Group dynamic assessment vs. computerized dynamic assessment: impacts on L2 listening development, L2 students' perfectionism, foreign language anxiety, and intrinsic motivation

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Abstract

Dynamic assessment is heavily based on Vygotskian socio-cultural theory and in recent years researchers have shown interest in the theory as a way to facilitate learning. This study attempted to examine the comparative effect of group dynamic assessment (GDA) and computerized dynamic assessment (CDA) on listening development, L2 learners' perfectionism, anxiety, and intrinsic motivation. To this end, 91 intermediate learners of English were selected based on convenience sampling and were divided into 3 groups: a GDA, a CDA, and a control group (CG). After implementing the treatment, the tests conducted and the data gathered. The results of one-way ANOVA showed that both GDA and CDA were facilitative of listening development with a large effect size (effect size = .516), and the difference between them was nonsignificant ($p > 0.05$). The results further showed that both GDA and CDA could ameliorate perfectionism with a moderate effect size (effect size = .332), decrease anxiety with a small effect size (.218), and increase intrinsic motivation among L2 learners with a small effect size (effect size = .228). The findings can have implications for language practitioners, and materials developers. The implications of the study are discussed.

Keywords: GDA, CDA, Listening development, Perfectionism, Anxiety, Intrinsic Motivation, ZPD, Sociocultural theory

Introduction

Listening comprehension is one of the main language skills for language learners. It is for this reason that listening is said to be at the helm of learning an L2. According to Rost (2001), by developing listening skills, other language skills are also facilitated; hence, this refers to the importance of listening skills in L2 education. Despite the highlighted role of listening, learners rarely receive instruction on how to develop this skill (Leloup & Pontiero, 2007; Mendelsohn, 2006).

Dynamic assessment (DA), which is based on Vygotsky's concept of the zone of proximal development (ZPD), differs from traditional static assessment (SA) in that it involves the assessor's intervention to help students perform beyond their independent abilities and advance their development (Poehner & Lantolf, 2013). In DA, learners interact with a more proficient one called a mediator, and based on the mediation they receive their ZPD widens, and reach the independent level in doing their tasks (Chen et al., 2022). However, due to the time requirements of mediation, mediators might only assist a few learners one at a time. Researchers have used large-scale CDA to overcome this problem. According to DA researchers (Bahramlu & Esmaeili, 2019; Nicholas, 2020), effective education will result from the dialectical integration of instruction and assessment into a dynamic activity. This calls for consideration of the students' ZPD during the assessment processes, which is accomplished by the mediators' participation in the form of giving hints, prompts, and comments. The number of learners and the number of skills that are dynamically tested in a single DA process have been reduced in most DA research due to the sensitivity to each learner's ZPD. To address this issue, DA researchers have recently looked into technology (computer software) to assume control of the mediators' duties, allowing for the assessment of a larger range of learners and skills during a single DA procedure (Pishghadam et al., 2011; Rahman et al., 2021).

According to Razmi et al. (2020), an in-depth examination of individual variations in psychological propensities and personality traits is necessary for studies on listening abilities. Perfectionism, a multidimensional personality construct, can provide a particularly promising way to understand individual differences at many levels of functioning and performance (Barabadi & Khajavy, 2020). Because of its multimodal nature, perfectionism can offer a path for providing information on individual differences across several domains of functioning (Hanchon, 2010; Rezai et al., 2022, 2023).

Another psychological factor that might affect performance on various measures of any second/foreign language is language anxiety. Language anxiety is the fear that develops as a result of a learner's emotional reactions to the teaching circumstances they face in a particular circumstance. It is distinct from trait anxiety, which is the learner's general predisposition to worry due to their personality but is related to it (Ellis, 2015). It has mostly been studied in classroom students using both quantitative and qualitative research techniques.

Another psychological trait that can have a facilitative role in language acquisition is learners' motivation. According to Schiefele et al. (2012), motivation is defined as students' willingness to start learning. It can determine whether learning is successful or unsuccessful. The self-determination theory's conceptualization of the intrinsic and extrinsic orientations of motivation serves as a useful foundation for understanding motivation in educational environments. Extrinsic and intrinsic motivation are not just two extremes on a continuum; rather, they are distinct elements that can coexist and affect learning in different ways (Stutz et al., 2016). Students that are intrinsically driven participate in an activity for internal motives like enjoyment and satisfaction. Students who are intrinsically driven to listen do so because they find listening to be rewarding in and of itself or because they love engaging in listening activities. However, extrinsic motivation shows itself as a concentration on accomplishing instrumental goals outside of the realm of actual learning.

Extrinsically motivated kids might listen to meet their teachers' expectations, get their parents' approval, receive a good grade, or gain the respect of their friends (Stutz et al., 2016).

As mentioned above, due to the time requirements of mediation, mediators might only assist a few learners one at a time. Researchers have used large-scale CDA to overcome this problem. CDA efficacy is still unknown and needs further research (Poehner & Leontjev, 2018). Researchers have asserted that DA is superior to SA; however, this assertion needs to be supported by experimental data comparing the two. There is also a need to investigate whether CDA can be used to educate in a classroom. For L2 learners, listening comprehension is a crucial skill, yet there is little DA research on L2 listening. Moreover, almost no attention has been paid to the impacts of DA vs. CDA on some psychological traits such as L2 learners' perfectionism, language anxiety, and intrinsic motivation. Therefore, this study attempts to address these gaps.

There are four objectives behind conducting this study. The first study's objective is to find out if GDA vs. CDA can facilitate L2 learners' listening development. Secondly, we aim to see if perfectionism in response to DA vs. CDA facilitates listening development. A third target is to examine the effect of anxiety in response to DA vs. CDA to facilitate listening development. The last objective of this research is to examine the effect of intrinsic motivation in response to DA vs. CDA to facilitate listening development. As a result of these, the following research questions are raised:

> *Research Question 1.* Does GDA vs. CDA have any significant effect on L2 learners' Listening skills?
> *Research Question 2.* Does GDA vs. CDA have any significant effect on L2 learners' perfectionism?
> *Research Question 3.* Does GDA vs. CDA have any significant effect on L2 learners' foreign language anxiety?
> *Research Question 4.* Does GDA vs. CDA have any significant effect on L2 learners' intrinsic motivation?

As mentioned earlier, listening is at the helm of language learning and its development can facilitate the acquisition of other language skills (Rost, 2001). Additionally, Vygotskian-based DA has been found to affect language learning in a facilitative way (Poehner & Lantolt, 2013). Notwithstanding, almost no study has ever attempted to investigate the comparative effects of DA and CDA on L2 learners' listening development. Sadly enough, only a few studies have explored the effect of DA vs. CDA on L2 learners' perfectionism, language anxiety, and intrinsic motivation. It is for these reasons that this research appears to be innovative enough to address the knowledge gap. The researchers hope that the results of this study help language practitioners find an effective way in facilitating their learners' listening development, perfectionism, and intrinsic motivation. Besides, the researchers hope that language practitioners can lower their learners' language anxiety based on the findings that will be gleaned from this study.

Literature review

Theoretical background

Group dynamic assessment

In Vygotskian school of thought, the environment and the individual are not seen as separate variables but rather as two variables that influence one another in a spiraling process of growth (Van Der Veer, 2007). According to Vygotsky (1978), a person's capacity to generate lower-level psychological processes is determined biologically. The higher cognitive functions of a person, however, go through a three-stage process of object control, other regulation, and self-regulation. Furthermore, Vygotsky's sociocultural theory is where the ZPD concept originates. ZPD, according to Vygotsky (1978), is the difference between what a person can do independently and what they can do under mediation. A post-psychometric assessment culture that is widely known as "Dynamic Assessment" has arisen, drawing on ZPD and Vygotsky's sociocultural theory. Dynamic assessment is a strategy for analyzing individual differences and their consequences for education that embeds action into the assessment procedure, according to Lidz and Gindis (2003, p. 100). Although in SDA no mediation is offered, in DA mediators constantly interact with learners and offer appropriate mediation when possible to widen learners' ZPD.

