

The Effects of Interventionist and Interactionist Dynamic Assessment on L2 Students' Perfectionism, Foreign Language Anxiety and Willingness to Communicate

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Abstract

Given the importance of assessment in language education, the main purpose of this study was to investigate the effects of interactionist and interventionist Dynamic Assessment (DA) on EFL learners' perfectionism, willingness to communicate (WTC), and foreign language anxiety (FLA). The participants were 166 pre-intermediate EFL learners in two public schools and a language institute. They were divided into three groups and given three separate questionnaires to measure their perfectionism, WTC, and FLA before the treatment. During 14 sessions, groups A and B received instruction using interactionist DA and interventionist DA, respectively. Group C was instructed conventionally. After the treatment, they were given the same three questionnaires. The participants' responses to the questionnaire items were turned to scores on a Likert-like scale. The collected data were analyzed using one-way ANCOVA. The results showed no significant differences among the groups in terms of their perfectionism and willingness to communicate. Although there was no significant difference between the interactionist and interventionist models of DA, they were both significantly more effective than the control condition on learners' FLA. This means that DA, regardless of its type, has a facilitative role in reducing anxiety in a foreign language setting. These findings can have implications for teachers, students, and material developers.

Keywords: Dynamic assessment; Foreign language anxiety; Perfectionism; Willingness to communicate

1. Introduction

Over the past few decades, researchers have shown increasing interest in the study of factors that can reduce language learners' anxiety and improve their willingness to communicate. One such factor is assessment. Recently, teachers have turned to DA as a viable alternative to traditional assessment. Poehner and Lantolf (2005) reported that DA gives thorough

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information through considering an individual's performance with help from someone and how the assistance can be beneficial. DA includes assessment techniques which integrate assessment and instruction (Allal & Pelgrims Ducrey, 2000).

DA has the potential to influence different aspects of language learning. This study has focused on WTC, FLA, and perfectionism. WTC is claimed to be crucial for successful language learning (Clement, Baker & MacIntyre, 2003; Yashima, Shimizu & Zenuk-Nishide, 2004). Several researchers (MacIntyre & Gardner, 1989; Pae, 2013; Saito, Garza & Horwitz, 1999; Zarei & Rezaoust, 2020) have shown a relationship between language learning and FLA. Meanwhile, human has always sought perfection. In recent decades, perfectionism has been studied as a multidimensional construct that affects learning in different ways.

Many studies have examined the effects of assessment on L2 learning. There is no shortage of studies on the effect of affective factors on different dimensions of L2 learning. However, few have specifically studied the effects of DA on affective variables like FLA, WTC, and Perfectionism (Flett, Nepon, Hewitt & Fitzgerald, 2016). This paucity motivated us to conduct this study, which addressed these research questions:

1. Are interventionist and interactionist DA and conventional instruction differentially effective on EFL students' perfectionism?
2. Are interventionist and interactionist DA and conventional instruction differentially effective on EFL students' WTC?
3. Are interventionist and interactionist DA and conventional instruction differentially effective on EFL students' FLA?

2. Literature review

Alternatives in assessment were introduced in response to the drawbacks of traditional assessment (Herman, 1992). MacNamara (1997) challenged traditional assessment, arguing that one's performance should be considered in a social context. Later, Swain (2001) suggested that it is far better to measure learners' improvements by analyzing their collaborations purposefully. Other researchers (e.g., Taylor & Wigglesworth, 2009) sought developments in language testing through the integration of learning and assessment; this led to DA.

Multiple factors led to the advent of DA. The main reason for the introduction of DA, according to Grigorenko (2009), was the failure of traditional assessments in measuring levels of learners' cognitive development under the influence of their cultural background. The necessity of focusing on both present and future abilities of learners was another main reason.

What makes DA different from other approaches, according to Sternberg and Grigorenko (2002), is initially its concern over past, current, and future learner abilities and the mediating role of the examiner. Two other advantages of DA include detecting learning potentials and preference for process over product (Nassaji & Swain, 2000). DA is claimed to provide fairness in education with mediation given to learners experiencing difficulties (Poehner, 2007). Shrestha and Coffin (2012) explain that DA is supportive and less stressful for learners. Besides, feedback is provided during assessment in DA, unlike other approaches which give feedback merely at the end. Besides, Harding, Alderson and Brunfaut. (2015) hold that DA offers beneficial insights for diagnostic purposes.

