Implementing Group Dynamic Assessment to Enhance Iranian High School Students' Grammar Ability

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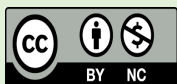
Abstract

Theoretically drawing on Vygotsky's sociocultural theory of mind (SCT) and following a sequential exploratory mixed method design, this study probed into the impact of Group Dynamic Assessment (GDA) on the short and long-term Iranian high school students' grammar ability. Also, a focus group interview was conducted to explore students' attitudes toward concurrent GDA. This study used a convenient sample of 42 Iranian third-grade students in a private high school who prepared to participate in the Iranian University Entrance Exam (IUEE). The students of the two groups (i.e., GDA and Non-GDA) followed the same procedure (i.e., DIALANG test, pre-test, three conventional teaching sessions and one enrichment session, focus group interview (for GDA group), post-test and transcendence test). Quantitative findings using three independent sample t-tests and two repeated measure ANOVAs revealed that the GDA group significantly outperformed the non-GDA group regarding grammar ability and could apply them in more demanding circumstances. Besides, the thematic analysis of qualitative data showed that the concurrent GDA assisted students to improve their grammar ability. The study's findings highlight the importance of applying GDA as a mediational procedure that assists students in developing their grammar ability in L2 contexts. The findings of the study may assist L2 teachers to apply GDA procedure in their classrooms to save time for teaching and assessing grammatical structures.

Introduction

Dynamic assessment (DA) has gained colossal attention in language assessment and educational sciences over the past three decades (e.g., Ebadi & Rahimi, 2019; Kozulin & Garb, 2002; Poehner, 2009 and Randall & Urbansky, 2023). Vygotsky's sociocultural theory of mind (SCT) supports this post-psychometric assessment culture, particularly the concepts of the zone of proximal development (ZPD) and mediation. The ZPD means that, through guidance and support, studentss can move from an existing level of performance to a higher level of development. Furthermore, Rassaei (2021) defined mediation as a supportive mechanism that allows students to do tasks they cannot perform independently.

Multiple scholars (e.g., Estaji & Forough Ameri, 2020; Mehri & Amerian, 2015; Razavipour & Rezaee, 2017) supported Beaumont et al. (2011) that DA is a process-oriented alternative assessment which enhances the students' responsibility for their learning. Otherwise stated, in this mode of assessment, the relationship between the student and mediator/teacher is crucial as it reflects the gap between what students are competent to learn and what they already know (Pileh Roud & Hidri, 2021). Besides, Bachman and Palmer (2010) believed that DA appropriately combined instruction and assessment into one single operation by providing contingent and graduated mediation. Aljaafreh and Lantolf's (1994) study provided an excellent example of providing feedback within a student's ZPD. They recommended two essential aspects for providing feedback within the students' ZPDs. First, feedback should be graduated to assess the minimum level of assistance required by a novice to complete a given task successfully. Second, they should be contingent; that is to say, instructive assistance should be provided only when necessary and withdrawn as soon as the novice demonstrates self-control and the ability to operate independently. They did the one-to-one DA format to realize how negative feedback will regulate students' writing within their ZPDs. The challenges associated with the interactionist dynamic assessment procedure in EFL classrooms include time restrictions, as noted by Haney & Evans (1999). This limitation may hinder the thoroughness of the assessment process. Additionally, the limited number of participants, as highlighted by Ebadi (2014), may impact the generalizability of the findings. Furthermore, the capacity of a single dynamic assessment study to cover various structural components, as discussed by Kamali et al. (2018), presents a challenge in achieving a comprehensive understanding of language development in the EFL context. These challenges underscore the complexity of implementing dynamic assessment procedures in EFL classrooms and the need for careful consideration of these limitations in research and practice.

Poehner (2009) proposed the Group Dynamic Assessment (GDA) procedure as a sensible solution to the challenges of conventional DA procedure in various skills and sub-skills (e.g., Afshari et al., 2020; Sohrabi & Ahmadi Safa, 2020). However, a few studies have addressed the students' grammar ability (GA) through applying the GDA procedure in EFL classrooms (Estaji & Forough Ameri, 2020; Razavipour & Rezaee, 2017). Although implementing the GDA procedure in these studies improved the participants' grammatical abilities, they did not address the transcendence (TR) tasks as a vital assignment to evaluate test-takers' sustainability of the considered structures. As Kao (2020) stated, transcendence is the individual's cognitive

awareness applicable to more demanding circumstances. Besides, according to Purpura (2004), grammatical ability is the combination of grammatical knowledge and strategic competence, and it is defined as the student's ability to recognize grammatical ability properly and purposefully in testing or other language-use situations. Furthermore, many students and instructors struggle with developing grammatical ability in EFL classrooms (Mehri & Amerian, 2015). Hence, this study aims to implement DA techniques to determine the impact of the GDA procedure's short and long-term efficiency on the grammatical ability of Iranian third-grade high school students.

