

On the Effect of Dynamic Assessment on Iranian Intermediate EFL Learners' L2 Grammar Learning and Retention: A Gender-Based Study

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Abstract

Dissatisfaction with product-oriented and static forms of assessment led to the emergence of process-oriented testing or dynamic assessment. Learners' involvement in the assessment process can enhance their learning autonomy and help them process linguistic features more deeply. Accordingly, using a quantitative quasi-experimental research design, the researchers sought to explore whether utilizing DA principles would have any differential impact, believed to be statistically significant, on the Iranian male and female intermediate EFL learners' learning and retention of English grammar. To this end, 30 EFL learners from two intact classes who were taking a general English course at Shayestegan English Language Institute, in Rasht, Iran were selected as a homoscedastic group of participants based on the scores they obtained on a sample copy of Oxford Solutions Placement Test (OSPT). The intact classes, each comprising 15 students, were then assigned to one experimental and one control group who then received treatment on their L2 grammar under different conditions: The experimental group received instruction on English grammar as per the principles of dynamic assessment in an eight-session intervention program. The control group likewise received treatment on L2 grammar over the course of the study, but they were trained using teacher-fronted instruction. Finally, the groups sat for an immediate and a delayed posttest of grammar to demonstrate their degree of learning and amount of retention of English grammar. Capitalizing on a 2 by 2 factorial design, which allowed for examination of both main and interaction effects of instructional modality and participants' gender, the researchers employed a two-way Analysis of Variance (ANOVA) to examine the participants' performance scores. The results revealed that, regardless of participants' gender, instruction as delivered through dynamic assessment privileged the participants in the experimental group much better than that of the conventional method in terms of their learning and retention of English grammar. A further finding was that gender did not interact with instruction modality in such a way as to produce a differential effect on Iranian intermediate EFL learners' learning and retention of English language grammar. The study carries both micro implications in the form of in-class teaching and macro implications in the form of curriculum planning and development, instructional design, and policymaking for different groups of stakeholders.

Keywords: [Dynamic assessment](#), [EFL learners](#), [gender](#), [L2 grammar](#)

1. Introduction

One of the primary ways in which teachers help their learners improve is through assessing and giving feedback on their written work. Assessment, a natural part of the teaching and learning processes, is administered to support learning (Rezaee, Rahimi, & Mehrabi, 2019; Wiliam, 2017); therefore, it has a huge impact on teaching and learning (Baird, Andrich, Hopfenbeck, & Stobart, 2017). Cheng and Warren (2015) also point out that it is crucial for both teachers and learners to get involved in assessment and have control over its methods, procedures, and outcomes, and to understand the underlying rationale for assessment. Assessment remains a ubiquitous element of any writing classroom and is vitally important to the academic growth of learners (White, 2009). Therefore, assessment as an integral part of the teaching and learning processes, determines whether the goals of education are being met or not.

Traditional assessment considers teachers as the sole leaders who take responsibility for all paperwork and retain full control of classrooms. This teacher-centered pedagogy is associated with passive learning and hinders the development of learners' higher-level cognitive skills. Thus, to overcome the limitations of teacher assessment and lessen teachers' workloads, some teachers seek to adopt dynamic assessment (DA) principles (e.g., Wen, 2016; Yu & Hu, 2017).

As Van der Veen Dobber, and Van Oers (2016, p. 329) have put it, DA "represents a view on assessment and teaching in which instruction or feedback is intertwined with assessment or testing." In DA, as Fulcher (2010) put it "rather than 'just' a provider of feedback, teachers are the 'mediators' in classroom interactions" (p.72).

The greatest distinction between DA and conventional testing or what is frequently referred to in the literature as static assessment, can be seen in the shift from a product to a process orientation regarding testing (Zohoor & Eslami, 2021). This distinction has numerous implications not only concerning the actual assessment techniques but also concerning the types of questions asked and solutions formulated concerning low cognitive functioning and/or poor academic performance (Nazari & Mansouri, 2014).

This mode of assessment is "instantaneous and cyclical: Assessment-decision-instruction" (Bachman & Palmer, 2010, p. 28). They add that it is an "implicit" kind of assessment in which both teachers and learners may be unaware that a sort of assessment is occurring (p. 28). Lantolf and Poehner (2008) believe that in DA, "assessment and instruction are a single activity" (p. 273) in which intervention is offered to diagnose and improve learner development at the same time. As Modarresi and Alavi (2014) have asserted, "there is considerable evidence for the usefulness of the theoretical construct of DA in grammar instruction" (p. 5).

Regarding the importance of grammar, Nassaji and Fotos (2011) note that "in keeping with current developments and the recognition of the importance of grammar instruction, many of the proposals in language teaching advocate an inclusion of a focus on linguistic forms in classroom instruction" (p. 11). Then, there is this question of how this presentation of grammar must be delivered to accomplish the best result for the learners.

Regarding previous studies of DA and its effect on grammar achievement, various findings have been obtained. For instance, Anton (2012) used DA for the placement of students in advanced levels based on accuracy in the use of sentence-level grammar and vocabulary in a university undergraduate Spanish program. Based on the results, those learners who were able to revise under prompting were placed at an advanced level, and those who failed were considered to be at lower levels and were accordingly placed in various courses.

Furthermore, as Aghajanzadeh Kiasi and Rezaie (2021) argue, language assessment can play a monumental role in fostering language learning and its primary role, that is, measuring learning outcomes. However, in most L2 courses, a traditional instructor-centered examination has remained the primary means for assessing learners' performance, and DA is still undervalued.

Hence, it is essential to make a distinction between the DA approaches and the traditional approaches to testing because static assessment (SA) and DA do not refer to the type of assessment, but rather to how an assessment is administered. Therefore, as Tzurriel (2013, p. 1) argues, the term "static test" refers to a test where "the assessor presents items to the child and records his or her response without any attempt to intervene to change, guide or improve the child's performance."

