Interactionist and Interventionist Group Dynamic Assessment (GDA) and EFL Learners' Listening Comprehension Development

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ABSTRACT

Drawing on sociocultural theory, this study explored the impact of interactionist and interventionist approaches to group dynamic assessment (GDA) on Iranian intermediate English as a foreign language (EFL) learners’ listening comprehension development. To this end, 90 intermediate EFL learners were divided into two experimental and a control group. To ensure homogeneity of the proficiency level of participants, an abridged version of a sample TOEFL Junior Standard Test was administered to the participants. The listening comprehension section of the TOEFL Junior Standard Test served as the pre- and post-tests. Participants of each major group were then assigned into five subgroups of four and two subgroups of five members. During 13 treatment sessions, in the first experimental group the researcher participated in the subgroups’ class activities and applied interactionist approaches to interact and assist the group members in their listening comprehension activities. In the second experimental group, based on the sandwich model of interventionist approach to dynamic assessment, the researcher, while participating in the groups’ activities, provided the group members with a range of more implicit to explicit appropriate feedback. However, in the control group, the traditional summative forms of assessment were applied and interactive or interventionist DA assessment were avoided. The analyses including one sample T-Tests, ANOVA, and Tukey HSD post-hoc revealed that interactionist GDA was the most effective procedure for the intermediate EFL learners’ listening comprehension development. Moreover, although interventionist GDA procedure seemed to be more effective than NDA procedure of the control group, the superiority was not statistically significant. The findings underscore the primacy of interactive patterns of GDA and imply that the more the practitioners side away from unilateral and authoritative approaches of pedagogy in favor of the interactive and cooperative approaches, their educational endeavors will be more effective and consistent with the pedagogical objectives set for the listening comprehension development of EFL learner.

Keywords: EFL; Interactionist GDA; Interventionist GDA; Listening comprehension

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Introduction

Ever since around 1980s, and as a reaction to the perceived drawbacks of the dominant standardized paradigm of language testing, assessment practices have undergone a significant paradigm shift in the world (Sternberg & Grigorenko, 2002). In other words, alternative authentic assessment procedures have emerged to systematically measure learners’ abilities to apply previously acquired knowledge in solving new problems or completing particular tasks, and are considered as ways to modify instruction and assessment at the classroom levels and reform curricula (Linn, 1983, 1992; Lock, 2001; Noble & Smith, 1994a, 1994b; Popham, 1983).

Among such alternative approaches, dynamic assessment (DA) as a theory based developmental procedure has assumed a prominent status. It enables the assessor/instructor to discover the learners’ learning problems precisely, and assist them to overcome the difficulties (Lantolf & Throne, 2006). Such appropriate assistance is pedagogically favored as it joins two practically detached ends of educational process i.e., instruction and assessment, and it serves both ends (Lantolf & Throne, 2006).

Furthermore, as is reflected in DA literature, studies have verified it as an important means for gathering quality information about different aspects of education and development (e.g. Budoff, 1987; Feuerstein, Rand, Hoffman, & Miller, 1980) but the investigation of pedagogical impact of DA on second or foreign language (L2 / FL) skills including reading comprehension skill (e.g. Abdolrezapour, 2017; Kozulin &Garb, 2004; Mardani & Tavakoli, 2011), writing (e.g. Aljaafreh & Lantolf, 1994; Alavi & Taghizadeh, 2014), speaking (e.g. Anton, 2009; Poehner, 2005), and listening development (Ableeva, 2010, Ahmadi Safa & Rozati, 2017) has only been a relatively recent undertaking. In addition, although second language learners generally perceive listening comprehension as the most difficult language skill to develop (Graham, 2006), the smallest share of DA based L2 studies has targeted this skill (Ableeva, 2010). The dearth of attention to this skill might be partially indicative of the complexity involved and the challenging nature of listening comprehension development. As Vandergrift (2007) attests, listening is hard to learn for L2 or FL learners as it needs the listeners to use a wide range of knowledge sources to quickly interpret incoming data. To study such wide range of sources is even more complex due to a variety of reasons. Buck (2001) for one believes that it is a difficult skill to research since its processes are covert and unobservable.

Against this backdrop, although a number of recent studies have been carried out to identify factors that influence EFL learners' performance in listening comprehension tasks and tests (e.g. Révész & Brunfaut, 2013; Tavakoli, Hashemi, & Rezazadeh, 2012; Vandergrift & Goh, 2009), it seems only a limited number of studies (for example Ableeva, 2010; Ebadi & Vakili Latif, 2015; Farangi & Kheradmand Saadi, 2017; Hidri, 2014; Shabani, 2014; Wang, 2015) have investigated the effect of new and alternative modes of assessment including group dynamic assessment (GDA) on EFL learners’ listening comprehension ability.

Additionally, while a real need is felt to address the lacuna, it is likely that a deep examination of the processes and factors that underlie and affect L2 listening comprehension might be justifiably carried out applying GDA procedure as it is offering a solution to one of the main drawbacks of one-to-one dynamic assessment i.e., its lack of practicality particularly in large classroom contexts affected with time restraints, and at the same time, it is still preserving the developmental orientation dynamic assessment is built on. The present study intends to examine the significance through the implementation of interactionist and interventionist GDA procedures to groups of intermediate English Foreign Language (EFL) learners, and comparatively analyze the impact of the procedures on their listening comprehension development.
Review of the Related Literature