DA has different models. Based on the kind of mediation, Lantolf and Poehner (2004) recommended the terms interventionist and interactionist DA. Interventionist DA is a test-intervene-retest approach which focuses on the qualitative results of the intervention. According to Lantolf (2009), it provides graduated help through standardized tests and systematic feedback. The standardized mediating hints can be both implicit and explicit, and the mediator decides on how many and what type of hints to provide.

Interactionist DA is the qualitative analysis of students' abilities through interpreting key features of the interaction mediated in a blended learning and assessment. The interactionist approach has been claimed to be more useful in classroom situations as it provides unscripted mediation depending on mediators' judgment and learners' responsiveness (Poehner, 2008). Lantolf (2009) holds that interactionist DA is a negotiated approach that is more compatible with Vygotsky's ZPD theory. In the interactionist approach, the learner's ZPD is highly involved since the mediator assists the learner through interaction, unlike interventionist DA, which focuses on learners' development regardless of the amount of time and effort needed.

Ahmadi and Besharati (2017) observed that EFL learners' performance on tests was influenced by the mediation they received through intersectional DA treatment. As Khoshsima, and Izadi (2014) state, mediation through interactionist DA may lead to the development of listening proficiency. A study on the effects of DA on the speaking skill of advanced learners also showed that both interactionist and interventionist DA were effective in improving speaking ability with the interactionist model being more efficient (Ahmadi Safa, Donyaie & Malek Mohammadi, 2015). In a recent study on the effects of the two models of DA on L2 learners' pragmatic comprehension, Malmir (2020) found that both DA groups outperformed the control group.

Sternberg and Grigorenko (2002) also recognized a type of DA procedure called the sandwich and cake format because the treatment is sandwiched between a pretest and a posttest. This format is like the pretest-treatment-posttest design, which is used in traditional experimental research. A pretest is used to measure the current status of learners and posttest measures the treatment effect. The treatment part is actually the mediation provided by a proficient assessor-mediator (Sternberg & Grigorenko, 2002). Individualized sandwich DA is more in line with the interactive nature of interactionist DA. The sandwich format, on the other hand, best suits the interactionist approach regarding its standardized mediation steps.

A study on the sandwich format interventionist DA revealed that providing mediation brings significant changes in Iranian EFL university learners' performance (Behshad, Amirian, Davoudi & Ghaniabadi, 2018). Other studies have emphasized the role of interaction in mediated language learning experiences (e.g., Tzuriel, 2013).

Many studies on the effects of DA on different language skills have supported the role of DA in language learning (Poehner, 2008). The effects of DA have been studied on different skills such as reading (Naeini & Duvall, 2012), writing (Nassaji & Swain, 2000), and speaking (Davison, Leung & Sabet, 2009) and grammatical accuracy (Alemi, Miri & Mozafarnezhad, 2019) The result of Hamavandi, Rezai and Mazdayasna's (2017) studies showed that DA assessment was more beneficial than traditional assessment in predicting the reading ability of

intermediate learners. In writing, Nassaji and Swain (2000) state that consciousness-raising occurs as a result of the use of collaborative prompts in DA. The results of another study on DA in Japan showed significant speaking improvement (Davison et al., 2009). Other studies have indicated improvement in metacognition and L2 strategies use as a result of the combination of teaching and testing (Smith, 2018).

There have also been studies on computer-based DA (Barabadi, Khajavy & Kamrood; Poehner & Lantolf, 2013). Through computer-based DA (CDA), Ebadi and Saeedian (2016) explored transcendence in reading. They found that task complexity improves learners' development in reading skills. Pishghadam and Barabadi (2021) also confirmed the positive effect of CDA on reading comprehension. Another study conducted by Tzuriel and Shamir (2002) on the effect of computer mediation on DA suggested that the cognitive performance of young learners improved. Babamoradi, Nasiri and Mohammadi (2018) reported similar positive results in writing. Besides, Behshad et al., (2018) assert that L2 WTC could play a significant role in responding to mediation in a computer-based DA of writing.

Despite its merits, DA has also attracted some criticism. Grigorenko and Sterbner (2002) argue that DA does not explain how to measure changes resulting from mediation. The reliability and validity of DA have also been questioned due to non-standardized methodology, especially in the interactionist model. Poehner (2008), however, rejects this criticism and suggests that the construct of DA should not be compared to non-DA constructs due to the impossibility of separating the human mind and the context it proceeds in.