Offering mediation during assessment procedures is one of DA's distinctive characteristics. According to Lantolf and Peohner (2014), these mediations support L2 learners in performing better on examinations and advancing beyond their current proficiency levels. According to Lantolf (2009), DA is predicated on the idea that rather than leaving L2 learners alone with examinations, it is preferable to give them incremental, congruent mediations to obtain a more accurate image of their abilities. According to Poehner (2009), in DA teachers attempt to mediate learners when they have difficulty grasping a feature on their own. In this way, learners' ZPD is broadened. More importantly, applicability in big classes is one of the frequently stated complaints of DA (Azizi & Namaziandost, 2023; Mauludin, 2018). Since the teacher/mediator can only focus on one learner at a time in tutorial sessions (Poehner, 2009), DA techniques are only appropriate and beneficial in those situations. Poehner (2009) introduced GDA to overcome this restriction. According to him, there is not much of a difference between DA and GDA methods because both adhere to the same fundamental idea: providing students with the proper mediation to help them jointly develop a ZPD. However, GDA can involve group members in a task that no one person can perform alone but for which all group members require mediation, albeit in varying degrees and amounts. "Primary" and "Secondary interactants" are two crucial terms in the GDA paradigm (Poehner, 2009). According to Poehner (2009), in a classroom wherein mediation is offered, the mediator and the assessee are firsthand interactants and other students are secondary interactants. As a result, the classroom environment enables all students to profit from the interactions.

Computerized dynamic assessment

The subject of CDA is a well-liked one for electronic mediation. When students make mistakes, it responds to them automatically (Ünal, 2021). Because it may be used by a large number of participants and can be evaluated repeatedly as needed, CDA overcomes the DA's limitations. Additionally, automatic reporting of participant performance is

possible. There are several restrictions on how this type of mediation can adjust the level to meet the demands of the children. CDA is unsure whether the outcome would change if the various mediation formats were made available. Due to the time requirements of the mediator-learner interaction, DA has a limit on the number of learners a mediator may assist. Researchers have used large-scale CDA to overcome this problem. Poehner (2008) highlights the potential of CDA and lists its three key benefits above standard DA: It can be given to numerous students at once, and reports of their performance are created automatically. Individuals may also be reviewed as often as necessary. CDA techniques have received some criticism, though. Most crucially, CDA's drawback is tied to the type and caliber of mediation it provides, just like other interventionist strategies. No matter how carefully it is prepared, the mediation may not be tailored to the needs of each student because it is pre-planned (Namaziandost et al., 2023; Poehner, 2007).

Although CDA and GDA both focus on the group ZPD, CDA has an advantage over GDA because participants can choose from a smaller number of mediation prompts in the computer program in CDA studies to date. In contrast, GDA offers the same mediation to every group member. Since CDA operates within the ZPD group, group homogeneity should be taken into account while putting it into practice (Yang & Qian, 2019). In contrast to what a human mediator can do in an interactionist DA, CDA often falls under the category of interventionist DA due to the computer program's restricted flexibility in providing mediation. In addition, by providing students with the mediation they require while also meeting the statistical requirements of tests (such as validity) on behalf of the standardized mediations, computerized dynamic assessment integrates interactionist and non-dynamic assessment forms (Poehner, 2008). In terms of this opportunity, the CDA technique has an advantage over DA because it derives from the interventionist model of DA that can deliver the test to many students.

Perfectionism

Adler (1956) asserted that the desire for perfection is a trait shared by all people and has manifested itself at all points in human history. According to Luckert (1986), the pursuit of perfection is a trait that has existed since the dawn of humankind. According to Frost et al. (1990), fear of failure, high expectations, concern for order, neatness, and organization, striving for excellence, being critical of oneself and others, fear of making mistakes, and evaluative critical concerns are the main characteristics of perfectionism.

Perfectionism has been thoroughly studied in the fields of individual differences, personality, and educational psychology research as a propensity towards obtaining the highest achievable personal standards (Gnilka & Novakovic, 2017). Major research in the literature has interpreted perfectionism as a multidimensional personality trait using a clustering approach. Adaptive, maladaptive, and non-perfectionist groups are among the clusters (Mills & Blankstein, 2000). There is increasing interest in the field of studies on perfectionism in second language acquisition (SLA) research. Language teachers and students have both been the subject of studies on perfectionism (Jones 2016; Mahmoodi-Shahrebabaki 2017; Dashtizadeh and Farvardin, 2016; Flett et al. 2016). Studies on learners have focused mostly on useful language abilities. According to studies on productive skills, unhelpful perfectionism and excessive worry over accuracy errors will prevent learners from producing communicative language (Yoshida 2013).

Additionally, efficiency issues would result from maladaptive perfectionism. As a result, the students risk becoming spectators (Liu & Jackson, 2008).

Language anxiety

One of the most extensively researched emotions in second language (L2) research is language anxiety, which is a negative emotional response that takes place during the perception, production, or processing of the target language (MacIntyre, 1999). When anxiety is referred to as a state, it is thought to be a fleeting feeling brought on by a particular stimulus (Spielberger, 1983); yet, when anxiety is referred to as a trait, it is seen as a more enduring characteristic (Scovel, 1978). Increased heart rate, trembling, and sweaty palms are among the physical symptoms of anxiety, both state- and trait-related (Witt et al., 2006). Heart rate, salivary and hair cortisol levels, skin conductance (sweating), electro-photonic emissions from fingertips, and other physiological measures have thus been used to record changes in state-anxiety during L2 communicative events (Lindberg et al., 2021).

Language anxiety which arises from the learning process is a distinct self-perception feeling concerning an instructional setting which arises from the learning process (Horwitz et al., 1986). It is crucial to remember that this form of anxiety is connected to classroom-based language acquisition and not to any other aspect of learning such as through immersion while visiting or residing in another country. Foreign language classroom anxiety is made up of three linked types of anxiety: (a) communication apprehension, (b) fear of poor evaluation, and (c) exam anxiety (Horwitz et al., 1986). An individual's level of worry or anxiety related to actual or prospective engagement with others is known as communication apprehension (McCroskey, 1984; Tumasang, 2022). The affective filter hypothesis, which Krashen first proposed in 1981 and 1982, contends that when language learners experience anxiety, a mental filter that prevents linguistic input from entering is activated (Krashen, 1981, 1982). As a result, the perceived stress and anxiety levels of learners may have a negative effect on language acquisition. Some studies have shown there is a negative relationship between learners' performance in classrooms and their anxiety. Language anxiety can be crippling for some language learners (Russell, 2020; Zhao et al., 2013, among others).

Intrinsic motivation

Two main types of motivation have been identified: intrinsic and extrinsic (Vallerand, 1997). Extrinsic motivation is when individuals are willing to do something in the hope of achieving something else later (Ryan & Deci, 2000, p. 60), whereas intrinsic motivation refers to the doing of a task when people are inherently ready to do this. The assessments of intrinsic motivation focus on the learners' freedom of choice, their reported interests and enjoyment in learning, and the ability of perceived competence and learning autonomy to sustain or improve intrinsic motivation (Ryan & Deci, 2000). Despite not necessarily being linked to academic success, intrinsic motivation has been shown to positively influence self-regulated learning and reduce learning-related stress (Van Seters et al. 2012; Winne 1995). In contrast, extrinsic motivation has little relationship with self-regulated learning (Baker 2004) and is more closely related to external regulation.

People who are intrinsically motivated are more likely to work hard and experience less emotional tiredness and fatigue at work since they are motivated by interest and delight. Externally motivated people who are under the direction of other forces, however, are less likely to act impulsively due to a lack of autonomy (Ryan & Deci 2000). Additionally, studies show that intrinsic motivation outperforms extrinsic motivation in lowering detrimental psychological attitudes and behaviors such as burnout and intention to quit (Koeske & Koeske, 1989; Marrahí-Gómez & Belda-Medina, 2022). Learners become intrinsically motivated if the activity is engaging and demanding and learning is seen as a goal in and of itself (Ehrman et al., 2003). Intrinsic motivation in the context of learning a second or foreign language is described as learners inherently enjoying an L2 (Wu 2003). According to Noels et al. (2001), L2 intrinsic motivation not only can facilitate learning, but also it can increase autonomy and decease anxiety. Additionally, several academics, like Tóth (2007) and Liu and Huang (2011), have looked into the connection between self-determination theory and language anxiety. These researchers discovered a negative relationship between anxiety and intrinsic drive.