Consequently, dissatisfaction with product-oriented and static forms of assessment led to the emergence of process-oriented testing or DA. Poehner and Lantolf (2010) assert that SA differs from DA in two basic ways. First, the focus

in the former is on the product of the learners' past development while the latter looks up to the learners' future, upcoming progress. Second, DA integrates assessment with instruction, whereas such integration is absent in SA.

Contrary to static or traditional assessment, DA represents a paradigm shift toward a new philosophy of assessment that refocuses assessment on helping individuals develop through intervention. Assessment is undertaken primarily to assist learners. Assessors must provide feedback to learners that will be supportive in identifying areas of strength as well as weakness. It is also hoped that the findings will be used by EFL teachers to select the most appropriate strategies of assessment in enhancing learners' grammar knowledge. The study might also give meaningful findings that can also be applied in future studies.

Additionally, this study may bring the attention of teachers to the significance of grammar in the language learning process because as Nassaji and Fotos (2011) argue, language-teaching professionals have become increasingly aware that teaching approaches that put the primary focus on meaning with no attention to grammatical forms are inadequate.

1.1 Statement of the Problem

Although a large body of research has been accumulated on the effectiveness of DA in teacher-student interactions, the DA of grammar achievement presented through teacher interventions and mediations in the classroom has received scant attention in the research literature. As Modarresi and Alavi (2014) have asserted, "There is considerable evidence for the usefulness of the theoretical construct of DA in grammar instruction" (p. 5).

Of the previous studies of DA, only a few studies have considered the effect of DA on learners' grammar knowledge (Daneshfar et al., 2018) or various aspects of grammar, such as tenses, modals, and conditionals. Norris (2016) notes that the proficiency guidelines set foreign language instructors on a pathway from being concerned about what their learners knew about the language to what the learners could do with the language. Teachers' tendency to focus on communication ability and capability of meaning transition may consequently lead to a shallow consideration of learners' grammar knowledge. Most importantly, the studies in the past have not dealt with gender-based investigation of DA on male and female learners' learning and retention of L2 grammar.

In addition, the previous studies on the effect of DA on L2 grammar have not taken the uptake of the learners in terms of EFL learners' retention of L2 grammar. Most importantly, the studies in the past have not dealt with gender-based investigation of DA on male and female learners' learning and retention of L2 grammar.

Iranian EFL learners, especially at higher levels, often fail to employ accurate grammar structures that suit what they mean to say in English. They may have encountered many complicated grammatical instructions in their course books or heard from their teachers but they are unable to employ those structures in their speaking and have the tendency to construct grammatically low-level sentences.

1.2 Objectives of the Study

The current study aimed to examine the effect of DA on Iranian intermediate EFL male and female learners' learning and retention of English language grammar. The overarching aim was to examine whether instruction modality would interact with participants' gender in such a way as to differentially impact their learning and retention of English grammar.

In line with the overriding aims of the present study, the following questions were formulated to guide this research:

1. Does dynamic assessment have any statistically significant effect on Iranian intermediate EFL learners' learning of English grammar?
2. Does dynamic assessment have any statistically significant effect on Iranian intermediate EFL learners' retention of English grammar?
3. Does gender interact with the dynamic assessment in such a way as to produce a differential impact considered to be statistically significant on Iranian intermediate EFL learners' learning of English grammar?
4. Does gender interact with the dynamic assessment in such a way as to produce a differential impact considered to be statistically significant on Iranian intermediate EFL learners' retention of English grammar?

2. Review of Literature

Concerning the nature of the present study dealing with DA, the theoretical framework of the present study is divided into three sections, [Vygotky's \(1978\)](#) Sociocultural Theory, [Bandura's \(1986\)](#) Sociocognitive Theory, and [Long's \(1996\)](#) Interaction Hypothesis

A recurrently mentioned account of [Vygotky's \(1978\)](#) formulation of cultural development that is extrinsically bound to the concept of Zone of Proximal Development (ZPD) is almost prevalent throughout the mainstream of DA. DA which has its origin in the theories of [Vygotky \(1986\)](#) is a kind of assessment that provides the learners with mediation according to their needs. The Zone of Proximal Development (ZPD) and the Sociocultural Theory of Mind (SCT) are two notions that constitute the theoretical basis of dynamic assessment.

Social constructivists believe that formative assessments of learners' learning are of great worth to the learners. So, they consider assessment for learning (AfL) as an interactive process in which teachers and peers help learners use their (ZPD) to progress to the next step in their learning. [Huang \(2015\)](#) argues that "in AfL, assessment alone is not enough. The ultimate concern of AfL is still the teaching and learning that comes after formative assessment" (p. 363). Like LOA, "AfL can be divided into two parts, namely, assessment and learning. It is critical in AfL that assessment is not just the teacher's concern". The other aspect, learning, is also important. Indeed, "the ultimate objective of AfL is not only for learners to self-assess but to enhance learning through assessment" (p. 364).

Based on [Vygotky's \(1998\)](#) sociocultural perspective, AfL is an interactive process in which teachers and learners discuss learning intentions and how best to improve teaching and learning performance and accomplish success. [Vygotky](#) sees the ZPD as the area where the most sensitive instruction or guidance should be given allowing the child to develop skills they will then use on their own to develop higher mental functions.

[Vygotky](#) highlighted the basic role of interaction in a social context in the cognitive expansion process ([Kazemi et al., 2020](#)). Given this theory, teaching is regarded as the process of assisting learners to expand their mental functions as well ([Zarei & Shishegarha, 2024](#)).

Over the past three decades, DA has received a great deal of attention in language assessment and educational sciences (e.g., [Leung, 2007](#); [Poehner, 2008](#)). DA, a term coined by Luria (as cited in [Poehner & Lantolf, 2010](#)), is a kind of assessment that engages teachers continuously. According to [Ebadi Vakilifard, and Bahramlou \(2018\)](#), "In DA, a two-way interactive relationship is developed between the teacher and the learner whereby both parties could initiate questions" (p. 3). Since instruction and assessment are viewed as two aspects of a single entity, the teacher can intervene and help the learner reach the task objectives.