Another influential factor in language learning is perfectionism, which is the act of striving to achieve high-standard goals that may be accompanied by strict self-evaluations (Hewitt & Flett, 1991). Perfectionism results in increased levels of depression and anxiety symptoms (e.g., Rice & Aldea, 2006; Wei, Mallinckrodt & Russell, 2004). Researchers have conceptualized the term in different ways, including neurotic versus normal (e.g., Hamachek, 1978), positive versus negative (e.g., Slade & Owens, 1998), and maladaptive versus adaptive perfectionism. However, the question of whether positive perfectionism is unproblematic still remains. Frost, Marten, Lahart and Rosenblate (1990) suggest that perfectionism raises learners' desire to set overly high standards for critical evaluation. Stornelli, Flett, and Hewitt (2009) studied the association between children's level of perfectionism and their educational achievement and reported that in spite of a significant correlation between these two variables, perfectionism increased their fear. Flett and Hewitt (2006) suggest that this form of perfectionism is still integrated with fear of failure but may lead to consciousness to some extent. Yet, there is little doubt that maladaptive perfectionism results in multiple negative outcomes (Flett & Hewitt, 2002).

Several studies have investigated how perfectionism influences language learning (Coryell & Clark, 2009; Fahim & Noormohammadi, 2014; Yoshida, 2013). According to Flett et al. (2016), the pressure a learner feels trying to be perfect infuses anxiety and hinders learning. They reported that L2 skills exacerbate, especially in those who suffer from lack of confidence. Roohafza et al. (2010) argue that the greater a learner's positive perfectionism becomes, the higher academic achievement and motivation, and the lower stress and anxiety can be expected. In the same vein, it is noted by Fahim and Noormohammadi (2014) that high

achievement has a positive correlation with positive perfectionism but low achievement may be related to either positive or negative perfectionism. However, Pishghadam and Akhondpoor (2011) reported that higher perfectionism negatively affects learners' EFL skills.

Gregerson and Horwitz (2002) also found a relationship between FLA and perfectionism. Perfectionism can also lead to poor language production (Coryell & Clark, 2009; Yoshida, 2013). According to Dashtizadeh and Farvardin (2016), language learning motivation, foreign language achievement, and perfectionism are positively correlated, and the first two factors are mediated by the third. Ghorban Dordinejad and Afshar (2017) also found a negative correlation between perfectionism and performance.

Still another influential variable in language learning that is associated with the above factors is Willingness to Communicate (WTC). MacIntyre (1994) introduced a model of WTC in first language. Later, MacIntyre, Clement, Dornyei, and Noels (1998) introduced WTC in L2 learning. They defined the term as the readiness to take part in a conversation with particular people at a particular time. They believed that WTC is essential in language teaching and leads to better proficiency.

McCroskey and Richmond (1989) argue that silence is the result of shyness in some communicative occasions. In Dornyei and Kormos's (2000) study, WTC was shown to be affected by learners' attitudes toward the instructional task. According to Karimi and Abaszadeh (2017), an autonomy-supportive teaching style can also affect learners' WTC indirectly. In another study, language learning beliefs and social support were found to be effective on WTC (MacIntyre, Baker, Clement & Conrod., 2001).

Yashima (2000) reported that high WTC levels correspond with low anxiety levels. Ghanbarpour (2014) further supported the role of motivation in WTC. Alemi, Tajeddin and Mesbah (2013) also reported that learner variables like gender, age, proficiency level, personality, length of treatment, and experience of communicating with foreigners affect WTC. In addition, the findings of a study with young language learners revealed that using indirect feedback is more effective in improving WTC (Ghahari & Piruznejad, 2017).

Anxiety and communicative ability have been reported to be the most relevant factors contributing to students' unwillingness to communicate (MacIntyre et al., 2001). Many studies have suggested a negative correlation between anxiety (especially speaking anxiety) and WTC (e.g., MacIntyre, 1994).

Cao and Philp (2006) studied two dimensions of WTC, situational WTC and trait-like WTC in a second language environment. The results revealed that situational WTC could actually show learners' true behavior while trait-like WTC could predict their tendency. Situated WTC was studied by Kang (2005). The results suggested that creating a friendlier environment could lead to anxiety reduction. This brings to mind another factor that is connected to Perfectionism and WTC and that may be affected by DA., i.e., anxiety.