Compared to intrinsically motivated language learners, those who are extrinsically motivated or who have no motivation to learn a second or foreign language have much higher levels of anxiety (Noels et al. 1999, for example). In a similar vein, Khodadady and Khajavy (2013) discovered that intrinsically motivated language learners did not have a negative attitude toward English classes, were content and at ease with their English education, and did not have a fear of communicating in a foreign language. In educational environments, there have also been negative correlations between intrinsic motivation and burnout observed (Joshua & Xiao, 2022; Pisarik 2009; Rubino et al. 2009).

Experimental studies

A number of researchers have attempted to explore the impact of DA on language skills. One such study is that of Ahmadi Safa and Beheshti (2018). This study examined the effects of interactionist and interventionist GDA approaches on Iranian intermediate EFL learners' listening comprehension, drawing on sociocultural theory. For this reason, they selected two experimental groups and a CG each containing 90 EFL students. An abbreviated version of a sample TOEFL Junior Standard Test was given to the participants to guarantee uniformity of competence level. The pre- and post-tests were the listening comprehension questions on the TOEFL Junior Standard Test. Then, participants from each major group were divided into two subgroups of five and five subgroups of four. In the first experimental group, the researcher took part in the subgroups' class activities during 13 treatment sessions. In the first experimental group, which had 13 therapy sessions, the researcher took part in the subgroups' class activities and used interactionist techniques to engage with and help the group members with their listening comprehension exercises. The researcher gave the group members in the second experimental group a spectrum of more implicit to explicit suitable feedback while participating in the groups' activities, based on the sandwich model of the interventionist method to dynamic assessment. The typical summative types of evaluation were used in the CG, but interactive or interventionist DA assessment was avoided. The results of the studies, which included one sample *T*-test, ANOVA, and Tukey HSD posthoc, showed that interactionist GDA was the

most successful method for the improvement of listening comprehension in intermediate EFL learners. Additionally, even while the interventional GDA treatment appeared to be more successful than the NDA procedure used by the CG, the advantage was not statistically significant. The results highlight the importance of interactive GDA patterns and suggest that practitioners' educational efforts will be more successful and in line with the pedagogical goals established for the improvement of EFL learners' listening comprehension to the extent that they move away from unilateral and authoritative pedagogical approaches in favor of interactive and cooperative ones.

In another experiment, Rassaei (2021) investigated the efficacy of mobile-mediated DA for teaching request forms to EFL learners. The major goal of this experiment was to offer a framework for group DA implementation using students' smartphones to enhance and evaluate EFL learners' capacity to generate well-formed and pertinent requests. The DA participants were asked to respond to a variety of scenarios during mobile-mediated group interactions via WhatsApp throughout three treatment sessions. The DA group participants were given a series of incrementally ordered cues, from the most implicit to the most explicit to review and self-correct their inaccurate requests. The study of the reciprocity movements made by the students during the three DA sessions showed that they improved their ability to formulate appropriate requests for mediation and took on a more agentive role in their interactions with the mediator. Learning outcomes from three testing occasions were analyzed, and the findings revealed that DA greatly improved students' understanding of request tactics.

In an interesting study, Mehri Kamrood et al. (2019) studied the effect of online CDA on EFL Learners' language development. The online multiple-choice CDA program was developed following Poehner and Lantolf (2013). The software uses hints and prompts to introduce ZPD-based mediation to learners. It then generates scores for each learner's independent performance, mediated performance, and learning potential score (LPS), which measures the difference between the two scores. The findings showed a considerable discrepancy between the learners' real and mediated scores, demonstrating that non-dynamic testing was insufficient to account for the learners' responsiveness to mediation. Additionally, LPS was able to distinguish between students who had been placed at the same level through non-dynamic testing. To diagnose each learner's strengths and weaknesses in the many language constructs covered by the exam, it was necessary to analyze both their scoring profile and their LPS. This analysis might aid teachers in creating precisely tailored personalized learning plans and resources for future learning.

In a well-written and compelling study, Heshmat Ghahderijani et al. (2021) compared the effect of GDA and CDA on EFL learners' speaking complexity, accuracy, and fluency (CAF). Convenience sampling was used and was assigned into three groups: the GDA, the CDA, and the non-DA CG. All three groups took a speaking pretest before the treatment, and the results were tallied along with their CAF scores. The treatment was then finished in 16 sessions utilizing the aforementioned DA and non-DA conventional models. A speaking post-test was administered to the groups after the trial to gauge the effect of the treatment. The results showed that CDA and

GDA could both considerably boost speaking CAF compared to traditional non-DA training, with CDA being significantly superior to GDA. The findings of this study suggest that teachers' use of DA, particularly CDA, can improve the speaking CAF of L2 learners.

The effect of CDA on listening comprehension of Iranian EFL learners ($n = 185$) was studied by Fekri Pileh Roud and Hidri in their study published in 2021. A computer program was created to help test-takers understand the listening questions, and it was intended to produce the following results: actual, mediated, and learning potential scores. The study's findings showed that almost all question types produced significantly different mean scores in the various listening skill levels between the actual and mediated scores. Overall, results indicated that CDA significantly improved EFL test-takers' performances in the monologue and dialogue tasks. It was advised that teachers use CDA since the knowledge gathered from this sociocultural assessment method enables them to offer students more individualized and, as a result, more successful teaching and assessment strategies.

With a sample of EFL learners in an Iranian environment, Amini and Shamlou (2017) sought to investigate the potential importance of perfectionism as a personal characteristic variable in regulating the efficacy of metacognitive teaching on bottom-up and top-down sub-processes of listening comprehension. To do this, 94 female EFL students at the Andisheh Language Institute in Malayer, Iran, were chosen from a total of 136 EFL students based on the outcomes of a homogenizing test (PET). An experimental group and a CG were randomly assigned to the chosen individuals in 4 intact classes. Using the Ahvaz Perfectionism Scale to assess learners' tendency toward perfection, all participants were classified as either perfectionists or non-perfectionists by using the median score as the cut-off. For the experimental group, two therapy sessions were devoted to explicit instruction of five metacognitive methods; the CG participants got regular listening practice based on comprehension testing instead. The post-test consisted of two sets of listening comprehension questions measuring top-down and bottom-up subprocesses that were taken from the TOEFL archives. The findings showed that metacognitive education promoted both bottom-up and top-down listening comprehension. Although a significant moderating impact was seen for bottom-up listening comprehension, perfectionists and non-perfectionist EFL learners did not differ in how metacognitive teaching affected their top-down listening comprehension. These researchers concluded that we are better able to comprehend the L2 listening process thanks to the patterns of interaction between perfectionism and the two listening subprocesses.

Chasetareh et al. (2022) examined the relationship between perfectionism and L2 learners' accomplishment, looking at motivation and two components of self-regulated learning as potential mediators. The Big Three Perfectionism Scale (BTPS) factor structure was also assessed in this study using an Iranian population. 495 Iranian students who participated in the study performed six BTPS subscales as well as tests of self-determined motivation and self-regulated learning. Psychometric evaluations revealed construct validity for inflexible perfectionism and self-critical perfectionism as two higher-order components. According to structural equation modeling, self-critical perfectionism negatively predicted L2 achievement while strict perfectionism favorably predicted it. The road from perfectionism to L2 achievement was

not mediated by either autonomous-mastery/performance motivation or controlled motivation, according to mediation models. Deep learning and persistence, two components of self-regulated learning, could, however, buffer the link between perfectionism and L2 performance. More specifically, inflexible perfectionism at higher levels was positively correlated with persistence and deep learning, both of which were associated with higher L2 accomplishment. Self-critical perfectionism, on the other hand, had a negative relationship with persistence and deep learning, both of which were linked to L2 accomplishment.

