic assessment group was statistically significant since *p* equaled .01 which was higher than the alpha level set for the study. Therefore, addressing the first research question, it was concluded that the participants' writing improved from pre- to posttest. As a matter of fact, the first null hypothesis was rejected, and online interactionist dynamic assessment was found to have significantly influenced the writing performance of Iranian upper-intermediate EFL learners. To find the answer to the second research question, a similar test was used to analyze the scores in the interventionist group (see Table 7).

Table 7
Paired Samples t-Test Comparing Writing Pretest and Posttest Scores of Interventionist Group

	Paired Differences							
	Mean	**Std. Deviation**	**Std. Error Mean**	**95% Confidence Interval of the Difference**		**t**	**df**	**Sig. (2-tailed)**
				Lower	**Upper**			
interventionist-pre – interventionist-post	4.00	2.54	1.46	6.56	10.56	4.53	16	.03

A quick glance at Table 7 reveals that the increase in the mean scores of interventionist group participants from writing pre- to posttest according to the data obtained from paired samples t-test was statistically significant ($p = .03 < .05$); hence, the second null hypothesis was also rejected and it was revealed that online interactionist dynamic assessment significantly impacted the writing performance of Iranian upper-intermediate EFL learners. Finally, to deal with the third research question, an ANOVA test was run the results of which are displayed in Tables 8 and 9.

Table 8
Levene's Test of Variance Homogeneity

	Posttest		
Levene Statistic	df1	df2	Sig.
.53	2	51	.70

It is concluded that the homogeneity of the variance assumption was not violated since the significance ($p = .7$) was greater that alpha set level (.05). Table 9 shows the ANOVA test results.

Table 9
Analysis of Variances of the Writing Posttest Mean Scores

Posttest					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	190.45	2	130.15	6.96	.00
Within Groups	237.88	51	4.62		
Total	428.33	53			

According to the data in Table 9, F (3, 51) = 6.96, *p* =.00, there was a statistically significant difference in writing posttest scores for the three groups at the *p* = .05 level. The statistics in pairwise comparison (Table 10) were analyzed to see which group(s) in this context (interactionist, interventionist, and control) outperformed the others considerably.

Table 10
Multiple Comparisons of Groups Using Tuckey Post-Hoc Test

(I) feedbacktype	(J) feedbacktype	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	**Upper Bound**
Interactionist	Control	3.543*	.00	3.81	4.61
	Interventionist	2.243*	.00	3.23	7.03
Control	Interactionist	-3.543*	.00	-4.61	-3.81
	Interventionist	-1.301*	.03	4.54	4.29
Interventionist	Interactionist	-2.243*	.00	-7.03	-3.23
	Control	1.301*	.03	4.29	4.54

As is clear from the table above, regarding the fact that the difference among all the groups was statistically significant, comparing the group mean scores and mean differences in pairs revealed that interactionist and interventionist groups outperformed the control group in the posttest. Comparing mean scores and mean differences of the groups was also an indicator of the superiority of the interactionist dynamic assessment over interventionist one in terms of writing improvement since the difference was significant.

DISCUSSION

The present study investigated the alternative impacts of online interactionist and interventionist dynamic assessments on EFL learners' writing performance. Based on the findings, both interactionist and interventionist dynamic assessments improved learners' writing performance since the participants of both groups outperformed the control group on writing posttest. Furthermore, the interactionist dynamic assessment group participants even did better than the interventionist group. The findings thus obtained are in line with those of Kushki, et al. (2022) who claimed that interactionist group participants outperformed their counterparts in the interventionist group.

In terms of the function of assessment in education and its impact on student achievement, Struyven, et al. (2005) emphasize the impact of evaluation, claiming that it has a major impact on student performance. In the same vein, Goodrum, et al. (2001) believe that assessment "enhances learning, provides feedback about student progress, builds self-confidence and self-esteem, and develops skills in evaluation" (p. 2). Furthermore, they claim that successful learning happens when instruction, assessment, and outcomes are all in synchronization.

Interactionist dynamic assessment, according to Poehner and Lantolf (2005), relies on a characterization of Zone of Proximal Development (ZPD), which is defined by Vygotsky (1978) as "the difference between actual developmental level as measured by individual problem solving and prospective developmental level as determined by problem solving under adult direction or in partnership with more capable peers" (p. 86). As a result, Interactionist dynamic assessment may be claimed to assist learners in realizing their full potential, which may be limited due to a variety of factors.