DA has its roots in Vygotsky's cultural historical psychology advocating the view that in the zone of proximal development (ZPD) instruction brings about development (Lantolf & Thorne, 2006). In applied linguistics and second language acquisition (SLA) research, Vygotskian cultural historical theory is often known as sociocultural theory (SCT). This theory introduces a framework based on which cognition needs to be studied considering the importance of the social context (Lantolf & Thorne, 2006). According to Lantolf (2004, p. 1), “despite the label ‘sociocultural’, the theory is not a theory of the social or the cultural aspects of human existence….it is, rather, a theory of mind…that recognizes the central role that social relationships and culturally constructed artifacts play in organizing uniquely human forms of thinking”. The ZPD is Vygotsky’s approach for understanding learning and development and their relationship. It is closely related to two prominent and interconnected constructs of mediation and internalization. According to this theory, humankind are continuously mediated by social practices, activities, and cultural artifacts, moreover, individuals could be mediated when they work alone. In such a case, they internalize what they have acquired from their previously experienced interactions with the surrounding world, so that a new cognitive functioning reemerges as a result of those interactions and they no longer need external environment as a mediational tool, i.e. they could selfmediate, or self-regulate themselves. An individual's independent performance is a sign of internalization. In contrast, an individual's inability to perform independently shows those kind of abilities that still form the next proximal level of development (Lantolf & Thorne, 2006).

Deeply rooted in SCT, DA is a procedure in which the assessor assists the examinee through intervention to perform better on individual items or on the test as a whole, and is generally a process in which the examiner desires to consider the results of intervention. In this approach the final score could be a gaining score which shows the difference between the pre and post-test scores, or it could be merely the post-test score (Sternberg & Grigorenko, 2002). In formal and non-dynamic approaches to assessment (NDA), the assessor gives items, one by one or as a whole test at once to each one of the examinees, and without offering any kind of feedback or intervention, asks them to take the test and it is only after the administration and scoring stages that each examinee typically receives a report on his/her score or set of scores (Sternberg & Grigorenko, 2002). This process is critically questioned by DA proponents. NDA exponents are deeply loyal to psychometrics principles and believe that the change in the person's performance during assessment process is a threat to test score reliability (Lantolf & Thorne, 2006), while, dynamic assessment specialists including Luria (1961) hold that any kind of assessment that is not capable of determining the changeable and modifiable nature of the person's performance is incomplete. Luria maintained that offering assistance to the child during assessment shows a more complete picture of the child's level of cognitive functioning and “psychometric tests do not close the problem; they only open the problem” (Luria, 1961, p.5).

Two basic DA approaches are introduced in the literature. The first one is developed based on Vygotsky's early writing on IQ testing in school and is more quantitative in nature. Lantolf and Poehner (2004) call this approach as ‘interventionist’ DA. The mediator, in interventionist approaches to DA, standardizes the mediation, so that it is similar for all learners (Fulcher, 2010). The second approach is grounded in Vygotsky's later writings and prioritizes instruction/learning over statistical measurement, and adopts an interpretive approach to assessment. Lantolf and Poehner (2004) name this approach ‘interactionist’ DA. The mediator, in interactionist approaches to DA, interacts with the learner and continuously assesses his current level of development. This ‘interaction’ provides the rationale for the use of the word ‘dynamic’ (Fulcher, 2010).
Interventionist DA applies standardized forms of assistance to obtain quantitative results which are used to compare students' abilities before and after intervention, and to make predictions about their performance on future tests. It considers scores, as an amount of help needed for a learner to effectively achieve a desired outcome (Poehner, 2008), and as an “index of speed of learning” (Brown and Ferrara, 1985, p. 300). Sternberg and Grigorenko (2002) introduce two interventionist DA procedures and call them ‘sandwich’ and ‘cake’ approaches. The sandwich format is approximately similar to traditional experimental research design in that it applies pretest, mediation, and post-test design. In this approach mediation or treatment is 'sandwiched' between a pre-test and post-test. To determine the extent of the improvement, the examinees' performances on the post-test and pre-test are compared (Poehner, 2005). However, in layer-cake format, assessment includes the teacher intervention during the test administration. In this format, if the examinee cannot answer an item correctly, the teacher intervenes and applying preselected and designed hints mediates the test taker's performance. Meanwhile his learning ability is evaluated during intervention process. Feedback is given until the examinee manages to perform the pre-determined task (Poehner, 2008).

On the other hand, interactionist DA is based on Vygotsky's ideas about the effective role of cooperative dialogue. In this approach, assistance is completely coordinated with the learner's ZPD, and can be identified based on the interaction between the learner and the mediator. Interactionist DA is not concerned with the predetermined endpoint of learning or the effort needed in this process, but is only concerned with the development of an individual learner or even a group of learners (Poehner, 2008).

Lantolf and Poehner (2007, p.53) introduce 'graduated prompt', 'testing the limits', and the 'mediated learning experience' as three DA techniques. Graduated prompt, and testing the limits are interventionist techniques in essence, but the mediated learning experience is an interactionist technique in nature. Each one of the techniques can be applied in both ‘cake’ or ‘sandwich’ approaches. The ‘cake’ approach, involves mediation after each task or item, and can practically be used with individuals. On the other hand, in ‘sandwich’ approach, mediation is applied at the end of a task or test, and can also be used with groups (Fulcher, 2010).

In most second language DA studies, researchers have preferred a one-to-one teacher-learner procedure (e.g. Ableeva, 2010; Anton, 2009). While it is quite clear that this form of administration could be a time-consuming and unpractical model for a classroom teacher whose responsibility is to manage a group of learners and not just an individual, according to Vygotsky's (1998) definition ZPD, it is possible to mediate a group of learners' performances, and help them co-construct a group's ZPD through group dynamic assessment (GDA) procedures (Poehner, 2009; Poehner & Lantolf, 2005).