Language anxiety has been defined as the feeling of anxiety in the context of language learning (MacIntyre & Gardner, 1994). In addition, Brown (2007) defined the term as the feeling of anxiety when using an L2. There is little doubt that anxiety both affects, and is affected by, language skills. Horwitz et al. (1986) assumed that oral skills affect FLA more. Other researchers have discussed anxiety caused by oral performance in FL environments

(Aida, 1994). In listening, for example, Krashen (1985) reported high levels of anxiety learners experience in FL listening situations. In addition to oral skills, learners may experience FLA in reading due to lack of knowledge of decoding a written text (Saito et al., 1999). Saito et al., (1999) also reported that unfamiliar cultural factors in a foreign language can cause anxiety. Besides, learners may encounter difficulties with articulating their ideas using unfamiliar lexical, phonological, and grammatical systems (Aida, 1994). According to Sito and Samimy (1996), FLA increases in higher education. Brundage, Winters and Beilby (2017) claim that fear of making errors in adults forces them to be silent and conservative in communication. It is also claimed (Levine, 2003) that monolinguals experience more anxiety than bilinguals or multi-linguals.

For years, the relationship between FLA and FL performance has been studied (MacIntyre & Gardner, 1989). However, previous literature on the topic shows mixed results. While Phillips (1992) asserts that language anxiety is negatively effective on oral test performance, Yan and Horwitz (2008) claim that although FLA may lead to poor performance, there is no evidence of the inverse. For instance, Zhang (2013) found that despite the effect of FL listening anxiety on FL listening performance, there is no systematic inverse correlation.

To conclude, the literature shows that the notions of FLA, WTC, and perfectionism have been addressed in various studies in relation to variables such as improvements in educational settings. There have also been several studies on how DA can improve learning conditions. However, previous literature has either compared DA with traditional testing or has compared different models of DA affecting EFL/ESL learners' course performance.

In other words, much of the previous research has had a cognitive orientation and has focused on the effects of DA as well as Perfectionism, WTC, and FLA on different aspects of language learning. Previous research has also explored the associations among these variables. This study has a psycholinguistic orientation. Given that Perfectionism, FLA, and WTC are among the affective learner variables, the question that remains to be answered is, from a psycholinguistic perspective, how does DA affect the mentioned factors. It appears that the potential effects of DA on these variables have not been extensively explored. This means that there is a paucity of research on the effects of models of DA on these variables. This study is aimed to address this gap.

3. Method

3.1. Participants and Setting

The participants included 146 pre-intermediate female and 20 male EFL learners at Hafez secondary school and Hazrat Fatemeh high school and Iranmehr language institute, in Karaj. Those who were in the public schools were female, and those in the language institute were both male and female. The participants' average age was 15 with a standard deviation of 2.4. Their language ability was roughly at the pre-intermediate level. They were selected through convenience sampling based on availability. The reason for this method of sampling was that the participants were the students of one of the researchers of this study. They were in three groups, two treatment groups, and a control group. Each group randomly received one of the treatments. All the three classes were taught by the same teacher, one of the researchers, who

is a professional teacher with an MA in language teaching and has more than 15 years of teaching experience. She taught in both schools and the institute.

3.2. Instrumentation

The following teaching materials and instruments were used to achieve the purpose of this study.

3.2.1. Teaching materials. The materials were prospect 3, vision 1, and Got It series 1 and 2, second edition. Prospect 3 contains six chapters. The last three chapters were taught. Each chapter contained vocabulary, grammar, intonation, expression, and conversation related to the theme of the lesson. Vision 1 contains four chapters. Each chapter contains the same elements as prospect 3. The last two chapters were used. Got it 1 and 2 both have 8 units of which the first four units were taught in the experiment. All the mentioned teaching materials were assigned by the schools and the language institute, and the researchers had no control over their selection. However, this did not matter because the students' achievement in their course was of no interest to the researchers. We were only keen to check the change in the learners' perfectionism, WTC, and FLA as a result of the application of DA models.