Literature review

Theoretical Underpinnings of DA

DA is rooted in Vygotsky's sociocultural theory (SCT), which integrates social and cultural contexts (Lantolf, 2000). Van Der Veen et al. (2016) expounded that an individual and his environment are not two independent elements in Vygotsky's opinion; instead, they manipulate each other conjointly in a spiral phase of enhancement. That is why Poehner (2008) stated that DA is derived from SCT and synthesizes teaching and assessment through interaction and mediation. Mediation plays a central role in DA, which aims to assist individuals in reaching the most proximal stage of cognitive development (Bakhoda & Shabani, 2017). Unlike the terminology of evaluator neutrality in the Non-Dynamic Assessment (NDA) process, in the normal DA process, the evaluator/mediator can intervene to help the students complete a task independently through graduated and contingent mediations. Integrating Vygotsky's sociocultural theory into the teaching methodologies of GDA for grammar improvement can lead to effective and engaging language learning experiences for students. By emphasizing social interaction, scaffolding, ZPD, cultural relevance, and authentic language use, teachers can create a supportive and enriching environment for grammar learning in L2 classrooms (e.g., Abdelaziz & Al Zehmi, 2020; Khatib & Chalak, 2022).

Ableeva (2010), congruent with Aljaafreh and Lantolf (1994) developed a regulatory scale of mediation out of interactions between mediator and student from the most implicit to the most explicit order (e.g., Ashtarian et al., 2018; Bahramlou & Esmaeili, 2018; Ghahderijani et al., 2021). Because of time restrictions and many students' participation and support to reach the course targets, instructors often cannot convey individual interaction in classroom settings (Davin & Donato, 2013). That is why Poehner (2009) introduced the notion of GDA to resolve the mentioned problems. In developing his thoughts about GDA, Poehner (2009) based them on Vygotsky's (1978) and Petrosky's (1985) ideas, who asserted that communicating with group members is a vital component of group work as it is the sharing of information and abilities which moves the group forward in its ZPD, while also benefiting individuals. Poehner (2009) introduced concurrent and cumulative approaches to GDA. Although both endeavors to guide individuals through graduated and contingent mediations, they accomplish this in various ways. In the former, the instructor may offer mediation in response to a student. Still, the interaction rapidly shifts between the primary and secondary students (i.e., interactants) as one student asks questions, struggles, or comments, setting the stage for another's contribution. On the contrary, in the latter, the instructor involves a student in a series of one-to-one interactions

as the group moves towards mastering a problem. That is why Poehner rated GDA as an efficient alternative to conventional DA.

Group dynamic assessment studies of grammar

An extensive array of studies has attempted to implement GDA procedure in second or foreign language learning contexts to address the inadequacy of non-dynamic assessment (NDA) in providing a comprehensive description of students' abilities in L2 grammar and reveal the assisting role of GDA in providing teachers with a deep understanding of students' abilities (e.g., Estaji & Forough Ameri, 2020; Lantolf & Poehner, 2011; Malmeer & Zoghi, 2014; Sharafi & Sardareh, 2016). For instance, Razavipour and Rezaee (2017) examined the effect of GDA on the grammar development of 90 Iranian female high school students. Implementing the GDA principles in their research helped the students to improve their grammatical abilities. Still, the scholars did not incorporate TR as a vital part of DA studies to evaluate the individual sustainability of the assessed structures. Feuerstein et al. (1988) first proposed the notion of transcendence in the prominent list of Mediated Learning Experience (MLE), which refers to the ability of individuals to transfer and apply their learning from one context to another, to generalize their knowledge and skills, and to go beyond the immediate task at hand.

In a local study, Estaji and Forough Ameri (2020) investigated the impact of implementing GDA principles on students' grammar achievements at two proficiency levels (ie., pre-intermediate and upper-intermediate students). Although the Iranian EFL students benefited from the interventionist approach of the GDA procedure, they suffered the time-consuming process of providing hints and prompts. In other words, eight grammatical structures were mediated for each group in 8 sessions.

Alemi et al. (2019) followed an online concurrent interactive approach and provided contingent and graduated mediation to enhance 60 EFL students' written grammatical accuracy via Telegram. Their study called into question for some significant reasons. Providing online graduated and contingent written mediations to facilitate 10 to 16-year-old EFL students' grammar accuracy via Telegram is difficult. Firstly, the age range of the students presents a challenge as it requires age- appropriate content and teaching methods to keep them engaged and motivated. Additionally, the online platform may not provide the same level of interaction and immediate feedback as in-person instruction, making it harder to gauge the students' understanding and progress. Furthermore, ensuring that the mediations are graduated and contingent, tailored to the individual needs of each student, can be complex in an online setting. Lastly, the technological limitations and potential distractions on the Telegram platform may further hinder the effectiveness of the mediations.