Poehner (2009) believes that the exchanges which occur in front of group members in the classroom have mediating potential for the rest of the group as well. He distinguishes primary interactants from secondary interactants. Primary interactant refers to the teacher and a student with whom he negotiates his linguistic support, and the secondary interactant refers to the students who listen and benefit from the primary interactants' exchanges. Furthermore, he identifies two approaches to GDA; concurrent and cumulative. In concurrent GDA, the teacher interacts with the whole group. In this approach to GDA, the extended one to one interaction is absent so that it may seem similar to entire class instruction. If needed, the teacher provides mediation in response to an individual's problem, but as soon as another learner struggles, questions, or raises a comment; the interaction shifts for another's contribution. In cumulative GDA, the teacher runs a set of one-to-one interactions with the group members and the individuals engage in interactions with the teacher, while taking advantage of earlier one-to-one exchanges that the class observed. Concurrent GDA is to promote each individual by working within the group's ZPD but Cumulative GDA promotes the group through co-constructing individuals' ZPDs (Poehner, 2009, p.476).
Although several approved the positive influence of DA on some aspects of second language learning (e.g., Ahmadi Safa & Jafari, 2017; Sohrabi, 2016; Zhang, Lai, Cheng, and Chen; 2017), to the best knowledge of the researchers, rare studies have investigated the impact of DA on listening skill. Ableeva (2008), as an instance, investigated the effects of interactionist DA on L2 listening comprehension and examined its potential contributions to listening comprehension instruction and assessment. To this end, six 18-20 undergraduate students were asked to fill out a questionnaire about their L2 learning background. Participants went through the pretest, mediation process (DA intervention), and retest stages. The results showed that DA improved and facilitated intermediate university L2 learners' comprehension of authentic aural language. The findings also indicated that DA approach to listening could help teachers determine comprehension problems.

In another study Hidri (2014) compared the effectiveness of non-dynamic and dynamic assessment of L2 listening comprehension. Sixty freshman EFL students from a university in Tunisia took a listening comprehension test including two parts, i.e. static (Non-Dynamic, NDA) and dynamic. The tests were scored by 11 raters. The raters and test-takers were interviewed in an attempt to investigate their attitudes concerning both parts of the tests. The scores were analyzed using the Multi-Facet Rasch Measurement model. The findings revealed that DA provided superior understandings about learners' cognitive and meta-cognitive processes compared with what did the traditional assessment.

Wang (2015) also examined whether DA could improve the students' ability in listening comprehension. Five students from a college in China participated in the study. A cake format DA was used by the researcher so that the participants were initially played a series of audio materials and requested to express what they comprehended from the audio information. The researcher identified the students' problems and intervened to mediate the task completion. For the second time, the participants were played the audio material as much as needed and they were asked to summarize the same audio material. The analyses showed that dynamic assessment can offer a deeper understanding of the problems associated with the learners' listening comprehension to both researchers and the participants.

In another study by Farangi and Kheradmand Saadi (2017), the effectiveness of schema theory, a notion defined as “a set of interrelated features which we associate with an entity or concept” (Field, 2003), and that of DA for improving EFL learners’ listening abilities were compared. The researchers chose two intact classes, each including 42 EFL learners. The dynamic assessment group engaged in a pretest-enrichment-posttest design and the schema theory group adopted a pre-listening, listening, and post-listening design. Findings demonstrated that both groups' listening comprehension developed from pre to posttest and although the schema group achieved higher scores in the posttest, the results of analyses revealed no significant difference between the groups in their listening comprehension ability.

Furthermore, following DA framework, Ebadi and Vakili Latif (2015) studied the efficacy of computerized concept mapping for the improvement of listening comprehension ability of two female EFL learners through investigating the related changes in their ZPD. The participants were involved in ten DA sessions and were requested to create concept maps for the listening passages. The findings showed that the learners moved from mediation internalization to the self-regulation extreme which means that the learners could attain a higher ZPD level in their listening comprehension ability.

Poehner (2005), described how dynamic assessment could be used to depict a complete picture of learner development. In his study, six advanced undergraduate learners orally narrated a short video clip in L2. The participants watched the video clip four times. The first time they narrated
the video without mediation. The second time, they narrated the scene with the help of mediator. After the initial video watching, the students received interactionist DA tutoring program based on their needs, strength, and weaknesses. After six weeks of tutoring and two sessions per week, the independent and mediated narration tasks were re-administrated to the learners. In addition, they were required to take a transfer task too. The results showed that DA was an effective way for teachers to gain an understanding of their learners' abilities and assist them to overcome linguistic problems.

Unlike listening comprehension skill which has scarcely been targeted in DA studies, other L2 skills have been better-off in this regard. Abdolrezapour (2017), Kozulin and Garb (2004), Pishghadam, Barabadi, and Kamrood (2011) studied the contribution of interactionist dynamic assessment to the reading comprehension development of learners. The results showed that the dynamic assessment significantly improved the reading comprehension ability of the students. Following interventionist approach to DA, Ebadi and Saeedian (2016) investigated Transcendence in EFL learners' reading comprehension. The results indicated that task complexity could enhance learners' development. Moreover, it was found that there is no endpoint to progress and a one shot score is not capable to present a full picture of learners' abilities. On the other hand, Mardani and Tavakoli (2011) applied interventionist model of DA to assess reading comprehension of EFL learners and reported significant improvement in the participants' reading comprehension as a result of DA.