3.2.2. Instruments. Data were collected through the following instruments:

The first instrument was the Foreign Language Classroom Anxiety Scale (FLCAS) developed by Horwitz et al. (1986). The questionnaire had 33 items on a 5-point Likert scale. The reliability of the questionnaire has been reported by Horwitz et al. (1986) to be .83. Based on the advice of Cheng et al. (1999), the words *foreign language and language* were replaced by *English* to be appropriate for English learners. Because our participants were at the lower intermediate level and a translated version of the questionnaire was used, the reliability of the scale was re-estimated, using Cronbach's alpha, to be .857. Besides, although this questionnaire has been used in previous studies and has been claimed to be valid, its validity was rechecked through consultation with two university professors in applied linguistics, who confirmed the appropriateness of its items.

The second instrument was the 'Willingness to Communicate inside the classroom' questionnaire, developed by MacIntyre et al. (2001). The scale included 27 items. The reliability of the different sections of the scale has been reported by MacIntyre et al (2001) to be as follows: speaking (8 items, $\alpha=.81$), reading (6 items, $\alpha=.83$), comprehension (5 items, $\alpha=.83$), writing (8 items, $\alpha=.88$), and overall reliability ($\alpha=.79$). The reliability of the translated version was re-estimated using Cronbach's alpha to be .86. The validity of the questionnaire was confirmed through expert opinion.

The final instrument was a modified and translated version of 'Multidimensional Perfectionism Scale (MPS), developed by Hewitt and Flett (1991). This version contained 30 items based on a 7-point Likert scale. The words and phrases that were not applicable to the context of this study were either removed or changed accordingly. Two professors in applied linguistics confirmed the content validity of the questionnaire. Although a decent reliability index has already been reported ($\alpha=.85$), its reliability in the new context was estimated, using Cronbach's alpha, to be .81.

3.3. Procedures

Two hundred and thirty students were selected based on availability from among ninth grade, tenth grade, and pre-intermediate students (A2 and B1) in three groups. Sixty-four students were excluded from the experiment by the end of the procedure because either they failed to cooperate fully or were absent on some of the data collection sessions, and 166 students remained in the study. The participants were in three groups, each of which was randomly given instruction under one of the three conditions. Before instruction, they were given the three questionnaires of FLA, WTC, and perfectionism as the pre-test. They were given 60 minutes to answer the questions. Questions about the questionnaires were answered immediately in their mother tongue to avoid misunderstanding. After the pre-test, during 14 sessions of nearly 75 minutes each, the same teacher taught specific chapters of the mentioned books.

The first group was assessed through interventionist DA. Integrating teaching with assessment simultaneously accompanied by mediation, the teacher tried to take learners' future abilities in addition to their present and past by using test-intervene-retest format and focusing on the quantitative results of the intervention. First, learners were given a pre-test in order for the teacher to find their level of independent performance. Second, the teacher intervened through teaching the content that had been tested before, following a standardized procedure and script (called intervention stage), for example by providing graduated help in problem-solving tasks in order to transfer what had been learned independently to other contexts. Finally, learners were tested again to measure their degree of change.

The second group was treated through interactionist DA. The learners were given some tasks to perform using graduated prompts like leading questions, examples, finding errors, etc., which increased in complexity, and the teacher interacted with each individual to decide the degree of mediation necessary. The teacher tried to respond to the behavior appropriately and at the most suitable time.

The third group was taught using a conventional treatment without any DA. They only had a final exam. First, the teacher reviewed previous lessons and had a warm-up activity for the new lesson. Then, the teacher taught the content based on the lesson plan. However, there was no assessment of their learning in each session.

On the last day of the treatment sessions, the mentioned questionnaires were given as post-test to the participants. The collected data were summarized and prepared for statistical analysis.

3.4. Data Analysis

In order to analyze the collected data, a one-way ANCOVA was used for each research question.

3.5. Research Design

This study took place in the EFL context of Iran in two public schools and a private language institute. It used a quantitative quasi-experimental design. Perfectionism, FLA, and WTC were the dependent variables, and DA (with two levels) was the independent variable. There were

pretests and posttests, and there was a control group. However, the condition of random selection of participants could not be met although the assignment of groups of participants to the three experimental conditions was done on a random basis.