As [Van der Veen et al. \(2016, p. 329\)](#) have put it, DA "represents a view on assessment and teaching in which instruction or feedback is intertwined with assessment or testing." In DA, as [Fulcher \(2010\)](#) puts it "rather than 'just' a provider of feedback, teachers are the 'mediators' in classroom interactions" (p. 72). According to [Grigorenko \(2009\)](#), there are three basic assumptions on which diverse DA methodologies are based.

[Poehner and Lantolf \(2010\)](#) have identified two general approaches to DA: Interventionist and interactionist. Interventionist DA is based on "Vygotky's quantitative interpretation of the ZPD" and is currently put into practice through "a pretest-treatment-post-test experimental approach; providing item-by-item assistance" ([Poehner & Lantolf, 2008, p. 239](#)). According to [Leung \(2007\)](#), "the pre- and posttests can involve the use of 'static' instruments. The dynamic quality lies in their use in conjunction with intervention" (p. 260). Interactionist DA, on the other hand, originates from [Vygotky's](#) second, qualitative, interpretation of the ZPD, "one that foregrounds instruction learning over measurement" ([Poehner & Lantolf, 2010, p. 239](#)).

Furthermore, [Zarei and Rahmaty \(2021\)](#) investigated the effects of interactionist versus interventionist DA models on L2 learners' willingness to communicate (WTC), foreign language anxiety (FLA), and perfectionism. They concluded that dynamic assessment reduces learners' FLA and hence boosts their WTC and perfectionism.

[Zhang and van Compernelle \(2016\)](#) conducted a study evaluating the effect of the DA approach on enhancing second language grammatical learning potential through dynamic assessment. Four intermediate-level and two elementary-level university learners participated in a three-phase experiment. The results revealed that sandwich format dynamic assessment involving mediation was successful in activating learners' learning potential and promoting their achievement.

In yet another study, [Zarei and Khojaste \(2020\)](#) compared the effect of three DA approaches including Group Dynamic Assessment, Intensive Mediated Learning Experience (MLE), and Learning Potential measurement on learning the lexical collocations of English. The findings indicated that MLE was more effective than both of the other models in the comprehension and production of lexical collocations.

In a different study, [Yakışiki and Çakır \(2017\)](#) followed the pre-test-treatment-post-test procedure and quantitative and qualitative data analyses to investigate the students' responses to their ZPD. It was proved that the students in the experiment group were able to maintain their success and seemed to be affected by the power of interactions in the students' ZPD. In DA, assessment and instruction come together and their combination occurs when intervention takes place within the evaluation process; its objective is to find out the abilities of learners and to guide them to higher levels of performance ([Tabatabaee et al., 2018](#)).

In their study investigating the effect of DA on the acquisition of Type II conditional constructions, [Kamali, Abbasi, and Sadighi \(2018\)](#), working with students in two intact classes, found that the experimental group significantly outperformed the control group on both immediate and delayed posttests on type II conditionals.

[Daneshfar Aliasin and Hashemi \(2018\)](#) also studied the effect of DA on EFL learners' grammar knowledge. Focusing on male and female participants in segregated groups, it was discovered that the learners exposed to DA principles showed drastic changes after a period of six mediated sessions. The results proved that dynamic assessment had a significant impact on participants' grammar achievement.

[Estaji and Ameri \(2020\)](#) utilized DA as an implicit kind of assessment investigating the learners' change of behavior in terms of their proficiency levels. They tried to examine the effect of the interactionist approach to DA on Iranian EFL learners' grammar achievement at two proficiency levels: pre-intermediate and upper-intermediate. To this end, learners, in four intact groups; namely, pre-intermediate (students) and upper-intermediate (students), were selected and randomly assigned to two quasi-experimental and two control groups. The data collected through pretests, posttests, and semi-structured interviews were analyzed. Notably, the participants in the quasi-experimental groups received mediation.

[Jafary Nordin and Mohajeri \(2012\)](#) studied the influence of DA on the syntactic development of 60 Iranian college preparatory EFL learners. The results revealed that there was a significant increase in the performance of subjects in the experimental group who received mediation in DA involving "some strategies like looking for clues, eliminating the answers that do not fit, and comparison strategies" (p. 153) compared to the control group participants who received deductive instruction on grammatical rules for 12 sessions.

Likewise, [Malmeer and Zoghi \(2014\)](#) investigated the DA of grammar with various age groups. Using an interactionist model of DA on Iranian intermediate adult ($n = 40$) and teenage ($n = 40$) learners, they concluded that the adult EFL learners benefited from DA more than the teenagers. The teachers "offered feedback, explained, asked them to explain why they chose the wrong answer, and provided them with different techniques mostly through think-aloud" (p. 1710).

Moreover, [Malmeer and Zoghi](#) concluded that DA was advantageous to both age groups. In the same year, [Ahmadi and Barabadi \(2014\)](#) examined the effect of Computerized Dynamic Assessment (CDA) on 83 Iranian EFL learners' knowledge of grammar. The findings of the study revealed that the use of CDA can improve both the test takers' grammatical ability and learning potential.

In a similar vein, [Abdolrezapour and Ghanbari \(2021\)](#) examined the effect of employing self-regulated DA on enhancing self-regulation as well as listening comprehension. The members of the experimental group showed better scores in listening comprehension; their self-regulation also improved.

Investigating English relative pronouns through the interactionist model of DA based on the sandwich format, [Majdedin, Nabizadeh, and Taghinejad \(2015\)](#), unlike [Malmeer and Zoghi \(2014\)](#), found that the teenagers ($n = 30$) would benefit from the interactionist DA more than the adult learners ($n = 30$). In the second phase (mediation), the researchers "gave feedback, and explanation through interaction and provided them hints from implicit to explicit" ([Majdedin et al., 2015](#), p. 62). Furthermore, the findings of this study illustrated a significant difference between the pre-test and post-test scores of both groups, showing the improvement of scores in English relative pronouns tests after DA mediation.