Writing skill has also been targeted in a number of DA based studies. Shrestha and Coffin (2012) for instance, investigated the role of interactionist model of DA and tutor mediation in undergraduate students' academic writing development in open and distance learning. The analyses suggested that DA could help teachers identify and respond to the learners' need, and that DA as a theory-driven learning approach can lead to undergraduate students' academic writing development. Shabani (2018) also tested the influence of group dynamic assessment (GDA) on L2 learners' writing ability. The results showed that the experimental group members who received GDA, prompts, hints, and scaffolding outperformed the control group members who did not receive GDA and negotiation. The findings also revealed that GDA could diagnose sources of learners' writing problems and move the entire class forward in its ZPD while co-constructing ZPDs with individual learners.

Finally, although studies (e.g., Ahmadi Safa, Donyaei, & Malek Mohamadi, 2016; Ahmadi Safa & Jafari, 2017; Anto'n, 2009; Lin, 2010; Sohrabi, 2016; Zhang, Lai, Cheng, & Chen, 2017) have focused on different aspects of second or foreign language development and the emphasis on dynamic assessment practices has recently gained momentum in educational settings, to the best knowledge of the researchers, little attention is paid to the effect of interactionist and interventionist GDA on listening comprehension development. Against this backdrop, the purpose of the current study is to explore the educational impact of interactionist and interventionist GDA activities on intermediate EFL learners' listening comprehension development. To this end, the following research questions were proposed.

**Research questions**

1. Does interactionist GDA have any significant effect on the listening comprehension improvement of Iranian intermediate EFL learners?
2. Does interventionist GDA have any significant effect on the listening comprehension improvement of Iranian intermediate EFL learners?
3. Is there any significant difference among the effectiveness of interactionist GDA, interventionist GDA and Non-dynamic assessment on the listening comprehension improvement of Iranian intermediate EFL learners?

**Method**

**Participants**

The participants of the current study were 90 Iranian female intermediate EFL learners who were selected from intermediate level classrooms of several English language institutes in Hamedan province of Iran based on the results of an abridged version of a sample TOEFL Junior Standard Test. According to the Common European Framework of Reference (CEFR), the researchers transformed the number of correct responses of the learners to a scaled score that ranged from 200 to 300, and then allocated learners to different levels of below A2, CEFR Level A2, CEFR Level B1, and CEFR Level B2. The learners whose listening comprehension scores fell under 225 were assigned to below A2, those whose scores fell between 225 to 245 were assigned to CEFR Level A2, those whose scores fell between 250 to 285 were assigned to CEFR Level B1, and those whose scores fell between 290-300 were assigned to CEFR Level B2 (Educational Testing Service, 2015). According to the test bad score descriptor, those whose score were between 250 and 285 were considered as intermediate participants and were chosen to be included in the study. Because of the limited number of learners in English institutes, the researchers chose students who met the aforementioned criteria, i.e. those who were at intermediate level, from several classes and congregated them to form single experimental or control groups. Two groups served as experimental groups (30 female student in each group), and one group including 30 female EFL learners served as a control group. The participants were randomly assigned to the groups. Age of the learners also ranged from 15 to 26.

**Instruments and materials**

Four instruments were used in this study. The first one was an abridged version of a sample TOEFL Junior Standard Test which served to assess the proficiency level of the participants. TOEFL Junior Standard test is a paper-based test consisting of 126 multiple-choice question items. It includes three sections — Listening Comprehension, Language Form and Meaning, and Reading Comprehension. Each section contains 42 four-choice question items with a total testing time of 2 hours. The Listening Comprehension section measures the ability to listen and comprehend English for interpersonal purposes, instructional purposes, and academic purposes. The Language Form and Meaning section measures the ability to demonstrate proficiency in key enabling English skills such as grammar and vocabulary in context. The Reading Comprehension section measures the ability to read and understand academic and nonacademic texts written in English (Educational Testing Service, 2015). To abridge sample TOEFL Junior Standard test, the researcher selected only even items of the original test. As a result, the abridged version of TOEFL Junior included three sections that each one contained 21 multiple choice items with a total testing time of 1 hour. Two experts of the field were asked to give their ideas about the items included in the tests. The reliability index of the abridged test was reassessed using Cronbach's alpha. The reliability of the test, was estimated to be .82.

The second instrument was the listening comprehension section of the abridged sample TOEFL Junior Standard Test which served as the pre-test and the post-test. Listening Comprehension section contained 21 multiple choice with a total testing time of 20 minutes. Moreover, the reliability estimate (Cronbach's alpha) was utilized to reassess the reliability of the listening
comprehension section of the abridged version of the sample TOEFL Junior Standard Test. The reliability of the test was estimated to be .75.

The third instrument included 13 authentic short animation videos which were used as both classroom materials and tests (see Appendix A). Such short animation videos were used because video files and materials could motivate learners to listen, provide a sample of authentic language use, help learners understand the cultural contexts in which the language is used, and introduce the paralinguistic features of spoken text to the learners (Flowerdew & Miller, 2005) and could be entertaining and amusing channels of second language instruction.

The fourth class of instruments were 13 researcher made animation related listening comprehension quizzes used both as classroom materials and tests. A distinctive quiz was developed for each specific video file, and each quiz included different number of multiple choice question items, ranging from four to eight according to the time length of the animation (see Appendix B). Two experts of the field were asked to give their ideas about the items. In addition, to assess the reliability of the animation-related listening comprehension quizzes, a series of Cronbach's alpha estimates were run the results of which are shown in Table 1.