4. Results and Discussion

4.1. Results

4.1.1. The first research question. This question was aimed at investigating the effects of interventionist and interactionist DA and conventional instruction on perfectionism. Before using One-way ANCOVA, its assumptions were checked. Since the covariates were measured before the treatment, they could not be influenced by it. In addition, there was only one covariate in each ANCOVA analysis. Therefore, the assumption of correlation among covariates was not applicable. To check the assumption of the reliability of covariates, Cronbach's Alpha was checked. Results showed that the covariate was measured reliably ($r=.81$). The scatter plot of pre-test and post-test of perfectionism confirmed the linearity assumption, and the non-significant interaction between the pre-test and groups ($F_{(2,151)}=.86$, $p > .05$) confirmed the assumption of the homogeneity of regression slopes. Meanwhile, Levene's Test of Equality of Error Variances ($F_{(2, 154)}=.74$, $P > .05$) showed that the assumption of homogeneity of variances was also met. After checking the assumptions, the one-way ANCOVA was run to measure the differences between the three groups. Table 1 contains the descriptive statistics.

Table 1
Descriptive Statistics for the ANCOVA on Perfectionism

group	Pre-test		Post-test		N
	Mean	Std. Deviation	Mean	Std. Deviation	
interactionist DA	91.6842	13.46445	89.5962	14.41440	52
interventionist DA	92.4130	15.39058	87.7556	14.28310	45
traditional assessment	92.8095	16.14936	90.2833	15.65095	60
Total	92.3133	14.97871	89.3312	14.80531	157

The main results of one-way ANCOVA ($F_{(2,156)}=.797$, $p > 0.05$), in Table 2, show no significant differences among the three groups on the post-test of perfectionism while controlling for the effects of the pre-test.

Table 2
Tests of Between-Subjects Effects for Perfectionism

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	21210.955 ^a	3	7070.318	79.484	.000	.609
Intercept	1300.791	1	1300.791	14.623	.000	.087
PrePerT	21045.204	1	21045.20	236.588	.000	.607
group	141.801	2	70.901	.797	.453	.010
Error	13609.809	153	88.953			
Total	1285905.000	157				
Corrected Total	34820.764	156				

a. R Squared = .609 (Adjusted R Squared = .601)

4.2.2. *The second research question.* This question examined the effects of the same treatment conditions on WTC. To this end, another one-way ANCOVA was used after all the assumptions were checked. Cronbach's Alpha showed that the covariate was measured reliably ($r=.86$); the scatter plot showed no curvilinear relationship between the dependant variable and the covariate; a non-significant interaction between the treatment and the covariate ($F_{(2,155)}=.497, p > .05$) showed that the assumption of homogeneity of regression slopes was met, and Levene's Test ($F_{(2,158)}=1.18, p > .05$), confirmed that the assumption of homogeneity of variances was also met. Having met the assumptions, we used the ANCOVA. Table 3 summarizes the descriptive statistics.

Table 3
Descriptive Statistics on willingness to communicate

group	Pre-test		Post-test		N
	Mean	Std. Deviation	Mean	Std. Deviation	
interactionist DA	90.7895	16.12865	95.8333	13.62261	54
interventionist DA	94.0870	12.74332	97.5652	13.11429	46
traditional assessment	87.3810	15.28591	89.5246	13.88837	61
Total	90.4096	15.08966	93.9379	13.94977	161

Table 4 reveals no meaningful differences among the groups in their WTC ($F_{(2,157)}=2.78, p > .05$) although there is a trend.

Table 4
Tests of Between-Subjects Effects for WTC

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	22099.981 ^a	3	7366.660	128.00	.000	.710
Intercept	2341.289	1	2341.289	40.682	.000	.206
PreWTCT group	20112.619	1	20112.61	349.47	.000	.690
Error	320.015	2	160.008	2.78	.065	.034
Total	9035.398	157	57.550			
Corrected Total	1451852.000	161				
Total	31135.379	160				

a. R Squared = .710 (Adjusted R Squared = .704)

4.2.3. *The third research question.* The third question was about the effects of the mentioned treatments on FLA. To measure the differences of the three groups' means on the post-test, one-way ANCOVA was utilized. A Cronbach's Alpha coefficient of .857 for the covariate, straight lines in the scatter plot, the non-significant interaction effect ($F_{(2,158)} = 2.00$, $p > .05$), and Levene's test results ($F_{(2,158)} = .741$, $p > .05$) showed that all the assumptions were met. Then, the descriptive statistics for the three groups on FLA were summarized in Table 5.