In their study, [Kazemi and Tavassoli \(2020\)](#) compared the effect of DA versus diagnostic testing on L2 speaking ability. They concluded that both dynamic and diagnostic assessments had a significant effect on EFL learners' speaking ability. [Mohammadi Moghadam \(2015\)](#) studied the effects of DA mediation on a beginner EFL learner's grammar, focusing on English tag questions. In this case study, the student's first answers were regarded as her "grammar static score. If her answers were wrong, mediations from most implicit to most explicit were given, and the results were used as mediated scores and a learning potential score" (p. 101). The results of this study indicated a significant difference in the learner's knowledge of tag questions because of DA intervention.

Exploring the effect of DA on 58 pre-intermediate Iranian EFL learners' acquisition of English tenses, [Abbasi and Fatemi \(2015\)](#) found that the learners in the dynamic group not only performed better than those in the control group in terms of the acquisition of English tenses but also, they held positive attitudes toward learning through DA. In this study, "at the heart of the process, during 12 sessions of treatment, five weekly posttests were administered to the students" (p. 228).

[Sharafi and Sardareh \(2016\)](#) also investigated the effect of dynamic assessment on 46 adult EFL learners' grammar learning at the elementary level. The results of the study revealed that dynamic assessment had a considerable impact on elementary EFL learners' learning of prepositions of time and place. Similarly, a recent study by [Daneshfar et al. \(2018\)](#) showed the effectiveness of DA in the mastery of grammar knowledge among Third Grade Secondary School EFL learners.

3. Methodology

3.1 Design of the Study

The present study drew on a quantitative quasi-experimental research design to explore whether utilizing DA principles had any statistically significant effect on the Iranian intermediate EFL learners' learning and retention of English grammar. The participants were chosen from intact classes, and no randomization was employed; however, they were randomly assigned to two groups experimental and control after sitting for a homogeneity test. Since factorial designs enable the researchers to examine the interaction effects that exist between factors, a pretest-treatment-posttest design mixed with a 2 by 2 factorial design was used to examine the tenability of the hypotheses of the study. DA was the independent variable that represents one of the instruction modalities that was employed for the experimental group. Teacher-fronted instruction was another modality of treatment that was employed for the control group. The second independent variable involved the participants' gender which could serve as a potential covariate affecting the learning and retention of English grammar.

3.2 Participants

The initial population for the present study comprised 48 learners taking a conversation course at Shayestegan English Language Institute in Rasht, Iran. After administering a sample copy of Oxford Solutions Placement Test (OSPT) as a homogenizing test, a sample of 30 learners at the intermediate level of language proficiency was selected. The learners were of both genders, and all of them were native speakers of Persian. They were between the age range of 19 and 26. They were randomly assigned to two groups, one experimental group and one control group, each of which included 15 learners. There were 7 male and 8 female participants in each class representing the subgroups in each study group.

3.3 Instrument and Materials

After the participants were selected from intact classes before assigning them to two groups, and before starting the treatment, the participants were required to take a sample copy of OSPT to ensure that they were homogeneous concerning their general English language proficiency. Likewise, the content of the pretest and posttest of English grammar used was chosen from *American File 3* which was used as the main course book in the English Language Institute because the groups received instruction on grammar based on this book. Since the goal was to investigate the effects of DA on the learning of English grammar, 20 English grammar items in multiple-choice format were chosen for the pretest. Since improvement from the pretest to the posttest was an indication of how much was learned as a result of the intervention program of implementing DA, the same English grammar items with a different ordering sporadically rearranged, served as the posttest of English grammar to measure the groups' gains throughout the study. The posttest of English grammar aimed to show whether there was a statistically significant difference in the

performance of the participants in both groups on the posttest. In addition, the posttest was then followed by a delayed posttest to measure the amount of retention of English grammar. This test of English grammar which had the same level of difficulty as used in the posttest was given to the participants two weeks after the administration of the posttest.

3.4 Procedures for Data Collection

To accomplish the aim of the study, the following procedures were employed: First, for selecting a homogenous group of participants in terms of their language proficiency level, a sample copy of OSPT was administered to two intact classes of learners, and 30 students from the two classes were identified as intermediate learners according to the standards and criterion of OSPT. They were then divided into two groups of experimental and control, each consisting of 15 students.

Next, one of the researchers administered a pretest of English grammar to measure the learners' English grammar knowledge and to check the homogeneity of the groups at the beginning of the treatment. The analysis of the learners' scores suggested that they delivered a lackluster performance on the test. Regarding the grammatical points and instruction, the grammatical points of lesson 3 A of American English File 3 were taught to both groups. However, the experimental group was assigned to receive treatment on grammar based on DA principles.

The mediation or treatment lasted for eight weeks, every week a mediated test was administered to the experimental group. The interventionist type of mediation was used in this treatment period. According to [Lantolf and Poehner \(2008\)](#), in the interventionist approach, the tasks and materials are prepared with the goal of predicting the examinees' problems they encounter during the assessment. In this approach, mediation is arranged as hints, prompts, and leading questions from implicit to explicit. The hints were given in Persian.

The learners in the experimental group took a 10-item test accompanied by the teachers' prepared help or mediation. Group mediation was given to the students by the teacher due to the lack of time. The way the teacher helped the participants was to give some prepared points orally following the cake format of interventionist DA. In the cake format, the instruction is given in graded layers after each test item, as prepared by the teacher. The hints that the teacher had already prepared were based on the teacher's prediction of what learners' problems would be during the test. Every question was followed by three mediated hints as supposed by the teacher to target the learners' needs during the mediation in approaching the correct answer. The hints were not written on learners' papers but orally presented and discussed by the teacher to guide the subjects of the research.

However, during the ten-session period, the control group did not receive any special treatment. For the control group, there was no mediation period, and they did not take the mediated tests. They received instruction from the teacher teaching the same points the experimental group received with no special intervention program. The teacher taught English grammar conventionally using the board or PowerPoint for the materials she had prepared. She taught the grammar either through the use of explanation or through providing examples first before explaining the points. She used both deductive and inductive ways of teaching English grammar to the participants in the control group.