In spite of the positive role of GDA in improving students' grammar ability (e.g., Abbasi & Fatemi, 2015; Anton, 2003; Majdedin et al., 2015; Mohammadi Moghadam, 2015), scant consideration has been paid to divulge whether GDA can facilitate grammar improvement. Except for Estaji and Forough Ameri (2020) who pursued the students' attitudes towards implementing GDA in L2 classrooms, other GDA studies published so far remain silent in this regard. Hence, one of the most crucial issues in post-GDA studies is the lack of students' attitudes towards pedagogical values. L2 GDA academic studies are in their infancy, and

learning students' attitudes towards the dynamic process of L2 classroom procedure is necessary for promoting future GDA studies. It should be noted that understanding the impact of GDA on grammar ability in EFL contexts can provide valuable insights into the effectiveness of collaborative learning approaches. GDA focuses on assessing how individuals interact and collaborate within a group setting, and its application to grammar instruction can shed light on how collaborative activities and group dynamics influence language learning outcomes. The following research questions guided the current study:

Does implementing the GDA procedure significantly change Iranian high school students' grammatical ability?

To what extent does GDA assist students in transferring their learning experience to new and demanding problems?

What are the Iranian high school students' attitudes towards the grammar GDA procedure?

Method

Design

A sequential exploratory mixed method design (Creswell, 2008) was used in the current study. That is to say, the Iranian third-grade high school students' grammatical abilities were first explored quantitatively in GDA and then analyzed and described both quantitively and qualitatively. Quantitative data were collected using a pretest-posttest-TR test procedure. Also, qualitative data were gathered through a microgenetic development and a focus-group interview. Wagoner (2009) succinctly summarizes the key features of the microgenetic method as: (1) focusing on the active process of thinking rather than just the end product, (2) analyzing qualitative data that includes elements beyond just sensation and imagery, and (3) emphasizing a closely interdependent relationship between the experimenter and participants. Hence, the present study purported to further our understanding of the effects of GDA on improving Iranian high school students' grammar ability quantitatively and qualitatively.

Participants

Regarding Ary et al. (2018), a convenient sample of 42 Iranian third-grade male students in a private high school were selected to participate in the current study. As Riazi (2016) noted, the convenience sampling method entails the selection of participants based on their accessibility and ease of inclusion for the researchers. They were preparing for the Iranian University Entrance Exam, Known as IUEE. The IUEE is a set of multiple-choice questions for different lessons in partnership with the National Organization of Educational Testing of Iran (NOET) and major universities nationwide (Khodi, Alavi & Karami, 2021). The students in this study where all male since the researchers did not have access to female subjects. Female high school students were not included in the current study due to the fact that schools in Iran are segregated by gender. All the participants were native speakers of Persian, aged 17 to 18 years. DIALANG, a free web-based online assessment system, was used to check participants' proficiency levels. According to the Common European Framework of Reference for Languages (CEFR), the DIALANG results indicated that 36 participants' grammar performance was ranked at the B1 level. Six students were removed from the process due to

the incompatible proficiency level. In other words, they were at A2 and A1 levels. All participants majored in non-linguistic disciplines, including experimental sciences and mathematics. They were randomly labeled as the GDA group (*n = 18*) and non-GDA group (*n = 18*). Eventually, the participants were assured that all data would remain confidential and would be applied for research purposes.

Instruments

The researchers used several instruments to collect the needed data, briefly described below.
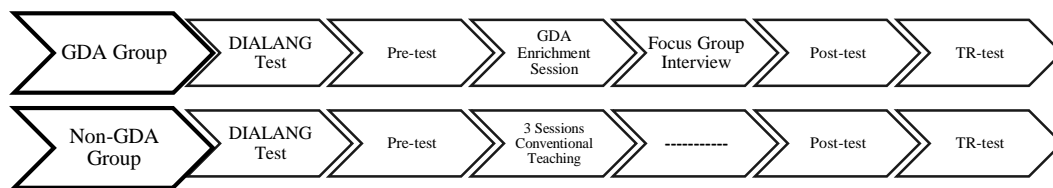
DIALANG test

DIALANG, available at https://dialangweb.lancaster.ac.uk/ is a free online web-based diagnostic system to check the individual's proficiency level based on the Common European Framework of References for Languages (CEFR) ranging from A1 (the lowest level) to C2 (the highest level). The researchers used this tool to check the homogeneity of the participants. The result of the DIALANG indicated that 36 participants were at the B1 level.