Students' capacity to learn a new language might be influenced by personality variations. Perfectionism has recently been the focus of research in second language acquisition as one of the crucial personality traits. In keeping with this line of inquiry, Razmi et al. (2021) looked at a path model connecting aspects of perfectionism to second language (L2) listening comprehension through mediating effects of self-efficacy subscales and the application of metacognitive listening strategy (MLS). The perfectionism, general self-efficacy, and MLS questionnaires were filled out by a sample of 230 English as a foreign language (EFL) students who were majoring in Translation studies and English literature. They also took the IELTS listening comprehension test. 112 juniors (48.7%) and 118 seniors (51.3%) were included in the sample using convenience non-random sampling. Three perfectionistic clusters—adaptive, maladaptive, and non-perfectionists—were discovered through the application of cluster analysis. Perfectionism and the use of MLS were found to be the most important factors in the conceptual model that was proposed, according to the findings of a route analysis. Although this study's correlational analyses found a connection between self-efficacy elements and listening comprehension, the aggregate total effects were not statistically significant. The MLS use and listening skills were significantly influenced by adaptive perfectionism. Another important factor in the effort and perseverance self-efficacy components was perfectionism. On the other hand, perfectionism had little effect on the subscale measuring initiative self-efficacy.

Another study that has delved into the efficacy of DA in language learning and psychological traits is that of Ritonga et al. (2022). They attempted to examine the effects of an interventionist, interactionist, and non-interventionist DA on the speaking accuracy and fluency (SAF), foreign language classroom anxiety (FLCA), and foreign language learning motivation (FLCM) of EFL students. To do this, 78 participants were chosen and randomly divided into three groups: CG (non-DA), EG1 (interactionist DA), and EG2 (interventionist DA). Three related pretests were used to evaluate the participants' SAF, FLCA, and FLCM prior to the start of the treatment. Without any DA-focused interventions, the non-DA students were assigned particular subjects to discuss as part of the treatment. While the EG2 was trained through DA-oriented instruction using Lantolf and Poehner's (2011) scales to measure and support the students' speaking ability in their discussions, the EG1 was assessed and given the necessary assistance by interaction-oriented DA techniques. SAF, FLCA, and FLLM post-tests were given after the study to evaluate its effects. One-way ANOVA tests were used to analyze the data, and the results showed that both interactionist and interventionist DA models significantly improved the SAF of EFL learners. Additionally, it was discovered that both DA models decreased FLCA while simultaneously boosting motivation in EFL learners.

Azizi and Farid Khafaga (2023) are also among numerous researchers who have conducted such a study. They attempted to show the impacts of GDA on learning anxiety, willingness to communicate (WTC), and motivation in Iranian high school pupils. For these aims, they selected 124 learners randomly and divided them into an experimental and a CG. The results showed that the treatment groups' motivation significantly improved. It was also shown that not only their anxiety decreased, but also their WTC improved. It is predicted that the study's findings will have a big impact on the different EFL settings as well as provide a range of recommendations and consequences for key stakeholders.

Estaji and Farahanynia (2019) investigated the impact of the interventionist and interactionist approaches to dynamic assessment on learners' anxiety and performance in oral narratives. Thirty-four Iranian EFL students were divided into an Interactionist Group (InA.G) and an Interventionist Group (InV.G) for this reason. The Foreign Language Classroom Anxiety Scale and a speaking pretest were first given to each group. The InV.G. was required to narrate a movie and was given guidance on their blunders during the treatment phase. The InA.G supplied scaffolding for the narration while narrating the video. After that, a posttest was administered to each group, followed 2 weeks later by a delayed posttest. The findings showed that both groups' anxiety decreased and their oral performance greatly improved. Ultimately, a semi-structured interview was done, and the results showed that the InA.G. felt higher anxiety, primarily because of feeling interrupted and that they were losing face.

In another study, Zarei and Shishegarha (2023) examined how three dynamic assessment models affected L2 speaking and listening anxiety. One hundred twenty Iranians studying English at a language institute in Qazvin, Iran, were the participants. Three experimental groups and one CG were randomly assigned to the students, for a total of four groups. Using the Oxford Proficiency Test (OPT), the homogeneity of the students was evaluated before the treatment. Following that, questionnaires measuring speaking and listening anxiety was administered to all groups as pretests. The first group received listening and speaking instruction throughout 10 sessions using Buddof's Learning Potential Measurement Approach (LPM), the second group received treatment using Guthke's Lerntest Approach, the third group received treatment using Testing-the-Limits Approach, and the CG received traditional teacher-fronted instruction. The participants in the twelfth session received identical questionnaires as posttests. Two one-way analysis of covariance approaches were used to analyze the data. After correcting for the initial differences, there were significant variations in the listening and speaking anxiety mean scores between the groups on the posttests. On the posttest, the experimental groups that received the testing-the-limits and Lerntest techniques displayed less anxiety when speaking and listening. The study concluded that dynamic evaluation models can improve EFL learners' productivity by lowering their speaking and listening anxiety.

Zoghi and Malmeer (2013) set out to investigate how an interactionist DA model would affect the intrinsic motivation of Iranian EFL adult learners. Based on the convenience sample process, 100 individuals were chosen. The subjects were divided into two groups: experimental ($n = 50$) and control ($n = 50$). The experimental group underwent seven implementations of an interactionist model of DA in reading comprehension during the term. Data were gathered using the Academic Motivation scale, and

an independent-samples *t*-test was used to examine it. The findings showed a substantial difference in the levels of intrinsic motivation between the two groups. These L2 researchers concluded that the intrinsic motivation of EFL students is positively impacted by the addition of DA as a supplement method to classroom activities.

To sum up, although numerous studies have found a facilitative role for DA and CDA on language learning in general, almost no attention has been paid to how DA vs. CDA can affect the listening development of L2 learners. Additionally, the effect of DA vs. CDA on individual differences traits such as language anxiety, intrinsic motivation, and L2 learners' perfectionism has not been investigated thoroughly. To fill the gap, therefore, this study attempts to examine the contribution of DA vs. CDA to L2 learners' listening comprehension as well as their effect on L2 learners' perfectionism, language anxiety, and intrinsic motivation.

Method

Design and participants

This study uses a quantitative quasi-experimental pretest-posttest CG design to check the effect of GDA vs. CDA on L2 listening development, learners' perfectionism, learners' anxiety, and learners' intrinsic motivation. The participants of this study were language 91 learners in a large language institute called Masire Jadid in Tehran, Iran. From among 185 learners enrolled at the institute, through an OQPT, 91 intermediate learners of English as an L2 were selected for the study. These participants were then randomly selected into two experimental groups and a CG, with 31 subjects in each experimental and 29 subjects in the CG. The participants of the study ranged in age from 18 to 29. These participants had all Persian as their L1 with English as their L2. Additionally, none of the participants had ever been abroad even for a short period of time. They were selected through a convenience sampling procedure.

Instruments

At the beginning of the study, an OQPT was administered to determine the participants' L2 language proficiency. Then, to check the effect of GDA vs. CDA on L2 listening development, a researcher-made test was designed. The test was validated via a known-group technique (Ary et al., 2019). That is the researcher administered to test to a group of language teachers. The difference between their performances with those of the participants on the pretest turned out to be significant using a *t*-test, hence the construct validity of the test. The researchers also asked a few experts to comment on the content validity of the test which turned out to be valid. The reliability of the instrument was checked using the KR-21 formula. The reliability was determined as .82. A similar version of the test with different items was also designed and validated to be used on the posttest. Then, Ahvaz Perfectionism Scale (APS), created by Najarian et al. (1999), was used to identify the overwhelming propensity of learners toward perfectionism. Some of the items (items 11, 16, 17, and 22) were adversely worded throughout the grading process. Its internal consistency for the entire sample had already been calculated using Cronbach's Alpha to be .90 (Najarian et al., 1999). Based on the result of the APS, 34 participants in the experimental group, and 16 subjects in the CG were determined as perfectionist learners, and the rest were determined as nonperfectionist learners. Thereafter, the

researchers used Spielberger's (1983) State-Train Anxiety Inventory (STAI) to measure anxiety. The questionnaire is a 40-item self-report scale that assesses two components of state and trait anxiety, with 20 items each. The items range from "very seldom" to "very often" on a 4-point Likert scale. Based on the results of the scale, 31 experimental and 17 control participants were deemed as high-anxiety learners, and the rest were deemed as low-anxiety learners. According to Tluczek et al. (2009), the STAI instrument is both valid and reliable. Lastly, to measure subjects' intrinsic motivation, the Academic Self-Regulation Questionnaire (SRQ-A), a 24-item questionnaire, developed by Ryan and Connel (1989) and later adapted for use in L2 contexts by Vallerand et al. (1992) was used. According to Vallerand et al. (1992), the instrument is both reliable and valid. Based on the results of the SRQ-A, 28 experimental and 16 CG subjects at the outset of the study were deemed intrinsically motivated at the outset of the study.