Table 5
Descriptive Statistics for FLA

group	Pre-test		Post-test		N
	Mean	Std. Deviation	Mean	Std. Deviation	
interactionist DA	95.2807	18.34370	92.2727	19.69532	55
interventionist DA	94.7609	19.95348	91.1556	18.24948	45
traditional assessment	105.8730	19.41440	105.7869	18.17976	61
Total	99.1566	19.80449	97.0807	19.82832	161

The main result of the one-way ANCOVA ($F_{(2,157)} = 5.592$, $p < .05$), in Table 6, showed that the groups performed differently on the post-test after controlling for the pre-test differences.

Table 6

Tests of Between-Subjects Effects for foreign language anxiety

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	50531.930 ^a	3	16843.97	213.71	.000	.803
Intercept	882.100	1	882.100	11.192	.001	.067
PreFLAT group	43057.030	1	43057.03	546.30	.000	.777
Error	881.433	2	440.717	5.592	.005	.066
Total	12374.020	157	78.815			
Corrected Total	1580278.00	161				
	62905.950	160				

a. R Squared = .803 (Adjusted R Squared = .800)

The results of the post-hoc comparison test (Table 7) revealed that the interactionist DA group had a significantly lower mean score than the traditional assessment group (mean difference=4.82, $p < .05$). Furthermore, interventionist DA was significantly less effective than traditional assessment (mean difference=5.18, $p < .05$). There was no significant difference between the interactionist and interventionist DA groups (mean difference=.35, $p > .05$).

Table 7

Post-Hoc Comparisons for Post-test of Foreign Language Anxiety

(I) group	(J) group	Mean Difference (I-J)	Sig. ^b
interactionist DA	interventionist DA	.353	1.000
	traditional assessment	-4.827*	.015
interventionist DA	traditional assessment	-5.180*	.013

4.3. Discussion

One of the findings of this study was the non-significant differences among the effects of interactionist and interventionist dynamic assessment and conventional instruction on EFL students' perfectionism. This finding is compatible with several previous studies (Egan, Wade & Shafran, 2011; Flett & Hewitt, 2002), which suggest that inheritance and biochemical factors are more influential reasons for perfectionism than treatment. This finding also lends support to those who believe that affective factors have a greater role (Gong, Paulson & Wang, 2016; Stoeber & Otto, 2006) than treatment. This is also supported by Frost et al. (1990) and Hewitt and Flett (1991), who showed that perfectionism is caused by factors associated with family environment and parental behaviors. Therefore, the learning environment seems not to cause significant changes in contrast to heredity factors and living environment. Similarly, among the studies on the effect of such external factors on perfectionism, we can refer to Flett et al. (2016), who claim that children's propensity to perfectionist behavior is due to their endeavor to deal with stressful family struggles to gain peace. This is also supported by Egan et al.

(2011), who showed that children's behavior is formed at their early age so that it can hardly be influenced by treatments in learning environments. The finding also supports the claim that perfectionism is developed by other dimensions of family styles and characteristics (Gong et al., 2016). These studies have reported that factors other than treatment are more effective on learners' perfectionism.

The insignificant difference between the two types of DA on learners' perfectionism could be accounted for by several factors. One reason could be that birth and growth condition might have more influence than the treatment, and the limited sessions of DA might not have been effective enough to make any significant changes in the participants' perfectionism (Egan et al., 2011; Gong et al., 2016; Stoeber & Otto, 2006). Another reason might be that perfectionism is a personality trait that may be rooted in a persons' childhood and may not be easily influenced by treatment. Another reason may be attributed to the differential effects that productive and counterproductive perfectionism could have separately had (Roohafza et al., 2010). In addition, the unfamiliar web-based learning environment and the problems the learners were forced to bear due to the Coronavirus might have made learners demotivated during the treatment sessions, and this has been claimed to affect perfectionism (Dashtizadeh & Farvardin, 2016).

The results also indicated no significant differences among the treatment conditions on WTC. A number of studies support this finding and suggest that WTC differs in different individuals (e.g. Liu & Jackson, 2008) and this factor may influence learners' WTC more than the learning environment. The results of recent studies suggesting that variables like length of study, proficiency level, and opportunities to communicate with native speakers affect WTC also support the finding (Alemi et al., 2013; Csizer & Kormos, 2008). Further support for this finding comes from Cao and Philp (2006) and Khazaei, Zadeh and Ketabi (2012), who posit that WTC can be influenced by both contextual and environmental factors including familiarity with the interlocutor, group size, self-confidence, etc. This means that the effect of these factors might have outweighed that of our treatments.