Having finished the treatment, one of the researchers administered a posttest of English grammar to measure the participants' English grammar knowledge at the end of the treatment and also to gauge their performance scores in comparison to the pretest means. However, to know the amount of retention of the English grammar learned as a result of treatment, a delayed posttest was also taken by the participants. This test served to show the amount of retention of the English grammar points learned. The data analysis of this study was based on both descriptive and inferential statistics. All the statistical analyses were computed by the use of the Statistical Package for the Social Sciences (SPSS).

4. Findings

To select homogenous participants as a sample regarding their general language proficiency, the standardized OSPT was administered to 48 male EFL learners. Table 1 shows the results of group statistics for OSPT scores administered for selecting intermediate participants.

Table1. OSPT statistics for the participants of the study

N	Valid	48
	Missing	0
Mean		39.1000
Median		28.0000
Mode		28.00 ^a
Std. Deviation		7.96113
Variance		63.380
Skewness		.153
Std. Error of Skewness		.309
Kurtosis		-.440
Std. Error of Kurtosis		.608
Range		26.00
Minimum		19.00
Maximum		56.00
Sum		2166.00

Measures of central tendency (mean, median, and mode) and measures of dispersion (range, variance, standard deviation) along with measures of distribution (Skewness and Kurtosis) were computed for the general English test. The cut-point of 39.1000 ± 7.96 was set, and 34 EFL learners were selected based on SPT direction because their proficiency scores fell within the range of 31+ that is considered for intermediate EFL learners. According to OSPT, scores within the domain of 0-15, 16-30, and 30+, are considered elementary, pre-intermediate, and intermediate, respectively.

After the administration of OSPT, a pretest of grammar was administered to both groups. The aim of administering the pretest was to establish whether the participants were homogenous concerning their grammar knowledge. Presented in Table 2 are the data received from the pretests of the two groups. The purpose was to compare the means of the two independent, normally distributed populations of the experimental and control groups. It was done to make sure there were any significant differences in the students' achievements between the means of the two groups as shown by the pretests to emphasize homogeneity between them. Based on the results obtained from participants' pretest scores, the following results were obtained as shown in Table 2.

Table 2. Descriptive statistics reported for the control and experimental groups' performance scores on the pretest of L2 grammar

Group	N	Mean	Std. Deviation	Std. Error Mean
Experimental	15	66.54	6.47	1.13259
Control	15	65.66	5.07	.61357

As shown in Table 2, for the grammar test administered at the beginning of the study, the mean scores for the control and experimental group were ($M = 66.54$) and ($M = 65.66$), respectively. The degree of scatteredness of the scores for the experimental group (6.47) was slightly bigger than that of the control group (5.07). So, there was no considerable difference between the groups concerning their grammar knowledge.

After administering the pretest, one of the researchers embarked on administering the treatment via two different methods for eight weeks. The control group received grammar instruction through traditional methods, and the experimental group received the instruction through DA. To further clarify the mean changes of the two groups in terms of changes in grammatical knowledge of both groups after the instructions, the following results for the posttests were achieved. Table 3 summarizes the descriptive analysis of the results of the post-test.

Table 3. Descriptive statistics reported for the control and experimental groups' performance scores on the posttest of L2 grammar

Group	N	Mean	Std. Deviation	Std. Error Mean
Experimental	15	87.7500	7.2307	.72910
Control	15	71.0248	6.9817	.82649

Table 3 shows that the mean scores for the control and experimental groups were ($M = 87.75$) and ($M = 71.02$), respectively. Accordingly, there was a considerable difference between the experimental and control groups concerning their grammar knowledge achieved in the posttest. To measure the participants' amount of retention of English grammar expected to be boosted as a result of the intervention program, which employed DA principles, a delayed posttest was administered to the groups two weeks after the immediate posttest.

Table 4 reveals the data collected on the descriptive statistics for the performances of the groups on their delayed posttest. It shows that the mean score of the experimental group is higher than the mean scores of the control group revealing that participants in the experimental group were able to retain a higher rate of L2 grammar knowledge than the participants in the control group.

Table 4. Descriptive statistics reported for the control and experimental groups' performance scores on the delayed pretest of L2 grammar

Group	N	Mean	Std. Deviation	Std. Error Mean
Experimental	15	87.3912	7.5412	.45789
Control	15	67.2413	6.2456	.95245

As shown in Table 4, the values obtained for the experimental group and the control group showed a considerable difference in range, minimum, maximum, and especially the mean scores. That is, the difference in the mean scores of the groups was considerably different in the delayed posttest; both groups had a drawback in the delayed posttest. However, the mean score of the control group had a larger drawback from 71.02 to 67.24 (-3.96) than the drawback experienced by the experimental group (-.036), which was not considerably big. In line with the results indicated in the previous tables of L2 grammar, Figure 1 shows the scores of both control and experimental groups comparatively in their pretest, posttest, and delayed posttest scores.