Data collection procedures

In the first place, an OQPT was administered to learners in all conditions. Based on the results, the subjects' proficiency level in the L2 was determined as intermediate. Then, before the treatment, APS was administered to measure the subjects' perfectionism. Thereafter, STAI was administered to measure learners' anxiety. After that, SRQ-A was administered to measure learners' intrinsic motivation. When these individual differences were determined, the treatment began and lasted 5 sessions. All classes were taught in a language lab during class time, and each student had access to a computer and the internet there. Each student had a laptop and a smartphone, and they all had access to the Internet on campus outside of class. All of the programs were web-based for student convenience. The administration procedure was meticulously carried out to guarantee efficient operation and test fairness for students in the classroom. During testing hours, all networks in the language lab were restricted except the test's website. Through the CDA program, data were gathered for the experimental group. Before the pretest, the first author provided students with an overview of the test's objectives, scoring criteria, and the online testing process. The majority of the pupils were computer proficient; therefore, they easily grasped this demonstration. Each test should be finished as soon as feasible, teachers told students. The testing went without a hitch, and all pupils completed their tests in class. The test results were saved on the instructor's computer for later extraction and data analysis. In the GDA condition, the participants were divided into groups of 5, and a group of 6. The best-performing subject in each group was determined by the group's head and the heads were responsible to mediate the groupmates' performance and provide them with appropriate feedback to enhance their performance on the listening tasks. The non-DA and non-CDA program created in this study was used to gather data for the CG. To be more specific, in the CDA condition, the instructor was the mediator and he offered the treatment to all the participants at once. In the CDA condition, the participants were not divided into different groups and the instructor himself was the only mediator of the classroom; however, in GDA, participants were divided into smaller groups and each group had to cooperate with their groupmates to do the listening tasks. During the first session of GDA, the learners were introduced to the GDA process, which involved a collaborative assessment process. They engaged in a group discussion to identify their listening strengths and weaknesses

and set goals for improvement. In the second session, the learners were given a listening task, and they worked collaboratively to complete the task. The instructor provided feedback and coaching on their performance, focusing on areas that need improvement. In the third session, the learners were given another listening task, and they worked collaboratively to complete the task. The instructor provided feedback and coaching on their performance, focusing on the progress made since the second session. In the CDA intervention, the learners worked individually on a computer-based program that adapted to their responses. In the first session, the learners were introduced to the CDA program and completed a pre-test listening task. The program was adapted to their responses and provided personalized feedback and coaching based on their performance. In the second session, the learners engaged in a series of interactive computer-based tasks, which adapted to their responses. The program provided feedback and coaching on their performance, focusing on areas that need improvement. In the third session, the learners engaged in another series of interactive computer-based tasks, which adapted to their responses. The program provided feedback and coaching on their performance, focusing on the progress made since the second session. Before the pretest, a similar demonstration was given to participants to make sure they knew how to use the program. The examinations were completed by all of the students during class, and the results were later downloaded from the instructor's computer in the language lab.

Data analysis procedures

To address the first research question raised above, a one-way analysis of variance (ANOVA) is conducted. According to Pallant (2020), because there are three groups whose performances are going to be measured the statistic of choice is the ANOVA test. To check the normality assumption, a one-sample Kolmogorov-Smirnov (K-S) test is conducted, and to check the homogeneity of the data, a Levene's test is used. The tests of significance are performed through SPSS software version 24. Finally, to add each of the other remaining research questions, three chi-squares for group independence are run to determine the effect of GDA vs. CDA on L2 learners' perfectionism, anxiety, and intrinsic motivation.

Results

Does GDA vs. CDA have any significant effect on L2 learners' Listening skills?

As mentioned above, to determine the effect of GDA vs. CDA on L2 learners' listening development, a one-way between-groups ANOVA needs to be run (Pallant, 2020) as there is an independent variable (i.e., condition) with three levels (i.e., GDA, CDA, and Control) and a continuous score (i.e., listening scores on pretest and posttest). First, we need to make sure that the data are normally distributed. To this end, a one-sample K-S test is used.

As can be seen, the results of the K-S test show that the sig. (2-tailed) value for the condition on both pre and posttest exceed 0.05, hence the normal distribution of the data ($p > 0.05$) (Table 1).

The next step is to conduct Levene's test to ensure the homogeneity of the data.

Table 1 One-sample Kolmogorov-Smirnov test

		Condition	Pretest scores	Posttest scores
N		91	91	91
Normal parameters	Mean	1.9780	4.4396	9.3187
	Std. deviation	.81620	1.35981	4.78860
Most extreme differences	Absolute	.225	.182	.180
	Positive	.225	.141	.180
	Negative	−.213	−.182	−.163
Kolmogorov-Smirnov *Z*		2.149	1.737	1.721
Asymp. Sig. (2-tailed)		.086	.123	.095

Table 2 Test of homogeneity of variances

	Levene statistic	df1	df2	Sig.
Pretest scores	.083	2	88	.920
Posttest scores	14.419	2	88	.735

Table 3 Descriptive statistics

		N	Mean	Std. deviation	Std. error	95% confidence interval for mean		Minimum	Maximum
						Lower bound	Upper bound		
Pretest scores	GDA	31	4.3548	1.37957	.24778	3.8488	4.8609	2.00	7.00
	CDA	31	4.4194	1.40888	.25304	3.9026	4.9361	2.00	6.00
	CG	29	4.5517	1.32520	.24608	4.0476	5.0558	2.00	6.00
	Total	91	4.4396	1.35981	.14255	4.1564	4.7228	2.00	7.00
Posttest scores	GDA	31	11.1935	3.75428	.67429	9.8165	12.5706	4.00	17.00
	CDA	31	12.0968	4.19011	.75257	10.5598	13.6337	5.00	20.00
	CG	29	4.3448	1.31681	.24453	3.8439	4.8457	2.00	6.00
	Total	91	9.3187	4.78860	.50198	8.3214	10.3160	2.00	20.00

The results of the test of homogeneity corroborated the homogeneity assumption as the Sig. value on both pre and posttests of listening exceeded 0.05 ($p > 0.05$) (Table 2). Now, we can safely run the ANOVA.

The descriptive statistics which summarize the data (Ary et al., 2019) are shown in Table 3. Based on the results of Table 3, the mean for the GDA condition on the pretest was 4.35 with 1.37 SD, for the CDA condition was 4.41 with 1.40 SD, and for the control, condition was 4.55 with 1.32 SD. The results show that on the pretest all conditions performed the same. But on the posttest, the GDA group had an 11.19 mean with 3.75 SD, the CDA condition had a 12.09 mean with 4.19 SD, and the control condition had a 4.34 mean with 1.31 SD. Based on the results of Table 3, although the CG performed the same on both the pre and posttest of listening comprehension, the performances of both experimental conditions rose sharply. Unfortunately, Table 3 does not tell us whether this difference is statistically significant. Thus, we need to run an inferential statistic test of significance.