On the other hand, this finding seems not to accord with that of Alikhani and Bagheridoust (2017), who reported that dynamic assessment provokes energy, interest, and motivation to take part in communicative activities; this is contrary to our finding which suggested the insignificant effect of the two types of DA on WTC.

Several reasons may be behind this result. One reason could be individual differences among learners (MacIntyre, 2007). Another reason may be that being introverted and extroverted might have influenced the degree of WTC. Other potential reasons may have been the gender and proficiency level of the learners (Alemi et al., 2013).

The results of the third question showed that both DA groups had significantly lower anxiety than the conventional group, while there was no significant mean difference between the two. This finding supports previous studies concerning the positive role of DA in reducing FLA (e.g., Estaji & Farahanynia, 2019; Shrestha & Coffin, 2012). According to Liu and Jackson (2008), lack of foreign language knowledge can cause anxiety. Therefore, adjusting mediation through the use of DA can help learners cope with their anxiety. This finding is also compatible with that of Kang (2005), suggesting that creating a friendlier learning environment

can reduce anxiety. According to Kozulin and Grab (2004), DA matches assessment to instruction, hence reducing learners' test anxiety.

On the other hand, the finding that there is no difference between interventionist and interactionist DA in reducing anxiety is in contradiction with that of Estaji and Farahanynia (2019), Sheen (2008), and Zhang and Rahimi (2014), who reported that interventionist DA was more effective in anxiety reduction. Contrary to these studies, Lantolf and Poehner (2011) hold that interactionist DA is more compatible with Vygotsky's theory of ZPD and, therefore, is more practical in diagnosing learners' difficulties and reducing their emotional problems including FLA. Our finding cannot fully support either of the above positions because we found no difference between the effectiveness of the two dimensions of DA. At the same time, the finding of our study partially supports both positions because both types of DA were more effective on anxiety reduction than the control condition.

This finding also seems not to accord with that of Worde (2003), who states that evaluation and error correction are anxiety provoking. Such reports imply that DA should be negatively effective on anxiety. The finding of this study showed that, contrary to such expectations, both dimensions of DA reduced anxiety.

Furthermore, since a negative relationship has already been reported between FLA and perfectionism, on the one hand, and WTC, on the other hand (Navidinia, Kazemi & Ghazanfari 2019), we expected that DA would influence perfectionism and WTC as well. However, the result of this study seems to be in line with that of Alemi et al. (2013), who rejected such interaction in their study.

Regarding the more significant role of interactionist and interventionist DA in reducing FLA compared to conventional instruction, it could be claimed that both approaches of dynamic assessment can create a more mediating environment and a friendlier atmosphere in addition to regarding learners' differences and abilities and thus help learners reduce their anxiety (Harding et al., 2015).

5. Conclusions and Implications

The present authors hope this study has shed light on DA literature and extended earlier understandings of preferable assessments in an EFL environment. Since both approaches of DA were significantly more effective than conventional instruction on reducing learners' FLA, it may be right to conclude that DA is a better alternative for efficient language evaluation than traditional instruction (Swain, 2001). At the same time, since the two models of DA were similarly effective on FLA, it may be concluded that blind adherence to either of the two models may not be advisable. Given that each model of dynamic assessment has its own strengths and weaknesses, it may be fair to conclude that mixing the two models may yield the best result by allowing learners to enjoy the best of both worlds.

These findings may have implications for teachers, students, and material developers. As Poehner and Lantolf (2010) suggest, DA has profound implications for language learning. DA principles can provide insights into not only L2 learners' abilities but also their feelings. Regarding learners' psychoanalysis, DA can prevent learning obstacles arising from their anxiety.

DA is not only beneficial for teachers in providing insights into learners' abilities (Harding et al., 2015) but is also fruitful in helping them classify learners according to their true levels of ability by considering the differences in their performance. Accordingly, teachers are suggested to employ DA to improve learners' abilities and reduce their FLA.

Language learners also benefit from DA because it can reduce their FLA. Besides, it can make them more autonomous. DA also allows for cooperative learning in which both the assessor and the learner work together to cope with the difficulties of learning (Poehner & Lantolf, 2010).

The findings can also have implications for material developers. They can design tasks that both facilitate learning and evaluate learners. In this way, learners can benefit from awareness-raising tasks and improve their autonomy in addition to enjoying the learning process. Teachers, on the other hand, can benefit from the mediating tasks and use them as a supplement to their teaching and evaluating process.

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