### Table 1

<table>
<thead>
<tr>
<th>Quiz</th>
<th>N of items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars Toon-Time Travel Mater</td>
<td>¥</td>
<td>.76</td>
</tr>
<tr>
<td>Dug's Special Mission</td>
<td>©</td>
<td>.73</td>
</tr>
<tr>
<td>Frozen Fever</td>
<td>¥</td>
<td>.77</td>
</tr>
<tr>
<td>George &amp; A.J.</td>
<td>©</td>
<td>.76</td>
</tr>
<tr>
<td>Granny O Grimm Sleeping Beauty</td>
<td>©</td>
<td>.74</td>
</tr>
<tr>
<td>Hawaiian Vacation</td>
<td>¥</td>
<td>.76</td>
</tr>
<tr>
<td>Jack-Jack Attack</td>
<td>©</td>
<td>.75</td>
</tr>
<tr>
<td>Mater and Ghost light</td>
<td>¥</td>
<td>.76</td>
</tr>
<tr>
<td>Mike's New Car</td>
<td>¥</td>
<td>.72</td>
</tr>
<tr>
<td>Partysaurus Rex</td>
<td>¥</td>
<td>.74</td>
</tr>
<tr>
<td>Small Fry</td>
<td>¥</td>
<td>.71</td>
</tr>
<tr>
<td>Tangled Ever After</td>
<td>¥</td>
<td>.71</td>
</tr>
<tr>
<td>The Legend of Mordu</td>
<td>¥</td>
<td>.78</td>
</tr>
</tbody>
</table>

### Procedures

The very first step taken by the researchers was to identify the intermediate level institutional EFL classes that were to participate in the study and to obtain their informed consent. Next, the abridged sample TOEFL Junior Standard Test was administered to several identified intact EFL classes of different English institutes in Hamedan. To ensure homogeneity of the English proficiency level of the learners, the Common European Framework of Reference (CEFR) band descriptor was used to categorize the participants’ proficiency levels. The researchers converted the number of correct responses of the learners on each section to a scaled score that ranged from 200 to 300 in increments of 5, and then assigned learners to different levels including below A2, CEFR Level A2, CEFR Level B1, and CEFR Level B2. Those learners whose listening comprehension scores fell between 250 to 285 were assigned to CEFR Level B1 and were considered as intermediate learners (Educational Testing Service, 2015). As the analyses of the test results verified the general English proficiency homogeneity of the groups and due to the fact that institutional classes of EFL are usually held with maximum number of 10 to 15 participants, depending on the number of participants in given classes two to three classes were literally aggregated and considered as a single research group comprising 30 EFL learners. Two research
groups (each consisting of 30 participants) were randomly chosen as the experimental groups and another group was considered as the control group. Afterwards, the teacher assigned the participants of each group to several subgroups including four or five co-equal intermediate members based on their previously obtained TOEFL junior scores and CEFR levels. Co-equal peers in each group were those who were at the same CEFR level. Next, except for sessions one and fifteen which were allocated to pretest and posttest administration, during around a six-week span of treatment, 13 forty-five class sessions were held for the experimental and control groups.

In the first experimental group, randomly chosen as the interactionist GDA group, each session the researcher asked participants to watch and listen to a short animation episode following which they discussed and shared their understanding in their own subgroups. Next, they were asked to individually take the related listening comprehension quiz. Then, the researcher participated in each subgroup for a specified period of time. Following the cumulative approach to GDA, the teacher called a student to answer the first question while ensuring that the other learners were actively listening. If the learner's answer was correct she asked her to discuss the answer and delve into why it was correct and if the answer was incorrect, she provided her with an appropriate form of mediation and instruction. The mediation was negotiated between the teacher and the learner and it was flexible. The researcher offered hints, leading questions, explicit feedback and suggestions as procedures which are in accordance with interactionist approaches to DA. The interaction between the teacher and the learner continued until the learner could reach the correct answer. The students took turns “engaging directly as primary interactants with the teacher, with the understanding that each subsequent one-on-one exchange will have the advantage of building on earlier interactions that the group members witnessed” (Poehner, 2009, p. 478).

The procedures in the second experimental group were similar to the first experimental group. However, the only difference was that applying Ableeva's (2010) regulatory scale, the researcher gave the learner appropriate prompts and hints ranging from the most implicit to most explicit feedback until the learner could reach the correct answer. The scale consisted of 10 levels of intervention. If the implicit end of the scale was unsuccessful, the teacher applied a more explicit form of mediation until the learner was able to make corrections. Finally, if required, the teacher explicitly corrected the error and in case she felt that the learner did not understand the solution, she provided the learner with a detailed explanation. Similar to the first experimental group, the participants took turns engaging directly as primary interactants with the teacher (see Appendix C).

In the control group, each session the teacher first asked participants to listen to the short animation episodes and negotiate their understanding in their own subgroups, and then individually respond to the quiz items. However, in this group, the researcher did not join the subgroups to interact or mediate their performance in listening comprehension quiz items. This means that the teacher did not apply GDA procedures. Instead, she collected the learners’ quiz paper and announced their scores in the following session.

Finally, after the pretest and treatment sessions i.e., 13 forty-five minute sessions, the researchers administrated the listening comprehension post-test to the participants of experimental groups and the control group (session 15).

Results

In order to test the normality of the obtained data, Kolmogrov-Smirnov test was run on the TOEFL junior, pre, and posttests’ scores of the participants of the three groups, the results of which are summarized in Table 2.
Table 2

Kolmogorov-Smirnov Test of Normality for the Three Groups' TOEFL Junior, Pre, and Posttests' Scores

<table>
<thead>
<tr>
<th>Test</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOEFL junior</td>
<td>.083</td>
<td>90</td>
<td>.173</td>
</tr>
<tr>
<td>Pre</td>
<td>.081</td>
<td>90</td>
<td>.197</td>
</tr>
<tr>
<td>Posttest</td>
<td>.075</td>
<td>90</td>
<td>.200</td>
</tr>
</tbody>
</table>

As shown in Table 2 the obtained data were normally distributed since all p-values fell above significance level (p=.17, .19, .2>.05).