Table 4 One-way ANOVA

		Sum of squares	df	Mean square	F	Sig.
Pretest scores	Between groups	.600	2	.300	.159	.853
	Within groups	165.818	88	1.884		
	Total	166.418	90			
Posttest scores	Between groups	1065.658	2	532.829	46.978	.000
	Within groups	998.100	88	11.342		
	Total	2063.758	90			

Table 5 Multiple comparisons

Dependent variable		(I) Condition	(J) Condition	Mean difference (I-J)	Std. error	Sig.	95% confidence interval	
							Lower bound	Upper bound
Pretest scores	Bonferroni	GDA	CDA	−.06452	.34866	1.000	−.9155	.7864
			CG	−.19689	.35463	1.000	−1.0624	.6686
		CDA	GDA	.06452	.34866	1.000	−.7864	.9155
			CG	−.13237	.35463	1.000	−.9979	.7331
		CG	GDA	.19689	.35463	1.000	−.6686	1.0624
			CDA	.13237	.35463	1.000	−.7331	.9979
	Tamhane	GDA	CDA	−.06452	.35415	.997	−.9344	.8054
			CG	−.19689	.34922	.923	−1.0555	.6617
		CDA	GDA	.06452	.35415	.997	−.8054	.9344
			CG	−.13237	.35297	.975	−1.0002	.7355
		CG	GDA	.19689	.34922	.923	−.6617	1.0555
			CDA	.13237	.35297	.975	−.7355	1.0002
Posttest scores	Bonferroni	GDA	CDA	−.90323	.85542	.882	−2.9910	1.1845
			CG	6.84872	.87004	.000	4.7253	8.9722
		CDA	GDA	.90323	.85542	.882	−1.1845	2.9910
			CG	7.75195	.87004	.000	5.6285	9.8754
		CG	GDA	−6.84872	.87004	.000	−8.9722	−4.7253
			CDA	−7.75195	.87004	.000	−9.8754	−5.6285
	Tamhane	GDA	CDA t	−.90323	1.01046	.756	−3.3860	1.5795
			CG	6.84872	.71726	.000	5.0567	8.6408
		CDA	GDA	.90323	1.01046	.756	−1.5795	3.3860
			CG	7.75195	.79129	.000	5.7712	9.7327
		CG	GDA	−6.84872	.71726	.000	−8.6408	−5.0567
			CDA	−7.75195	.79129	.000	−9.7327	−5.7712

The results of the ANOVA table show that the difference between conditions on the posttest at 2 degrees of freedom with $F = .159$ was nonsignificant (df = 2, $F = .159$, $p >$ 0.05) (Table 4). However, the difference between conditions on the posttest turned out to be quite significant (df = 2, $F = 49.96$, $p < 0.05$). Now, to check the between-groups differences, posthoc test needs to be run.

Because the difference between the groups on the pretest was not significant, in this section we only focus on the posttest scores (Table 5). The results of the Bonferroni test showed that the difference between GDA and CDA groups on the posttest was

Table 6 Crosstab

			Perfectionism time1		Total
			Perfectionist	Non-perfectionist	
Condition	GDA	Count	7	24	31
		% within Condition	22.6%	77.4%	100.0%
		% within Perfectionism_time1	33.3%	34.3%	34.1%
		% of Total	7.7%	26.4%	34.1%
	CDA	Count	8	23	31
		% within Condition	25.8%	74.2%	100.0%
		% within Perfectionism_time1	38.1%	32.9%	34.1%
		% of Total	8.8%	25.3%	34.1%
	CG	Count	6	23	29
		% within Condition	20.7%	79.3%	100.0%
		% within Perfectionism_time1	28.6%	32.9%	31.9%
		% of Total	6.6%	25.3%	31.9%
Total		Count	21	70	91
		% within Condition	23.1%	76.9%	100.0%
		% within Perfectionism_time1	100.0%	100.0%	100.0%
		% of Total	23.1%	76.9%	100.0%

Table 7 Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	.228	2	.892
Likelihood ratio	.227	2	.893
Linear-by-linear association	.027	1	.870
N of valid cases	91		

nonsignificant (mean difference $= -.09$, $p > 0.05$); however, the difference between the GDA condition and the CG was significant (mean difference $= 6.84$, $p < 0.05$). That is, the GDA group significantly outperformed the CG on the posttest. Additionally, the difference between the CDA group and the CG turned out significant (mean difference $= 7.75$, $p < 0.05$). That is, the CDA group significantly outperformed the CG. Concerning the effect size, the experimental conditions outperformed the CG with a very large effect size (effect size $= .516$).

Does GDA vs. CDA have any significant effect on L2 learners' perfectionism?

To examine the effect of GDA vs. CDA on learners' perfectionism, a chi-square for group independence was run because we were inclined to examine the effect of one nominal variable with three levels (i.e., GDA, CDA, and control) on another nominal variable with two levels (i.e., perfectionist and non-perfectionist) (Pallant, 2020).

Based on the results of Table 6, there were only 7 perfectionist learners in GDA, 8 perfectionists in CDA, and 6 perfectionists in the control condition on the pretest.

Table 7 reveals that at 2 degrees of freedom, the difference did not turn out to be significant ($p > 0.05$).

Table 8 Crosstab

			Perfectionism time2		Total
			Perfectionist	Non-perfectionist	
Condition	GDA	Count	17	14	31
		% within Condition	54.8%	45.2%	100.0%
		% within Perfectionism_time2	37.0%	31.1%	34.1%
		% of Total	18.7%	15.4%	34.1%
	CDA	Count	21	10	31
		% within Condition	67.7%	32.3%	100.0%
		% within Perfectionism_time2	45.7%	22.2%	34.1%
		% of Total	23.1%	11.0%	34.1%
	CG	Count	8	21	29
		% within Condition	27.6%	72.4%	100.0%
		% within Perfectionism_time2	17.4%	46.7%	31.9%
		% of Total	8.8%	23.1%	31.9%
Total		Count	46	45	91
		% within Condition	50.5%	49.5%	100.0%
		% within Perfectionism_time2	100.0%	100.0%	100.0%
		% of Total	50.5%	49.5%	100.0%

Table 9 Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	10.011	2	.007
Likelihood ratio	10.310	2	.006
Linear-by-linear association	4.212	1	.040
N of valid cases	91		

However, as Table 8 reveals, on the posttest there were 17 perfectionists in GDA, 21 perfectionists in CDA, and 8 perfectionists in the control condition. Now, let us see whether the difference is significant.

Table 9 shows that at 2 degrees of freedom, the difference turned out to be significant on the posttest ($p < 0.05$). That is both DA and CDA had a positive significant effect on L2 learners' level of perfectionism. Additionally, the effect size was found to be moderate (effect size = .332).

Does GDA vs. CDA have any significant effect on L2 learners' foreign language anxiety?

To examine the effect of GDA vs. CDA on learners' anxiety, a chi-square for group independence was run because we were inclined to examine the effect of one nominal variable with three levels (i.e., GDA, CDA, and control) on another nominal variable with two levels (i.e., high-anxiety and low-anxiety) (Pallant, 2020).

Table 10 shows that on the pretest there were 19 high-anxiety learners in GDA, 18 high-anxiety learners in CDA, and 15 high-anxiety learners in the CG.

The results of the chi-square test show that the difference between high vs. low anxiety learners was nonsignificant at 2 degrees of freedom ($p > 0.05$) (Table 11).

Table 10 Crosstab

			Anxiety time1		Total
			High-anxiety	Low-anxiety	
Condition	GDA	Count	19	12	31
		% within Condition	61.3%	38.7%	100.0%
		% within Anxiety_time1	36.5%	30.8%	34.1%
		% of Total	20.9%	13.2%	34.1%
	CDA	Count	18	13	31
		% within Condition	58.1%	41.9%	100.0%
		% within Anxiety_time1	34.6%	33.3%	34.1%
		% of Total	19.8%	14.3%	34.1%
	CG	Count	15	14	29
		% within Condition	51.7%	48.3%	100.0%
		% within Anxiety_time1	28.8%	35.9%	31.9%
		% of Total	16.5%	15.4%	31.9%
Total		Count	52	39	91
		% within Condition	57.1%	42.9%	100.0%
		% within Anxiety_time1	100.0%	100.0%	100.0%
		% of Total	57.1%	42.9%	100.0%

Table 11 Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	.576[a]	2	.750
Likelihood ratio	.575	2	.750
Linear-by-linear association	.550	1	.458
N of valid cases	91		

However, in response to different types of treatment, there were only 7 high-anxiety learners in GDA, 11 high-anxiety learners in CDA, and 14 high-anxiety learners in CG (Table 12). That is, in response to the treatment, the number of high-anxiety learners on the posttest decreased sharply; however, the number of high-anxiety learners in the CG did not change from the baseline to time 2.