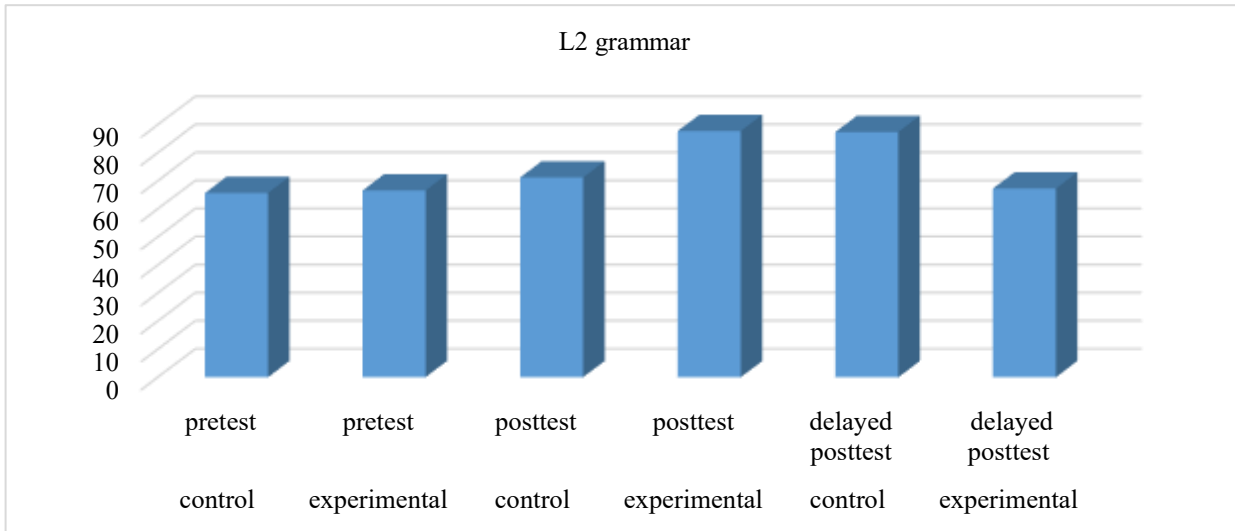


Figure 1. The means difference of the study groups reported for the pretest, posttest, and delayed posttest

The scores on the tests of L2 grammar show a trend of growth for the experimental group from the pretest to the posttest, and there is an insignificant decrease in the delayed posttest. However, this difference was high between the mean scores of the pretest and posttest of the experimental group. Overall, the improvement is significant.

To make sure that there were no statistically significant differences between the experimental group and control group on the pretest, an independent samples t-test was administered. Furthermore, one of the preconditions of using parametric tests such as the t-test is the homogeneity of variances observed in the mean scores of the groups. To measure the amount of such variability, Levene’s test is usually employed. Table 4.10 above also summarizes the results of Levene’s test of equality of variances for the pretest mean scores. According to Table 5., Levene’s test was not significant for the pretest scores: $F_{pretest} (.27) = .065, p = .26$ at the .05 alpha level. Thus, the assumption of homogeneity of variance was met for the sample.

Table 5. The results of independent samples T-test reported for the pretest of L2 grammar

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Diff.	
								Lower	Upper	
Pretest	Equal variances assumed	.27	.26	.065	58	.94	.10	1.54	-2.99	3.19
	Equal variances not assumed			.065	56.1	.94	.10	1.54	-3.00	3.20

As can be seen, there was no significant difference between the mean scores of the two groups in the pretest of grammar ($p > 0.05$). The difference in scores for the control ($M = 66.54, SD = 6.47$) and experimental group ($M = 65.66, SD = 5.07; t(58) = .27, p = .94$, two-tailed), was not significant; that is, the control and experimental group were almost at the same level of proficiency in terms of their grammar in the administered test at the beginning of the

study. Accordingly, there were no significant differences between the experimental group and the control group on the pretest.

Concerning the research question mentioned, an independent samples t-test was run to the results of the post-test. It was implemented to make a comparison between the experimental and control groups in terms of their performance on grammar tests after supplying the specific intervention for the experimental group. The results showed that providing grammar through DA affected the achievement of the experimental group on grammatical knowledge. The learners' performance in the experimental group ($M = 87.75$) far outweighed that of the control group ($M = 71.02$) in the posttest of grammar (Table 6).

Table 6. The results of independent samples T-test reported for the posttest of L2 grammar

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Diff.	
								Lower	Upper	
Posttest	Equal variances assumed	1.35	.55	3.547	58	.00	-7.76	1.62	-11.02	-4.50
	Equal variances not assumed			3.547	57.9	.00	-7.76	1.62	-11.02	-4.50

The independent samples t-test procedure presented two tests of the contrast between the control and experimental groups. Moreover, the assumption for the first row was that the variances of the two groups were similar. The result of Levene's test (homogeneity of variances) for the posttest scores was also not significant: $F_{posttest}(1, 28) = .354, p = .55$ -at the .05 alpha level. Thus, the assumption of homogeneity of variance was acceptable for the post-test scores, as well.

The difference in scores for the control ($M = 71.02, SD = 6.98$) and experimental group ($M = 87.75, SD = 7.23; t(58) = 3.5, p = .00$, two-tailed), was significant; that is, the control and experimental group were not at the same level of proficiency in terms of their grammar knowledge in the administered test at the end of the study. From another point of view, the amount of T, 3.5, is higher than the critical value indicating that there was a difference in the performance of the experimental and control groups in the posttest of English grammar. To investigate students' progress within groups, two paired samples t-tests were also run, which showed the students' progress in the pretest and posttest which are shown in Table 7.

Table 7. The results of paired-wise comparison reported for the mean scores of the grammar test

		Groups	Mean	N	Std. Deviation
Control group	Pair 1	Pretest scores	65.66	15	5.07
		Posttest scores	71.02	15	1.42
Experimental group	Pair 2	Pretest scores	66.54	15	6.47
		Posttest scores	87.75	15	7.23

The mean score of the experimental group control group for the grammar test improved from 66.54 in the pretest to 87.75 in the posttest. However, the control group progressed from 65.66 in the pretest to 71.05 in the posttest. As shown in Table 7 indicating the group means differences among the groups from pretest to posttest, Table 8 shows that there is also a statistically significant difference between the two groups.

Table 8. The results of the paired samples T-test reported for the means of the pretest and posttest of L2 grammar

Groups		Paired Samples <i>t</i> -test					<i>t</i>	df	Sig. (2-tailed)
		Paired Differences							
		Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Control group	Pretest Posttest	5.54	.5606	.144	1.889	2.5104	15.199	14	.001
Experimental group	Pretest Posttest	21.21	1.330	.340	9.468	10931	26.924	14	.000

As shown in Table 8, both groups progressed throughout the experiment; however, this improvement was highly significant only for the experimental group ($p < 0.05$). This suggests that DA-based instruction proved to be highly instrumental in furthering the students' command of grammar as compared to the conventional method that capitalized on teacher-fronted instruction. To see if the difference in the delayed post-test scores of the control group and the experimental group was statistically significant, the researchers administered an independent samples *t*-test of L2 grammar to the groups at 95% confidence (see Table 9).