To ensure the homogeneity of the groups regarding the general proficiency, a one way ANOVA Test was run on the TOEFL junior proficiency test scores, the results of which are shown in Tables 3, 4, and 5.

Table 3

Descriptive Statistics of the Three Groups' Scores in TOEFL Junior Test

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactionist</td>
<td>30</td>
<td>29.60</td>
<td>10.427</td>
<td>1.904</td>
<td>25.71</td>
<td>33.49</td>
<td>8</td>
<td>52</td>
</tr>
<tr>
<td>Interventionist</td>
<td>30</td>
<td>29.27</td>
<td>10.405</td>
<td>1.900</td>
<td>25.38</td>
<td>33.15</td>
<td>6</td>
<td>51</td>
</tr>
<tr>
<td>Non-dynamic</td>
<td>30</td>
<td>29.90</td>
<td>10.314</td>
<td>1.883</td>
<td>26.05</td>
<td>33.75</td>
<td>7</td>
<td>53</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>29.59</td>
<td>10.268</td>
<td>1.082</td>
<td>27.44</td>
<td>31.74</td>
<td>6</td>
<td>53</td>
</tr>
</tbody>
</table>

As Table 3 indicates, it seems that there was a little difference among the means of the three groups in the TOEFL junior proficiency test scores. However, to see if the differences were significant or not, a one-way ANOVA analysis was used.

Table 4

Test of Homogeneity of Variances of the Three Groups' Scores in TOEFL Junior Test

Levene Statistic | df1 | df2 | Sig.  |
-----------------|-----|-----|-------|
.063             | 2   | 87  | .939  |

Table 4 revealed that the assumption of homogeneity of variances was not violated (sig=.939).

Table 5

One way ANOVA Analysis of the TOEFL Junior Scores of Interactionist GDA, Interventionist GDA, and NDA Groups' Participants

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>6.022</td>
<td>2</td>
<td>3.011</td>
<td>.028</td>
<td>.972</td>
</tr>
<tr>
<td>Within Groups</td>
<td>9377.767</td>
<td>87</td>
<td>107.790</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The one way ANOVA analysis of the TOEFL Junior test scores revealed that there was no significant difference at the p<.05 level in proficiency scores for the three groups at the outset of the research: F (2, 89) =.028, p=.97.

To ensure the homogeneity of the groups regarding the listening comprehension ability, a one way ANOVA Test was run on the pretest scores (see Appendix D). The results revealed no significant difference at the p<.05 level in listening comprehension scores of the three groups at the outset of the research: F (2, 89) =.028, p=.99.

In order to address research questions one and two regarding the efficacy of the interactionist and interventionist dynamic assessment on the listening comprehension improvement of the intermediate EFL learners, two one samples t-tests were run. The results are shown in Table 6.

<table>
<thead>
<tr>
<th>Table 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive Statistics of Pretest and Posttest Scores of the Two Groups</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Pair 2</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 6, the descriptive data reveals that there was an increase in listening scores from pretest to posttest in the two groups. However, the statistical significance of the differences was to be tested against the data obtained from one Samples t-test.

<table>
<thead>
<tr>
<th>Table 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Samples t-test Analysis of the Pretest and Posttest Scores of the Three Groups</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
</tr>
<tr>
<td>Pair 2</td>
</tr>
</tbody>
</table>

As indicated in Table 7, the null hypotheses assuming no significant difference among the two groups' pretest and posttest scores was rejected. A statistically significant increase was found in the scores from pretest (M=11.20, SD=3.995) to posttest (M=15.03, SD=3.970), t (29) =-45.531, p<.05(two-tailed) in Group1 (interactionist GDA group). The mean increase was 3.83 with a 95% confidence interval ranging from -4.006 to -3.661. According to Cohen (1988, pp.284-287), the eta squared statistic (.90) indicated a large effect size.
Moreover, a statistically significant increase was found in the scores from pretest (M=11.07, SD=4.068) to posttest 2(M=13.77, SD=4.032), t (29) = -27.643, p<.05(two-tailed) in Group2 (interventionist GDA group). The mean increase was 2.70 with a 95% confidence interval ranging from -2.90 to -2.50. According to Cohen (1988, pp.284-287), the eta squared statistic (.96) indicated a large effect size.

In order to see if there were significant differences among all the three groups' posttest scores, a one-way ANOVA Test was run.

**Table 8**
Descriptive Statistics of the Posttest Scores of the Three Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactionist</td>
<td>30</td>
<td>15.03</td>
<td>3.970</td>
<td>.725</td>
<td>13.55</td>
<td>16.52</td>
<td></td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>Interventionist</td>
<td>30</td>
<td>13.77</td>
<td>4.032</td>
<td>.736</td>
<td>12.26</td>
<td>15.27</td>
<td></td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Non-dynamic</td>
<td>30</td>
<td>11.73</td>
<td>3.162</td>
<td>.577</td>
<td>10.55</td>
<td>12.91</td>
<td></td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>13.51</td>
<td>3.944</td>
<td>.416</td>
<td>12.69</td>
<td>14.34</td>
<td></td>
<td>5</td>
<td>21</td>
</tr>
</tbody>
</table>

The descriptive statistics in Table 8 indicates that the means of posttest results in interactionist group was approximately higher than that of the interventionist dynamic assessment group. Moreover, the mean score of interventionist dynamic assessment group was higher than the posttest mean score of non-dynamic assessment control group. To see if the differences were significant, a one-way ANOVA analysis was run.