Table 13 reveals that on the posttest, at 2 degrees of freedom, the difference between high-vs. low-anxiety learners in response to different types of DA turned out to be significant ($p < 0.05$). That is, both types of DA could lessen anxiety levels in L2 learners although with a small effect size (effect size = .218).

Does GDA vs. CDA have any significant effect on L2 learners' intrinsic motivation?

To examine the effect of GDA vs. CDA on learners' intrinsic motivation, a chi-square for group independence was run because we were inclined to examine the effect of one nominal variable with three levels (i.e., GDA, CDA, and control) on another nominal variable with two levels (i.e., intrinsically motivated and unmotivated) (Pallant, 2020).

According to the results of Table 14, there were only 5 motivated learners in GDA, 8 motivated ones in CDA, and 6 motivated subjects in the CG on the pretest.

Table 12 Crosstab

			Anxiety_time2		Total
			High-anxiety	Low-anxiety	
Condition	GDA	Count	7	24	31
		% within Condition	22.6%	77.4%	100.0%
		% within Anxiety_time2	21.9%	40.7%	34.1%
		% of Total	7.7%	26.4%	34.1%
	CDA	Count	11	20	31
		% within Condition	35.5%	64.5%	100.0%
		% within Anxiety_time2	34.4%	33.9%	34.1%
		% of Total	12.1%	22.0%	34.1%
	CG	Count	14	15	29
		% within Condition	48.3%	51.7%	100.0%
		% within Anxiety_time2	43.8%	25.4%	31.9%
		% of Total	15.4%	16.5%	31.9%
Total		Count	32	59	91
		% within Condition	35.2%	64.8%	100.0%
		% within Anxiety_time2	100.0%	100.0%	100.0%
		% of Total	35.2%	64.8%	100.0%

Table 13 Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	4.341	2	.114
Likelihood ratio	4.410	2	.110
Linear-by-linear association	4.293	1	.038
N of valid cases	91		

Based on the results of Table 15, at 2 degrees of freedom, the difference between motivated and unmotivated subjects on the pretest was nonsignificant ($p > 0.05$).

However, on the posttest, there were 16 motivated learners in GDA, 18 motivated subjects in CDA, and 9 motivated ones in the control condition (Table 16).

The results of Table 17 show that the difference between motivated vs. unmotivated learners on the posttest in response to the different types of DA turned out to be significant at 2 degrees of freedom ($p < 0.05$). However, the effect size was found to be small (effect size = .228).

To sum up, a one-way between-groups ANOVA showed that both GDA and CDA groups outperformed the CG in terms of listening development ($p < 0.05$); however, the difference between the two experimental groups was nonsignificant ($p > 0.05$). Additionally, a chi-square for group independence showed that both experimental conditions enhanced L2 learners' level of perfectionism. Likewise, both types of DA were found to be facilitative of language anxiety. Moreover, the treatment could also increase subjects' intrinsic motivation.

Table 14 Crosstab

| | | | Intrinsic motivation time1 | | Total |
			Motivated	Unmotivated	
Condition	GDA	Count	5	26	31
		% within Condition	16.1%	83.9%	100.0%
		% within Intrinsic_motivation_time1	26.3%	36.1%	34.1%
		% of Total	5.5%	28.6%	34.1%
	CDA	Count	8	23	31
		% within Condition	25.8%	74.2%	100.0%
		% within Intrinsic_motivation_time1	42.1%	31.9%	34.1%
		% of Total	8.8%	25.3%	34.1%
	CG	Count	6	23	29
		% within Condition	20.7%	79.3%	100.0%
		% within Intrinsic_motivation_time1	31.6%	31.9%	31.9%
		% of Total	6.6%	25.3%	31.9%
Total		Count	19	72	91
		% within Condition	20.9%	79.1%	100.0%
		% within Intrinsic_motivation_time1	100.0%	100.0%	100.0%
		% of Total	20.9%	79.1%	100.0%

Table 15 Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.880[a]	2	.644
Likelihood Ratio	.883	2	.643
Linear-by-Linear Association	.201	1	.654
N of Valid Cases	91		

Discussion

This study was conducted to check the probable impacts of GDA vs. CDA on L2 learners' listening development, perfectionism, anxiety, and intrinsic motivation. To this end, through an OQPT, a total of 91 intermediate learners of English as an L2 were selected and divided into a GDA, a CDA, and a CG. The results of statistical analyses showed that learners performed similarly at baseline; however, those in both experimental conditions outperformed the CG on the posttest in terms of listening development. The results further showed that both GDA and CDA were facilitative of L2 learners' perfectionism. Additionally, the treatment could lower learners' anxiety. Furthermore, both GDA and CDA could ameliorate learners' intrinsic motivation.

The first objective of this study was to investigate the comparative effect of GDA vs. CDA on listening development. The results of this analysis showed that both GDA and CDA were facilitative of listening development and there was a nonsignificant difference between them in terms of their efficacy in listening development in an L2 context. The results of this study are in line with the study conducted by Yang and Qian (2019) who found that CDA can facilitate the reading proficiency of L2 learners better than traditional assessment. Of course, there are some differences between the current study and

Table 16 Crosstab

			Intrinsic_motivation_time2		Total
			Motivated	**Unmotivated**	
Condition	GDA	Count	16	15	31
		% within Condition	51.6%	48.4%	100.0%
		% within Intrinsic_motivation_time2	37.2%	31.2%	34.1%
		% of Total	17.6%	16.5%	34.1%
	CDA	Count	18	13	31
		% within Condition	58.1%	41.9%	100.0%
		% within Intrinsic_motivation_time2	41.9%	27.1%	34.1%
		% of Total	19.8%	14.3%	34.1%
	CG	Count	9	20	29
		% within Condition	31.0%	69.0%	100.0%
		% within Intrinsic_motivation_time2	20.9%	41.7%	31.9%
		% of Total	9.9%	22.0%	31.9%
Total		Count	43	48	91
		% within Condition	47.3%	52.7%	100.0%
		% within Intrinsic_motivation_time2	100.0%	100.0%	100.0%
		% of Total	47.3%	52.7%	100.0%

Table 17 Chi-square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	4.751	2	.093
Likelihood ratio	4.846	2	.089
Linear-by-linear association	2.426	1	.119
N of valid cases	91		

that of Yang and Qian (2019). They focused on the efficacy of CDA on reading comprehension and compared CDA with traditional modes of assessment, but the current study focused on the comparative effects of CDA and GDA on listening development. The results of the study are also in line with Ahmadi Safa and Beheshti (2019). In their experimental study, these L2 researchers found that GDA can improve listening comprehension of L2 learners which is completely in line with our results. In another study, Mehri Kamrood et al. (2019) investigated the efficacy of CDA in language development. They found that CDA in superior to non-DA verifying the results of our study. Another previously cited study that verifies the results of our analysis is that of Fekri Pileh Roud and Hidri (2021). These researchers found that CDA can ameliorate listening comprehension which is completely in line with our findings.

The second objective of the study was to investigate the effect of GDA and CDA on L2 learners' perfectionism. The results of our analyses showed that both types of treatment can increase learners' level of perfectionism with no significant difference between the two variations of DA. The results of this study reject the reports of Amini and Shamlou (2017) who found that there is no difference in how the level of perfectionism (i.e., perfectionism vs. non-perfectionism) can affect top-down listening comprehension.

However, the results of our analysis found exactly the reverse. However, the results of this study are in line with Chasetareh (2022) who found that perfectionism is directly related to higher L2 accomplishment.

Another aim of the study was to look into the effect of GDA and CDA on learners' anxiety levels. The results of our study showed that both types of treatment can lower L2 learners' anxiety. Out results are consistent with that of Ritonga et al. (2022) who found that DA can decrease FLCA. Although Estaji and Farahanynia (2019) mainly focused on the effect of DA on anxiety in oral narratives, their results are consistent with ours as they also found that DA can decrease anxiety. Zarei and Shishegarha (2023) also showed that anxiety in response to DA decreases which corroborates our findings. Our results also verify the findings of Azizi and Farid Khafaga (2023).