Grammar tests

Before beginning the study, the students' areas of difficulty in grammar section of IUEE were checked through Kanoon's scoring profile. Kanoon is a well-prepared simulating test to check the students' potential in various subjects, including English grammar. After inspecting the participants' areas of difficulty with Kanoon's scoring profiles, five grammatical structures, including passive voice, relative clauses, past perfect, tag questions, and conditional type 2, were recorded as participants' areas of difficulty. Therefore, three grammar tests were applied, including a pre-test, a post-test and a TR test. The same pre-test and post-test included 25 multiple-choice questions taken from IUEE. Before administering the test, it was piloted with the 20 non-participant third-grade high school students whose proficiency levels were ranked as B1 by the DIALANG test. Kuder-Richardson 20 (KR-20 = .74) was used to determine its reliability. Then, the pre-test was administered two days before the enrichment session, and the post-test was administered two days after the enrichment session. Besides, the TR test paralleled the pre-test and post-test, featuring a similar number of questions and response options. Although focusing on the same grammatical structures, the TR task was more complex compared to the pre-test and post-test and implemented two weeks after the post-test. It is worth noting that the TR questions were derived from the English IQ book, which consists of categorized multiple-choice questions designed to simulate IUEE. The categorization of grammatical structures based on their difficulty level helped the researchers develop more challenging questions in comparison to the pre-test and post-test to meet the TR's criteria. It is worth mentioning that the researchers with the assistance of two test developers, analyzed 75 questions before finalizing the content of the TR test. Then, the test was piloted to the same 20 non-participants who took part in the pre-test phase, and the reliability was assessed using Kuder-Richardson 20 (KR-20 = .71).

Focus group interview

Focus group interview was used as another research instrument in the current study. Six students from the GDA group were invited to a Skype video calling system to articulate their attitudes toward the GDA procedure's effectiveness in enhancing their grammar ability. Besides, one of the researchers encouraged and managed the students to uncover how the GDA procedure led to the development of their grammar ability. It is worth noting that the interview was conducted in the students' native language (i.e., Persian) to let the students express their attitudes comfortably. Also, the interview was video-recorded, transcribed and translated into English for further analysis. It should be noted that the focus group interview was conducted after the enrichment session and lasted around one hour.

| GDA Group | DIALANG Test | Pre-test | GDA Enrichment Session | Focus Group Interview | Post-test | TR-test |
| Non-GDA Group | DIALANG Test | Pre-test | 3 Sessions Conventional Teaching | ------------ | Post-test | TR-test |

Figure 1. *The Schematic Representation of the Data Collection Process*

Data collection and analysis procedure

The data collection procedure was completed over the course of about a month and followed the six steps as represented in Figure 1. It is worth mentioning that all the steps except the focus group interview step were conducted in the private high school's language lab.Before the scheduled sessions, the students were presented with two short videos introducing step-by-step instructions for using Dialang and Google Forms. At first, the DIALANG test available at https://dialangweb.lan caster.ac.uk/ was used to check the homogeneity of the participants. The result of the DIALANG ranging from A1 to C2, according to CEFR, revealed that 36 out of 42 participants were at the B1 level. Next, the students in both groups (i.e., GDA and Non-GDA) participated in a pre-test, which included 25 multiple-choice questions sourced from IUEE. It is worth noting that the pre-test questions were entered in Google Forms.

The next step was the enrichment session, which lasted ninety minutes in a single session. It should be noted that before the enrichment session, one of the researchers briefly explained the GDA procedure. Twenty-five multiple-choice questions were taken from Kanoon's grammar section, and all the choices were removed to create an interactional situation in the classroom. The researchers assigned five questions to each grammatical structure and followed Davin and Donato's (2013) graduated and contingent mediation typology, as presented in Table 1. Notably, all the mediations were provided through a combination of English and Persian to avoid any possible misunderstanding on the students' side. As the teacher/mediator of the class, one of the researchers displayed the first question on the screen via the video projector and asked a student to complete the blank space. If the student answered that question correctly on the first attempt, all the students were allowed to hear the elaboration of why that was the correct response before continuing with the following question. If that student answered that question incorrectly in the first attempt, the teacher (i.e., mediator) offered a mediating hint

that attuned to the groups' ZPD, and the mediator provided mediation to the secondary interactants. Hence, the first hint is the most implicit. This process continued with the second and third mediating hints. Finally, the last mediating hint provided the correct response accompanying its elaboration. It is worth noting that the session was recorded for further analysis. The day after conducting the GDA procedure, a voluntary focus group interview was run with the six students of the GDA group. Then, the pre-test questions were implemented as a grammar post-test to measure the students' grammar ability. Two weeks later, the TR test was administered to check the students' sustainability in applying the intended grammatical structures to new and more demanding challenges. Afterward, all the data were fed to SPSS (version 26) for the analytical process.

Table 1. *Mediation Typology Provided by the Mediator (Adapted from Davin & Donato, 2013)*

Level of Explicitness	Mediation/Prompt
Prompt 1	Pause with a skeptical look
Prompt 2	Repetition of the entire sentence by the teacher with emphasis on the location of the error
Prompt 3	Point to the words can assist students in reaching the correct answer
Prompt 4	Forced choice option
Prompt 5	Correct response and explanation provided

Since the current study was a mixed-methods, the data were collected and analyzed quantitatively and qualitatively. Regarding the quantitative part (i.e., first and second research questions), three independent sample t-tests and two repeated measure ANOVAs were used to find the possible differences between and within students' grammar ability at the three points.