The interventionist dynamic assessment approach, according to Lantolf and Poehner (2014), is interested in determining the overall amount of support that a learner needs to successfully achieve a pre-determined goal. In the context of dynamic assessment, assessments about a learner's potential performance are formed based on the type and amount of intervention needed by the learners,

rather than the learner's existing dependent performance. The objective of interventionist dynamic assessment is to determine at what degree of support the learner can attain the intended point by providing step-by-step mediation, progressing from the most implicit to the most explicit. As a result, it is obvious that interventionist dynamic assessment supports learners in improving their writing abilities (Poehner, 2008).

The findings of the current study regarding the effectiveness of interventionist dynamic assessment are in line with the findings of the study carried out by Köroğlu (2019) who aimed at investigating the effectiveness of the interventionist model of dynamic assessment in the assessment of student teachers' speaking skill performance. Similarly, the interventionist strategy was found to maintain and improve the oral skills performance of student teachers. In addition, the findings of the study conducted by Abdolrezapour (2017) were confirmed by the results of the current study stating that interactionist dynamic assessment had a positive significant effect on second language learning.

Furthermore, the findings of the study enjoy a partial agreement with the results of the study carried out by Shrestha and Coffin (2012). Similar to the current study, based on their results, it was revealed that interactionist dynamic assessment can lead to undergraduate students' L2 writing development. Finally, the findings are in line with those of Safa and Beheshti (2018) who investigated the influence of interactionist and interventionist strategies applied in group dynamic assessment on the improvement of listening comprehension of Iranian intermediate EFL learners. Regarding the superiority of interactionist assessment over the interventionist one, their findings highlighted the importance of interactive GDA styles, implying that more practitioners tend to move away from authoritative pedagogy and toward interactive and cooperative pedagogy.

CONCLUSION

The current study provided empirical data on the impact of online dynamic assessment, in general, and interventionist and interactionist dynamic assessment, in particular, on developing writing performance of EFL learners. In general, the pedagogical implications resulting from this experiment are largely linked to the importance of dynamic assessment and its impact on teaching and learning. This study found that using these assessment techniques enhanced students' writing performance more than using traditional methods. In order to make the education more effective and purposeful for their students, English language teachers should be encouraged to devote more teaching time to this form of evaluation, allocate more significance to the implementation of DA, and

design more assessment tasks related to the issue. According to the results of this study, training instructors and students to get acquainted with the practical and theoretical components of DA may make learning more stress-free, pleasant, and pleasurable. As a result, students may learn from one another and communicate their ideas. On the other hand, the findings of the current study can be used by teacher trainers with the purpose of familiarizing student-teachers with alternative assessment techniques, particularly interactionist and interventionist dynamic assessment, and helping them move beyond the traditional assessment techniques.

Moreover, the findings of the study can be of great use for syllabus designer who can integrate DA procedures, and particularly interactionist and interventionist ones, in the intended syllabi to enable teachers and learners to benefit from its merits. Furthermore, the finding of this research may be useful for EFL learners who are still having trouble with writing. In other words, because assessment serves as a connection between teaching and learning, the study advises that dynamic assessment, in all its forms, be utilized to assist EFL learners develop their writing skills.

Like all other research, this investigation was bound to suffer from some limitations, which may restrict the scope of generalizing the findings, and consequently, the study conclusions must be evaluated after taking into account these shortcomings. One of the serious shortcomings of the study might be its failure to explore variables and their effect in all levels of proficiency. Only one proficiency level, upper-intermediate, was studied. The findings in this respect may not be generalized to other proficiency levels, such as elementary, pre-intermediate, intermediate, and advanced. Hence, the interested researchers are recommended to conduct a similar study on other language proficiency levels. Furthermore, due to the limited time given to the researchers due to the cumbersome syllabus used at the language school where the study was conducted, further research with longer duration might lead to different results.

Additionally, the participants in this research were all between the ages of 17 and 25. Hence, future research can be done on other age groups. Comparative research can even be conducted to examine the effects of dynamic assessment on children and adults. As another limitation of the study, it must be noted that only female students were studied in this research, and the influence of gender was not taken into account. Upcoming research, on the other hand, can compare the effects of dynamic assessment and its various types on male and female students, hence examining the effect of gender on the results.

Moreover, the focus of this study was on writing skill. As a result, the findings cannot be applied to other EFL skills, i.e. speaking, reading, and listening. The next limitation of the study has to do with the online implementation of the study. Indeed, online classes limited researcher and teacher control over the participants; accordingly, they could have gotten help from different sources including their parents, peers or different books, a factor which might affect the current findings. In addition, the participants in this study were Iranian EFL students. Hence, further research should be done in ESL contexts, and if feasible, research comparing the effects of dynamic assessment in EFL and ESL contexts can obtain interesting results.

The other limitation of the study was the small number of participants. Because of the small number and scope of the participants who participated in this study, the results may not be generalizable to bigger populations. Finally, the study scope was delimited to language school, leaving the conclusions for other study groups like school or university students ambiguous.

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