The last objective of the study was to find the effect of CDA and GDA on learners' intrinsic motivation. The results of this study showed that both types of DA (i.e., GDA and CDA) are facilitative of L2 learners' intrinsic motivation. In this respect, the results of the study are in line with that of Ritonga et al. (2022) who found that DA can facilitate FLLM in learners. Additionally, the study by Zoghi and Malmeer (2013) showed that DA can enhance intrinsic motivation in learners which supports our findings.

This study found support for both types of DA. That is, by offering a sociocultural intervention to learners not only L2 learners' listening developed, but also their perfectionism increased, their anxiety lessened, and their intrinsic motivation ameliorated. This is in line with Vygotskian-thinking (1978). According to Vygotsky (1978), Lantolf (2009), and Poehner (2009), DA could provide learners with an intervention in a way that enhances learners' ZPD increasing learners' independent capabilities. Additionally, according to Ünal (2021), CDA is facilitative of language abilities in learners, especially in large classrooms which was the case in this study. Computerized dynamic evaluation integrates interactionist and non-dynamic assessment forms by giving students the mediation they need while simultaneously fulfilling the statistical requirements of tests (such as validity) on behalf of the standardized mediations (Poehner, 2008). Since the CDA technique is derived from the interventionist model of DA, which can administer the test to numerous students, it has an advantage over DA in terms of this potential.

Additionally, this study showed that both types of DA can increase L2 learners' perfectionism with an insignificant difference. Studies on productive skills have shown that excessive anxiety over accuracy errors and inappropriate perfectionism inhibit learners from developing communicative language (Yoshida 2013). Maladaptive perfectionism would also lead to concerns with efficiency. The pupils run the risk of becoming bystanders as a result (Liu & Jackson, 2008). Thus, by providing a sociocultural intervention, learners' perfectionism increases.

In addition, learners' anxiety decreased in response to both types of DA. One of the reasons cited in the literature for anxiety is the fear of poor evaluation (Horwitz et al., 1986). This study showed that GDA and CDA can lessen L2 learners' anxiety levels. Thus, DA can be said to be ancillary, not poor.

Furthermore, this study showed that learners' intrinsic motivation increased as a result of being exposed to DA. If the task is interesting and challenging, and learning is perceived as a goal in and of itself, learners will become intrinsically motivated (Ehrman et al., 2003). Learners intrinsically like an L2 is how intrinsic motivation is defined in the

context of learning a second or foreign language (Wu 2003). Thus, it stands that DA can offer such an interesting and challenging task and opportunity for learners.

In short, this study found that both types of GDA and CDA could affect learners' listening comprehension, perfectionism, anxiety, and intrinsic motivation. The difference between GDA and CDA did not turn out to be significant corroborating the efficacy of both. This finding shows that no matter what type of DA is offered to learners, as far as learners are exposed to a nonthreatening treatment that is driven by sociocultural theory, learners' listening comprehension could improve, perfectionism level and intrinsic motivation could be increased, and language anxiety might become lowered.

Implications of the study

The previous discussion has some implications for practitioners implementing L2 DA and CDA. Before utilizing DA or CDA to evaluate a group's ZPD, it is recommended to perform a thorough examination to comprehend each individual's ZPD within the group. If different levels are found, then is it advisable to divide the group into subgroups with comparable individual ZPD levels. This technique can be particularly advantageous when a large class included diverse learner levels. Anton (2009) effectively used DA to classify students based on their ZPDs.

Regarding the pedagogical implications, this study proposes that DA and CDA can lead to changes in listening comprehension, perfectionism, anxiety, and motivation by providing teachers with the opportunity to work with small and large classes and allowing for peer interactions. This approach enables teachers to better cater to each learner's needs and allows learners to apply mediation to their texts as well as those of their peers. Additionally, records of learners' microgenetic development can be used to develop new computer-assisted syllabi or instructional plans based on the learners' emergent pattern of development and recognize the unpredictability of the learning process. The emergent DA syllabi can showcase learners' development stage with different proficiency levels and the strategies they use in responding to mediation. This makes CDA attractive to teachers and materials developers. Furthermore, syllabi designers should have sufficiency knowledge not only of language teaching but also of modeling learners' performance to elucidate the operating rules they use for language production and modification.

Moreover, learners' interaction in response to DA can trigger their developmental levels and hone their interlanguages. In essence, CDA and DA have significant pedagogical implications for instruction and individual differences and can facilitate more personalized and effective learning experiences for learners.

The findings of this study have significant theoretical implications for second language acquisition research. Firstly, the study corroborates the effectiveness of dynamic assessment techniques in enhancing L2 listening skills. Dynamic assessment, in particular, GDA and CDA, provides a more personalized and interactive method of assessment, emphasizing the importance of feedback and coaching in the learning process. This finding is consistent with the sociocultural theory of learning, which emphasizes the role of social interaction and collaboration in learning (Vygotsky, 1978).

Secondly, the study highlights the potential of GDA and CDA in improving learners' psychological factors, such as perfectionism, language learning anxiety, and intrinsic

motivation. These factors are crucial in language learning, as they can influence learners' engagement, persistence, and performance. The findings suggest that dynamic assessment methods can enhance learners' psychological well-being, leading to more effective language learning outcomes.

Thirdly, the study underscores the importance of individual differences in language learning. The effectiveness of GDA and CDA varied among learners, indicating that learners have different learning potentials and preferences. This finding is in line with the cognitive-interactionist theory, which emphasizes the role of individual differences in language acquisition. The study suggests that dynamic assessment methods can help identify learners' individual learning potentials and tailor instruction to their needs.

Conclusion

This study was conducted to investigate the comparative effects of GDA and CDA on L2 learners' listening development, perfectionism, anxiety, and intrinsic motivation. To this end, 91 intermediate learners of English were selected and received instruction based on the principles of GDA and CDA. The results of the study showed that both GDA and CDA facilitate listening development, increase perfectionism, lower anxiety, and increase intrinsic motivation.

In conclusion, the comparative study of GDA and CDA on the listening development of L2 learners has shown that both interventions are effective in enhancing listening skills. Additionally, both interventions have positive effects on learners' psychological factors, such as perfectionism, language learning anxiety, and intrinsic motivation. The findings of this study have important implications for language teachers, curriculum developers, and policymakers in designing effective language learning programs that take into account the diversity of learners' needs and preferences. Future research can build on these findings by exploring the long-term effects of dynamic assessment methods on language learning outcomes and identifying the factors that influence their effectiveness.

Although the study found some interesting results, this is not to suggest that it is free of flaws. One of the flaws in this study is convenience sampling selection which is, according to Ary et al. (2019, not a strong sampling method. Future studies can use random sampling to obviate this pitfall. Another shortcoming is that there was not any delayed posttest; thereby it is unclear whether the results are durable. So, future studies can add a delayed posttest to their design to address this shortcoming. Another direction is to replicate the experiment in a different geographical area with different participants with different proficiency levels to see if similar results could be attained.

Abbreviations

GDA	Group dynamic assessment
CDA	Computerized dynamic assessment
CG	Control group
ZPD	Zone of proximal development
DA	Dynamic assessment
TOEFL	Test of English as a Foreign Language
ANOVA	One-way analysis of variance
the SAF	Speaking Accuracy and Fluency
FLCA	Foreign Language Classroom Anxiety
FLCM	Foreign Language Learning Motivation
EFL	English as a Foreign Language

CAF	Complexity, Accuracy, And Fluency
BTPS	Big Three Perfectionism Scale
MLS	Metacognitive Listening Strategy
IELTS	International English Language Testing System
InAG	Interactionist Group
InVG	Interventionist Group
OQPT	Oxford Quick Placement Test
APS	Ahvaz Perfectionism Scale
SRG-A	Academic Self-Regulation Questionnaire
STAI	State-Train Anxiety Inventory
SPSS	Statistical Package for Social Sciences

Availability of data and materials
The authors state that the data supporting the findings of this study are available within the article.

Declarations

Competing interests
The authors declare that they have no competing interests.

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