Concerning the qualitative part, a focus group interview was applied to investigate the students' attitudes towards the impact of the GDA procedure on their grammatical abilities. The interview was conducted in the students' native language (i.e., Persian) and was video-recorded, transcribed, and translated into English for further analysis. It should be noted that the content analysis was applied to analyze the data of the qualitative part. Mackey and Gass (2016) asserted that the rudimentary aim of the content analysis approach is to make sense of the content of the interactions among individuals. Hence, the researchers applied open, axial, and selective coding stages (Dornyei, 2007). In the open coding stage, the researchers read the transcribed interviews to make sense of them as much as possible. In the axial coding stage, the main themes were elicited and verified. Finally, the participants' attitudes were categorized under elicited themes in the selective coding stage. Also, a member-checking technique (Creswell, 2007) was used to verify the credibility of the participant's answers to the interview questions. To this aim, the transcribed interviews were returned to the participants to inspect their accuracy further and make probable adjustments and modifications.

Result and discussion

Quantitative section

Pre-test, immediate post-test and delayed-post-test between the two groups (T-test)

Three independent sample t-tests were carried out to determine if the use of the GDA procedure assisted Iranian high school students in enhancing their grammar ability. As indicated in Table 2, there is no statistically significant difference in the pre-test scores of the Non-GDA and GDA groups (*p = .55*). This aligns with the Dialang test results in showing the homogeneity of the two groups.

The second independent sample t-test was conducted to show potential differences post-test scores between Non-GDA and GDA groups. As Table 2 delineates, there is no statistically significant difference between the two groups (*p = .07*), but comparing the mean score of the GDA group (*M = 14.28*) with the Non-GDA (*M = 12.56*) reveals the efficiency of GDA procedure in improving students' grammar ability. This phase of the study reinforces the findings of Estaji and Forough Ameri (2020) and Majdedin et al. (2015), who supported the implementation of the GDA procedure in L2 classrooms as a post-psychometric mode of assessment to enhance students' grammar ability. Besides, the synthesis of assessment and teaching assisted the mediator in avoiding teaching and assessing separately.

The third independent sample t-test was conducted to verify the possible differences in scores of Non-GDA and GDA groups. As Table 2 shows, there is a significant difference between the two groups' performance in the TR test (*p = .00*). Implementing the GDA procedure helped the GDA group sustain their performance in increasingly more challenging tasks. This line of the study supports the primary maxim of Vygotskian SCT, which emphasizes the social learning oriented. In other words, learning occurs through collaboration or guidance of competent peers or mediators to internalize and self-regulated language competence and transfer the previous learning into more challenging tasks (Poehner, 2007; Vygotsky, 1978). Also, this development indicates no endpoint for enhancing cognitive awareness abilities.

Table 2. *Independent sample T-tests on Pre-test, Post-test and TR-test*

Test	Group	N	Mean	SD	Sig. (2-tailed)
Pre-test	Non-GDA	18	10.56	2.12	.55
	GDA	18	10.17	1.82	
Post-test	Non-GDA	18	12.56	2.43	.07
	GDA	18	14.28	3.15	
TR test	Non-GDA	18	10.28	2.51	.00
	GDA	18	13.83	2.74	

Pre-test, post-test and delayed-post-test differences for the Non-GDA and GDA groups (ANOVA)

Two Repeated Measure ANOVAs were conducted to evaluate the effects of GDA and conventional teaching on Iranian high school students' grammar ability at three-point times. Pairwise comparisons for non-GDA revealed statistically significant differences between pre

and post-tests (p = .00) and post and TR tests (p = .00), while not between the pre and TR tests (p = 1.00) (See Table 3). The same procedure for GDA group indicated significant differences between pre and post-tests (p = .00) and pre and TR tests (p = .00), but not between post and TR tests (p = .74). As stated earlier, both groups' performances improved from pre-test to post-test (See Table 2). Further analysis led to the conclusion that GDA group performed significantly better in the post-test (*M = 14.28*) than in the pre-test (*M = 10.17*) (See Table 2). In the same vein, non-GDA group performed meaningfully better in the post-test (*M = 12.56*) than in the pre-test (*M = 10.56*). These findings reveal that the GDA grouo benefitted from GDA instruction while the non-GDA group did not significantly improve during the past 3-sessions of teacher-driven grammar mode compared to GDA group. In the TR test, GDA group could transfer the intended grammatical structures into more demanding tasks, as there is no significant difference between their post and TR tests' mean scores (see table 2), while a significant difference was detected between the post and TR tests' scores of the non-GDA (p = .00). In other words, applying a teacher-driven grammar mode could not assist the students in transferring the grammatical structures into more challenging tasks.

As Brown and Ferrara (1985) stated, the majority of the research conducted on TR indicates a sharp difference between performance in stages prior to TR and within TR (often with failures), but in the current study, GDA group's performance on the TR test has revealed signs of progression. As students have internalized the mediation in the earlier stages, they no longer require the same level of mediation (Poehner & Lantolf, 2013).