Table 9. The results of the independent samples T-test reported for the delayed posttest scores of L2 grammar

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Difference	
									Lower	Upper
Del. posttest	Equal variances assumed	5.16	.027	-11.47	58	.000	-4.22	.348	-4.697	-3.302
	Equal variances not assumed			-11.47	48.76	.000	-4.22	.348	-4.700	-3.299

The results of an independent samples *t*-test of L2 grammar test score between the groups, at a 95% confidence demonstrated that the difference was statistically significant, $t(58) = -11.47$, at $p < .05$, 2-tailed. In other words, the average difference between the grammar test scores of groups was statistically significant. Furthermore, the results of Levene's test for the delayed posttest scores were not significant: $F_{\text{delayed posttest}}(5.169) = -11.47$, $p = .027$ at the .05 alpha level. Thus, the assumption of homogeneity of variance was also justified for the delayed post-test scores.

Next, a two-way ANOVA was conducted to compare the mean difference between the groups that have been split on two independent variables (instruction modality and gender). The primary purpose was to understand if there was an interaction between the two independent variables on the dependent variable (learning of L2 grammar). Table 10 shows the interaction effect between gender and instruction modality on the learning of L2 grammar.

Table 10. Results of a two-way between-groups ANOVA reported for the main and interaction effects of instruction modality and gender on L2 grammar learning

Tests of Between-Subjects Effects							
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta Squared
Corrected Model	812.265a	5	162.453	.964	.441	.023	
Intercept	1145159.703	1	1145159.703	6793.650	.000	.971	
L2gL	8.119	2	4.060	.024	.012	.000	
Gender	377.861	1	377.861	2.242	.136	.011	
L2gL* Gender	176.299	2	88.149	.523	.594	.005	
Error	33881.213	201	168.563				
Total	1881838.000	207					
Corrected Total	34693.478	206					

a. R Squared = .23 (Adjusted R Squared = -.001)

As can be seen, although the main effect for treatment was statistically significant ($p < 0.05$), suggesting that the two instruction modalities produced a differential impact on students' learning, the interaction effect between gender and instruction modality was small ($p > 0.05$). Further evidence comes from the fact that the test yielded a small effect size ($F(2, 201) = .52, p = .59, \text{partial } \eta^2 = .005$). Similarly, another two-way ANOVA was run to compare the mean differences between two groups and sub-groups on the delayed posttest of grammar. The purpose was to examine the main and interaction effect of the two independent variables on the dependent variable, retention of L2 grammar. Table 11 shows the main and interaction effects of gender and instruction modality on the retention of L2 grammar.

Table 11. Results of a two-way between-groups ANOVA reported for the main and interaction effects of instruction modality and gender on L2 grammar retention

Tests of Between-Subjects Effects							
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta Squared
Corrected Model	723.357a	6	152.359	.995	.389	.021	
Intercept	1046137.629	1	1046137.629	895.058	.000	.895	
L2gR	7.108	2	3.090	.036	.000	.000	
Gender	296.954	1	296.954	3.338	.142	.012	
L2gR* Gender	137.241	2	76.131	.497	.528	.005	
Error	32759.127	179	129.425				
Total	1692341.000	195					
Corrected Total	32154.263	194					

a. R Squared = .21 (Adjusted R Squared = -.001)

As can be seen, the main effect for treatment is still statistically significant ($p < 0.05$), and concerning the higher mean score of the experimental group, it can be argued that they reaped greater benefits from instruction. Yet there was no interaction effect between gender and instruction modality believed to be statistically significant. Therefore, it cannot be claimed that the participants' L2 retention of L2 grammar was differentially impacted. Further evidence supporting this hypothesis comes from a small effect size (where $F(2, 179) = .49$, $p = .52$, partial $\eta^2 = .005$).

5. Discussion

The present study examined the effect of DA on Iranian intermediate EFL male and female learners' learning of English grammar. According to the results of the statistical analysis, the participants' overall performance in grammar was poor before the study; the overall low means on the pretest of the groups assumed that the participants were not good at grammar knowledge in general. However, the experimental group (DA) displayed different behavior on the posttest. That is, the participants' grammar knowledge improved significantly after the intervention program. In other words, there was a significant difference between the performance of the experimental group receiving DA principles and traditional assessment or testing practiced conventionally in EFL classrooms. It was also found that the average difference between the grammar test scores of groups was statistically significant in their delayed posttest. However, no interaction was found between gender and the participants' L2 learning and retention of L2 grammar two weeks after the immediate posttest.

As the descriptive statistics including mainly means and standard deviations and the inferential statistics of independent samples t-test revealed, the answer to the first question was negative. Similarly, in answering the first research question, the researcher found that dynamic assessment had a statistically significant effect on Iranian intermediate EFL learners' learning of English language grammar. Similarly, by answering the first research question and testing the second research hypothesis, the researchers found that dynamic assessment had a statistically significant effect on Iranian intermediate EFL learners' retention of English language grammar.

Regarding the third and fourth research questions on the gender interaction with the methods of instruction and their different impacts on the student's learning and retention of English grammar, the results of two-way between-groups ANOVA indicated that gender did not interact with methods of instruction in such a way as to differentially impact students' learning and retention of English grammar. Accordingly, it was found that gender does not interact with the dynamic assessment in such a way as to produce a differential impact considered to be statistically significant on Iranian intermediate EFL learners' learning and retention of English language grammar.

The results of the current study are mostly supported by the literature in the field. For example, [Zhang and van Compernelle's \(2016\)](#) study on evaluating the effect of DA approach to enhancing second language grammatical learning potential supports the findings of the current study in that they found that DA involving mediation was successful in activating learners' learning potential and promoting their achievement. The learners' cognitive functions as a result of the reaction of the students to the support presented to them for the areas of problem, explain the reason of the effect of DA in these studies.