**Table 9**
Test of Homogeneity of Variances of the Three Groups

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.391</td>
<td>2</td>
<td>87</td>
<td>.254</td>
</tr>
</tbody>
</table>

As is evident in Table 9, the assumption of homogeneity of variances was not violated (sig=.254).

**Table 10**
One way ANOVA Analysis of the Posttest Scores of the Three Groups

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>166.289</td>
<td>2</td>
<td>83.144</td>
<td>5.938</td>
<td>.004</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1218.200</td>
<td>87</td>
<td>14.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1384.489</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Considering the sig. column in Table 10, it could be seen that there was a statistically significant difference at the p<.05 level in posttests scores for the three groups: F (2, 89) = 5.938, p = .004. The eta squared, was 0.12. According to Cohen (1988, pp.284-287), the actual difference in mean scores between the groups was medium.
Although significant differences were found in mean scores across the groups, to find out where the differences exactly lie, Tukey HSD post-hoc test were run. The results are displayed in Table 11.

Table 11

<table>
<thead>
<tr>
<th>(I) Group</th>
<th>(J) Group</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactionist</td>
<td>Interventionist</td>
<td>1.267</td>
<td>.966</td>
<td>.393</td>
<td>-1.04 - 3.57</td>
</tr>
<tr>
<td>Non-dynamic</td>
<td>Interventionist</td>
<td>3.300*</td>
<td>.966</td>
<td>.003</td>
<td>1.00 - 5.60</td>
</tr>
<tr>
<td>Interventionist</td>
<td>Non-dynamic</td>
<td>-1.267</td>
<td>.966</td>
<td>.393</td>
<td>-3.57 - 1.04</td>
</tr>
<tr>
<td>Non-dynamic</td>
<td>Interventionist</td>
<td>-3.300*</td>
<td>.966</td>
<td>.003</td>
<td>-5.60 - 1.00</td>
</tr>
<tr>
<td>Interventionist</td>
<td>Non-dynamic</td>
<td>2.033</td>
<td>.966</td>
<td>.095</td>
<td>-4.34 - .27</td>
</tr>
</tbody>
</table>

As can be seen in Table 11, post-hoc comparisons indicated that the mean score for interactionist GDA group (M=15.03, SD=3.970) was significantly different from that of non-dynamic assessment group (M=11.73, SD=3.162), while interventionist GDA group (M=13.77, SD=4.032) did not differ significantly from interactionist GDA and non-dynamic assessment groups.

Discussion

The first research question aimed at investigating the impact of interactionist GDA on the listening comprehension development of Iranian intermediate EFL learners. The results of analyses revealed that interactionist GDA, had significant effect on the listening comprehension of Iranian intermediate EFL learners. The findings in this regard are in line with theoretical postulates about the determining role of the interactionist DA (Luria, 1961; Vygotsky, 1997) and GDA (Poehner, 2009) in second language development. Our findings confirmed that of Gibbons (2003), who found that GDA and teacher’s interactive mediation results in a more specialist L2 ability. There seems to be some explanations for this piece of finding. One possible explanation might be related to the potential capability of GDA to widen the focus of mediation to an entire class by constructing group ZPD through negotiating mediation with more than one person (Poehner, 2009). Some other influential factors seem to include the type and quality of the mediations offered by the teacher. For instance, Interactive approaches to DA appear to improve learners’ attention to task, motivation, and ability to plan and self-regulate (Pena & Gillam, 2000). Moreover, interactionist DA is not primarily concerned with the predetermined endpoint of learning or the effort needed in this process, but is only concerned with the development of an individual learner or even a group of learners which might have positive effect on the learners' development (Poehner, 2008). Several studies support this piece of finding. Ableeva (2008) for example, maintained that an interactionist DA could improve and facilitate intermediate university L2 learners' listening comprehension. Abdolrezapour (2017) also showed the beneficial impact of interactionist DA on L2 learning, and Shrestha and Coffin (2012) revealed that interactionist DA can lead to undergraduate students’ L2 development. Furthermore, the results are in line with that of Mardani and Tavakoli (2011), who found that interactionist model of dynamic assessment, and
mediational support had a significant effect on improving learners' L2 ability. Finally, the beneficial effects of interactionist DA on learning might be due to developmentally helpful role of instruction in the learners' zone of proximal development (Lantolf & Thorne, 2006).

The second research question addressed the effect of interventionist GDA on the EFL learners' listening comprehension Development. The obtained data confirmed the significant positive impact of interventionist GDA on the development of the listening comprehension ability of Iranian intermediate EFL learners. The findings of this study support that of Lantolf and Poehner (as cited in Poehner, 2009) who confirmed the beneficial role of cumulative GDA in forming a dynamic picture of the class development which in turn could help the teachers to evaluate the quality of interactions based on student's reciprocity to mediating moves. One justification for this finding seems to be the point that GDA takes account of the group's ZPD and pushes ZPD of the group forward, while simultaneously benefitting each one of the group members. GDA might also pave the way for the group to take a step beyond the present capabilities of each one of the individual members of the group (Poehner, 2009). Individualistic negotiations in interventionist DA format during whole class activities might also play role in the improvement of the learners. Consistent with this piece of finding, Pishghadam, Barabadi, and Kamrood (2011), suggested that interventionist approach to DA and mediation had a significant effect on L2 development. Moreover, Zhang, Lai, Cheng, and Chen (2017) confirmed the positive influence of the graduated prompting assessment for the students' academic performance. Kozulin and Grab (2004) also found a significant positive impact for interventionist dynamic assessment of L3 learners and its potentiality for offering more information about students' abilities. One possible explanation for such impact might be related to the fact that predetermined mediations which were provided through interventionist DA procedures for learners in a group might favor other learners in a group and assist learners to experience cognitive changes and internalize new knowledge. This is consistent with Vygotsky's (1978) sociocultural theory postulates indicating that individuals could internalize some rules as a result of their mediated interactions with the symbols, tools, and peoples of a specific culture.