Table 3. *Pairwise Comparisons Across the Three Tests within Each Group*

Group	(I) time	(J) time	Mean differences (I-J)	Sig. b
Non-GDA	1	2	-2.000*	.00
		3	.278	1.00
	2	1	2.000*	.00
		3	2.278*	.00
	3	1	-.278	1.00
		2	-2.278*	0.00
GDA	1	2	-4.111*	.00
		3	-3.667*	.00
	2	1	4.111*	.00
		3	.444	.74
	3	1	3.667*	.00
		2	-.444	.74

Qualitative section

Three excerpts are presented below to show the graduated interaction between the mediator (M) and students (S1, S2, S3) to provide the GDA procedure's efficiency to students' grammar ability in L2 classrooms. Underlined is used to show the location of the error that the mediator is mediating.

Excerpt A

1. M: He and his friend got lost while they were walking around the town because he had forgotten the name of the hotel, ……………...?
2. S1: I think, does he is right.
3. (Pause with a skeptical look). (prompt 1)
4. S2: Didn't he?
5. M: <u>He and his friend</u> got lost while they were walking around the town because he had forgotten the name of the hotel, ……………...?
6. S2: Didn't they?
7. M: That's it. So, he and his friend is the subject of the sentence, and you must use the plural pronoun (they) here.

This phase of the study indicated that the graduated mediation provided by the mediator assisted the students in identifying and rectifying the error's location. Besides, the mediator provided the students with an explicit explanation of the correct answer.

Excerpt B

1. M: If my mother cut the cake into eight pieces, we ……………. equal shares. (get)
2. S1: Got would be right.
3. M: (Pause with a skeptical look). (prompt 1)
4. S1: Why got is incorrect?
5. S2: Teacher, will get Dorosteh? (Is it correct?)
6. M: Listen carefully. If <u>my mother cut</u> the cake into eight pieces, we ……………. equal shares. (get) (Prompt 2)
7. S2: Well, gets is correct.
8. M: My mother cut?
9. S3: I got it! My mother -s sevom shakhs nadare (doesn't have singular third-person -s), so it's conditional type 2 and would get doroste (is correct).
10. Your right. In conditional type 2, we use would/could/might + base form. Also, the conditional type 2 is used to talk about what you would generally do in imaginary situations.

In excerpt B, the process of presenting mediation pinpoints the importance of providing graduated and contingent mediation. As Lantolf and Poehner (2010) stated, providing mediation in a contingent and graduated way assists the sudents in reaching their own ZPDs and pushes them to fill their learning gaps. This line of the study corroborates the notion of scaffolding proposed by De Guerrero and Villamil (2000), who believed in supporting novice students to achieve a higher level of regulation with the assistance of a competent individual.

Excerpt C involves the interaction between the mediator and four students to reach the correct answer.

1. M: Last night, a bomb blew up the train …………… the enemy soldiers were travelling. (Relative clause)
2. S1: That?

3. M: (Pause with a skeptical look). (prompt 1)
4. S2: Whom?
5. M: Last night, a bomb blew up <u>the train</u> …………… the enemy soldiers were <u>travelling</u>. (prompt 2)
6. S3: It's not about human, so which is the best answer.
7. M: Pay attention to travelling. (prompt 3)
8. S3: Khob (So), travelling what? I would say which is correct.
9. M: Listen! Which by or that by?
10. S4: Which by?
11. M: That's it. The train is not human; hence, which or that can be correct, but in this case, travelling needs the preposition 'by' before which. Also, we cannot use prepositions before 'that.'

Excerpt C corroborates the findings of Ashtarian et al. (2018), Davin (2013), and Razavipour and Rezaee (2017), who reveal the benefits of the concurrent GDA for secondary interactants. In the present study, concurrent GDA improved the students' grammar ability and conceptualized the group ZPD rather than individual ZPDs (Poehner, 2009).

The third research question investigated the Iranian high school students' attitudes towards the effectiveness of GDA procedure in promoting their grammar ability. The content analysis of the transcribed interview yielded some themes related to the students' attitudes regarding the use of concurrent GDA procedures to improve their grammar ability (See Table 3).

Regarding the first theme, students maintained that presenting mediational moves from the most implicit to the most explicit assist them in reaching the correct answer gradually. They believed that receiving graduated mediation helped them detect grammatical issues and provided the chance to self-correct. Afshari et al, (2020) mentioned that engaging in the G-DA procedure, having the opportunity to self-correct, and paying attention to detailed components of the targeted issues are two advantages of applying the G-DA procedure in L2 classrooms.

In support of the second theme, students reported that analyzing and pursuing the mediational moves led them to think critically. They believed that mediational moves assisted them in thinking profoundly and reviewing previous understandings. Poehner (2009), congruent with this line of the study, asserted that the mediating moves encourage the students to think actively. He believed that each appropriate mediational move benefits each student, and both responsiveness to support and independent performance can determine this. Assessing and reassessing the mediational moves by the students are two critical factors in every DA session since the nature of DA is assisting students in promoting their knowledge of the targeted subject through the route of implicit to explicit mediation.