Similarly, the findings of the study done by [Yakışki and Çakır \(2017\)](#) are in harmony with the findings of the current study. In both studies, the learners' responses to their ZPD provided by peers in their collaborative work were the reasons for the common findings. It was also proved that the ZPD provided for the learners in the experiment groups helped them maintain and retain their success and seemed to be affected by the power of interactions in their ZPD.

Moreover, the results of the study done by [Kamali, Abbasi, and Sadighi \(2018\)](#), investigating the effect of DA on the acquisition of Type II conditional constructions, working with students in two intact classes, support the findings of the current study in that the experimental or DA group significantly outperformed the control group or the conventional method of grammar instruction on both immediate and delayed posttests on type II conditionals.

Similar to the findings of the current study, [Daneshfar et al. \(2018\)](#) who studied the effect of DA on EFL learners' grammar knowledge discovered that the learners exposed to DA principles showed drastic changes after a period of six mediated sessions. The results proved that dynamic assessment had a significant impact on participants' grammar achievement. The common findings account for the learners' interaction with peers as an effective way of developing skills and strategies. In the meantime, the learners' use of cooperative learning exercises with help from more skillful peers within ZPD was equally effective.

In addition, the findings of the study carried out by [Estaji and Ameri \(2020\)](#) are in line with the findings of the current study as they also found that DA affected Iranian EFL learners' grammar achievement positively. The results of both studies confirmed that the collaboration of peer groups had a positive effect on the accuracy of grammar as compared to the control group who worked individually. Similarly, a study by [Daneshfar, Aliasin, and Hashemi \(2018\)](#) showed the effectiveness of DA in the mastery of grammar knowledge among Third Grade Secondary School EFL learners.

The superiority of DA in all these studies implies that in the DA-based classes, the immediate feedback was a forum for discussion so that learning continued after the assessment. It allowed students to engage in a discussion of the assessment problem, resolve misconceptions, and reinforce successful learning when their focus on the task was strongest and sharpest. The immediacy of the feedback overcame major impediments of delayed feedback. By providing feedback immediately after the assessment, the learning was internalized.

Undoubtedly, DA performs a crucial role in language learning and the use of DA has become a growing trend in L2 learning instructions. It is time to rethink DA, not to be a side type of assessment, but rather a common assessment tool for formative purposes and useful in the EFL classrooms.

6. Conclusion

This study used a quantitative method to study the effect of DA on Iranian intermediate EFL learners' grammar ability. The results of data analyses showed that the experimental group employing DA principles improved significantly from the pretest to the posttest and the delayed posttest in their grammar knowledge. The results of the present study supported the idea that students' grammar knowledge would improve through practices through DA. Accordingly, DA can be used in EFL classes as a technique whereby the ZPD is put into practice.

DA can be better explained when it is compared with the static assessment. In static assessment which is the traditional way of assessment, the focus of attention is on the results of teaching and learning while this focus in DA is on the process of learning. Static assessment forbids providing any mediation or help during the assessment and relies only on the abilities of the learners without any intervention. Indeed, as it has been shown in the present study that the DA is an effective means for defining the performance of the learners, DA must be applied to the learners who perform poorly on the standardized measures. While using a DA approach for learners from varying achievements and abilities, it should be considered by the assessor that the nature of the learners' difficulties is not the same, and as a result, different levels of intervention are required from the side of the learners.

Based on the findings of the present study, it can be concluded that collaboration in learners' assessment that is inspired by DA enhances L2 learning, and it brings a shift in learners' roles from passive learners to active participants and a change in using learning strategies as a result of being engaged in collaborative assessment.

The present study might have both micro implications in the form of in-class teaching and macro implications in the form of curriculum planning and development, instructional design, and policymaking. This study shed light on the status of teaching English and the effect of DA on L2 grammar in an EFL context. It provided additional insights into better identifying existing challenges regarding assessment and taking a more realistic perspective concerning the ELT situation in Iran. The results of the study carry the following pedagogical implications.

The implication is that collaboration can be put into practice successfully through DA. Based on the findings of the current study, the integration of collaboration and DA is effective both in theory and in practice as it has a significantly positive effect on EFL learners' grammar knowledge. Therefore, teachers inspire the spirit of group work and collaboration among the learners, and the learners need to be encouraged to work collaboratively and do teamwork and get help from peers so that the desirable result of teaching/learning can be achieved.

EFL teachers can improve learners' mastery of grammar by disclosing their learning potential profiles, providing them accurate diagnostic feedback, involving them in DA interactions, pretesting, and discussing their grammar problems. In the non-DA approach, each learner's performance is compared with other learners; however, through dynamic assessment, each individual's performance is compared with his/her prior performance. Through this approach, teachers can better understand the learner's grammatical problems and promote each individual's performance at a level beyond his/her current capability. DA performs a crucial role in language learning and the use of DA has become a growing trend in L2 learning instructions. It is time to rethink DA, not to be a side type of assessment, but rather a common assessment tool for formative purposes and useful in the EFL classrooms.

6.1 Limitations and Delimitations of the Study

It is worth mentioning that the conclusion of the present study was limited to the participants under study and should not be generalized to other settings with different participants without further research. Generally, they relate to the selection of the participants. One of the major limitations of this study was that the participants were only from one level, (i.e., intermediate). This study did not include participants from other levels. Moreover, the age of the learners was not controlled in this study. Therefore, further research needs to consider the age difference among EFL learners and see if it can moderate the effect of DA on grammar. There was a limited number of language learners (N = 30) participated in this study. Therefore, the result of the present study is limited to the participants under study and cannot be generalized to other settings with different participants with great caveats. In addition, the present study did not investigate the effect of EFL learners' perceived effect of DA on their grammar and other language skills. Future studies can examine the participants' perceptions and any potential mismatches between their views and those of instructors on the utilities and affordances offered by practicing DA principles in the classroom.

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