The third research question aimed at investigating the difference between the effectiveness of interactionist GDA, interventionist GDA, and Non-dynamic assessment on listening comprehension improvement of intermediate EFL learners. The results showed a significant difference among all three types of assessment. Although post-hoc analyses showed the significant difference between interactionist GDA and non-dynamic assessment with interactionist GDA outperforming non-dynamic assessment, based on descriptive statistics and class observations it seems that interventionist GDA group also outperformed non-dynamic assessment group. Apparently, the non-significant statistical difference between these two groups might be justified considering the relative short time period of the study intervention which might limit the emergence of the subsequent incurred impacts of treatment. The findings of the study corroborate that of Abdolrezapour (2017), who claimed that students who received interactionist DA procedure generally performed better than those who did not go through DA in the second language classroom. Moreover, Zhang, Lai, Cheng, and Chen (2017), Ahmadi Safa, Donyee, and Malek Mohamadi, 2016, and Sohrabi, (2016) also found that interventionist DA was more effective than non-dynamic assessment for the improvement of L2 learning. One justification for the higher efficiency of GDA over non-dynamic assessment might be relevant to the postulate that GDA changes the focus from products of previous learnings to the processes of learning (Poehner, 2009) and in so doing not only it assists the teacher to discover the learners' difficulties, but also helps them to provide students with required support to overcome the problems. Another helpful and justifying privilege of GDA might be the idea that mediations offered through this procedure to individuals are simultaneously directed to the whole group (Poehner, 2009). This seems to enhance the development of the all group members. In other words, GDA, particularly cumulative GDA, helps to the co-constructs of the whole groups' Zone of Proximal Development (GZPD) since when primary interactants negotiate, the information exchanged
might also benefit secondary interactants of the group and hence the whole groups' zone of proximal development expands, a point Ohta (2001) in her study of private speech attested to as well. Conducting DA through individual negotiations during whole class activities also might present a more complete picture of development and what the learner is capable of which in turn might influence the quality of instruction and assessment of the learners. In GDA, the teacher and the learners both work for the final success of the students. Lidz and Gindis (2003, p. 103) maintain that 'traditional standardized assessment follows the child's cognitive performance to the point of “failure” in independent functioning, whereas GDA in the Vygotskian tradition leads the child to the point of achievement of success in joint or shared activity'. In addition, GDA seems to focus on a mediation that is in service of development. Elkonin (1998, p.299) contends that interaction between the learner and the teacher ‘is not a factor of development, not what acts from outside on what is already there, but a source of development’.

Although the post hoc analyses did not verify the statistical significance of the differences between interactionist and interventionist GDA procedures, at the logical level of significance of the differences between the two and based on the descriptive statistic results and in-situ observations of the researchers, interactionist GDA procedures seem to be of more educational value than the interventionist procedures. Such a finds support when one considers the quality of instruction and type of mediations and feedbacks offered during interactionist GDA. Our claim in this respect are in line with that of Ahmadi Safa and Jafari (2017), who confirmed the positive effect of DA on second language learning, with interactionist approaches to DA being more effective than interventionist approaches to DA. Another explanation for the findings seems to be related to the fact that the interactionist GDA similar to interactionist DA is more sensitive to individual's ZPD (Fulcher, 2010) and, as a result, might be more efficient means to account for psychological processes involved in learning and more powerful means for diagnosing suitable kinds of mediation and instruction (Poehner, 2008). Interactionist GDA may help teachers to offer students appropriate kinds of feedback, and assist learners to find sources of their linguistic problems through negotiation of meaning and mediation. Additionally, getting the whole class involved as secondary interactants and do a series of one-to-one interactions, interactionist DA might give learners the opportunity to receive graduated and emergent instruction finely tuned to their particular needs.

The interactionist approaches to DA might also be more clinical than psychometric as following a series of one-to-one interactionist DA might provide teachers with opportunities to get access to psychological processes which might be accessible only through interaction with individuals. As a consequence, it could be contended that primary and secondary interactants might both take advantage of the beneficial role of the interactionist DA. Interventionist approaches to GDA on the other hand, appear to focus more on psychometric properties of traditional forms of assessment or static assessment and may not be finely tuned to learners' ZPDs.

**Conclusion and Implications**

The findings of the study verified that listening comprehension ability of all the three groups improved from pretest to posttest. However, interactionist GDA was more effective for the intermediate EFL learners’ listening comprehension development than the interventionist GDA and non-dynamic assessment respectively.

Accordingly, teachers are advised to implement GDA in their educational contexts as the results of the present study and similar studies reviewed reveal that DA approaches support positive developments, and empower teachers in shaping their own assessment and pedagogical practices.
Furthermore, the findings imply that EFL teachers may need to consider the positive impact of interactionist GDA on the listening comprehension improvement of intermediate EFL learners and provide their learners with more opportunities to interact and receive assistance. The results of this study may also suggest a change in the traditional models of listening comprehension assessment which emphasize psychometric quantification of students' performances and offer no opportunities for learner-teacher interaction and developmental perspectives.

References


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