Table 3. *Themes Addressing Students' Attitudes Towards GDA Procedure*

Themes	Examples
The effectiveness of mediation	*Mediational moves assisted me in reaching the correct answer step by step. They helped me to notice my mistakes and correct myself.*
Enhancing critical thinking	*Graduated hints encouraged me to think critically. For example, when the teacher pointed to a word or phrase to guide me, I tried to analyze that part and asked myself why I should focus on that part.*
Promoting students' motivation	*I enjoyed answering the questions. That is to say, I was curious to find the correct answer, which motivated me to practice more with my classmates.*
Being stressful	*I felt uncomfortable when the teacher presented the meditation, and the class was silent. I was afraid of being judged by my classmates.*

On the side of the third theme, three students maintained that this mode of assessment stimulated us to practice the grammatical structures through collaboration instead of working on some inflexible grammar practices. This line of the study encouraged students to create a sense of willingness to practice grammar through cooperation with more competent individuals.

Finally, regarding the fourth theme, the only negative attitude reported by the students was associated with the stressful condition of the G-DA procedure. They highlighted that receiving mediation caused a stressful situation since the whole class was silent. This line of the study is in contrast to Davin (2011) who concluded that continuous exposure to concurrent GDA procedure had less threatening and anxiety-provoking effect on L2 students' anxiety and stress levels.

Conclusion and Implications

The study's findings indicate that concurrent GDA assists students in promoting their grammar ability by providing mediational moves. The result of the focus group interview uncovered that the Iranian third-grade high school students had positive attitudes towards implementing the GDA procedure in improving their grammar ability. The study's findings revealed that the utilization of graduated and contingent mediations from an implicit to explicit order can lead to a noteworthy improvement in students' grammar ability in L2 classrooms.

In light of the study's findings, some pedagogical implications for L2 teachers are presented. The teachers can save time by implementing the GDA procedure in the L2 classroom. The GDA is known for its time-saving nature due to its ability to assess multiple individuals simultaneously. Traditional assessment methods often require one-on-one interactions (Ebadi, 2014), which can be time-consuming, especially when assessing a large number of individuals. In contrast, GDA allows for the evaluation of multiple students in a group setting, which can significantly reduce the time required for assessment. This time-saving aspect makes GDA an

efficient and practical tool for evaluating individuals in various educational settings. Besides, as Vygotsky (1978) stated, teaching and assessment can be combined into one operation. According to Vygotsky, language teachers can replace the conventional teaching of grammar structures with the GDA procedure to motivate students in an engaging, cooperative atmosphere.

The current study has some limitations that might suggest future research directions. Since the participants of the present study were restricted to male high school students, future research may implement the GDA procedure with female students across various contexts such as public schools and higher education centers, to increase the generalizability of the study's findings. The limited number of students is the next limitation of the current study. To increase the generalizability of the study's findings, L2 teachers and researchers can implement GDA procedure with large smple sizes to gain deeper understanding regarding students' grammar ability. Besides, in the present study, the researchers focused on improving students' grammar ability through concurrent GDA procedure, while future research may focus on other skills and sub-skills. For instance, researchers may concentrate on the advancement of academic writing, such as lexical and rhetorical progression within each specific context through applying various regulatory scale (Aljaafreh & Lantolf, 1994; Davin & Donato, 2013; Poehner et al., 2015) to offer graduated and contingent mediation according to learner's ZPD.

References

Abbasi, A., & Fatemi, M. A. (2015). On the effect of dynamic assessment on Iranian pre-intermediate EFL learners' acquisition of English tenses. *International Journal of Language Learning and Applied Linguistics World*, 8(4), 222–236.

Abdelaziz, H. A., & Al Zehmi, O. (2021). E-cognitive scaffolding: does it have an impact on the English grammar competencies of middle school underachieving students? *Open Learning: The Journal of Open, Distance and e-Learning*, 36(1), 5-28. https://doi.org/10. 1080/026805 13.2020.1774356.

Ableeva, R. (2010). *Dynamic assessment of listening comprehension in L2 French* [Unpublished doctoral dissertation]. The Pennsylvania State University.

Afshari, H., Amirian, Z., & Tavakoli, M. (2020). Applying group dynamic assessment procedures to support EFL writing development: Learner achievement, learners' and teachers' perceptions. *Journal of Writing Research*, 11(3). https://doi.org/10. 17239/jowr-2020. 11.03.02.

Alemi, M., Miri, M., & Mozafarnezhad, A. (2019). Investigating the effects of online concurrent group dynamic assessment on enhancing grammatical accuracy EFL learners. *International Journal of Language Testing*, 9(2), 29–43. https://www.ijlt.ir/article_1 14279.html.

Aljaafreh, A., & Lantolf, J. P. (1994). Negative feedback as regulation and second language learning in the zone of proximal development. *The Modern Language Journal*, 78(4), 465–483. https://doi. org/10.1111/j.1540-4781.1994. tb02064 .x.

Anton, M. (2003, March). *Dynamic assessment of advanced foreign language learners* [Paper presentation]. The American Association of applied linguistics, Washington, D.C.

Ary, D., Jacobs, L. C., Irvine, C. K. S., & Walker, D. (2018). *Introduction to research in education*. Cengage Learning.

Ashtarian, S., Ebadi, S., & Yousofi, N. (2018). Group Dynamic Assessment in an EFL Classroom: Do Secondary Interactants Benefit? *Iranian Journal of Applied Linguistics (IJAL)*, 21(2), 1-42. http://ijal.khu.ac.ir/article-1-2934-en.html.

Bachman, L., & Palmer, A. (2010). *Language assessment in practice*. Oxford University Press.

Bahramlou, K., & Esmaeili, A. (2019). The effects of vocabulary enhancement exercises and group dynamic assessment on word learning through lexical inferencing. *Journal of Psycholinguistic Research*, 48(4), 889-901. https://doi.org/10.1007/s10936-019-09638-x.

Bakhoda, I., & Shabani, K. (2017). Enhancing L2 learners' ZPD modification through computerized-group dynamic assessment of reading comprehension. *Innovation in Language Learning and Teaching*, 13(1), 31-44. https://doi.org/10.1080/17501229.20 17.1286350.

Beaumont, C., O'Doherty, M., & Shannon, L. (2011). Reconceptualising assessment feedback: a key to improving student learning? *Studies in Higher Education*, 36(6), 671–687. https://doi.org/10.1080/03075071003731135.

Brown, A., & Ferrara, R. A. (1985). Diagnosing zones of proximal development. In J. V. Wertsch (Ed.), *Culture, communication, and cognition: Vygotskian perspectives* (pp. 273–305). Cambridge University Press.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five traditions* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative approaches to research* (3rd ed.). Upper Saddle River, NJ: Merrill/Pearson Education.

Davin, K. J. (2011). *Group dynamic assessment in an early foreign language learning program: Tracking movement through the zone of proximal development* (unpublished doctoral dissertation). University of Pittsburgh.

Davin, K. J. (2013). Integration of dynamic assessment and instructional conversations to promote development and improve assessment in the language classroom. *Language Teaching Research*, 17(3), 303-323. https://doi.org/10.1177/1362168813 482934.

Davin, K.J., & Donato, R. (2013). Student collaboration and teacher-directed classroom dynamic assessment: A complementary pairing. *Foreign Language Annals*, 46(1), 5-22. https://doi.org/10.1 111/flan.12012.

De Guerrero, M. C. M., & Villamil, O. S. (2000). Activating the ZPD: Mutual scaffolding in L2 peer revision. *The Modern Language Journal*, 84(1), 51–68. https://doi.org/10.1111/0026-7902.00052.

Dornyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.

Ebadi, S. (2014). L2 private speech in online dynamic assessment: A sociocultural perspective. Iranian *Journal of Applied Linguistics*, 17(1), 49-70.

Ebadi, S., & Rahimi, M. (2019). Mediating EFL learners' academic writing skills in online dynamic assessment using Google Docs. Computer Assisted *Language Learning*, 32(5-6), 527-555. https://doi.org/10.1080/09588221.2018.1527362.

Estaji, M., & Ameri, A. F. (2020). Dynamic assessment and its impact on pre-intermediate and high-intermediate EFL learners' grammar achievement. *Cogent Education*, 7(1), 1740040. https://doi.org/10. 1080/2331186X.2020.1740040.

Feuerstein, R., Rand, Y., & Rynders, J. E. (1988). *Don't Accept Me as I Am. Helping Retarded Performers Excel*. Plenum

Ghahderijani, B. H., Namaziandost, E., Tavakoli, M., Kumar, T., & Magizov, R. (2021). The comparative effect of group dynamic assessment (GDA) and computerized dynamic assessment (C-DA) on Iranian upper-intermediate EFL learners' speaking complexity, accuracy, and fluency (CAF). *Language Testing in Asia*, 11(1), 1-20. https://doi.org/10 .1186/s40468-021-00144-3.

Haney, M., & Evans, J. (1999). National survey of school psychologists regarding use of dynamic assessment and other nontraditional assessment techniques. *Psychology in the Schools*, 36(4), 295-304. https://doi.org/10.1002/(SICI)15206807(1999 07)36:4%3C295::AIDPITS 3%3E3.0.CO;2-G.

Kamali, M., Abbasi, M., & Sadighi, F. (2018). The effect of dynamic assessment on L2 grammar acquisition by Iranian EFL learners. *International Journal of Education and Literacy Studies*, 6(1), 72-78. https://doi.org/10.7575/aiac.ijels.v.6n.1p. 72.

Kao, Y. T. (2020). A Comparison Study of Dynamic Assessment and Nondynamic Assessment on EFL Chinese Learners' Speaking Performance: Transfer of Learning. *English Teaching & Learning*, 44(3), 255-275. https://doi.org/10.1007/s42321-019-00042-1.

Khatib, F., & Chalak, A. (2022). Utilizing scaffolding strategies to improve Iranian intermediate EFL students' grammatical knowledge. *Journal of Foreign Language Teaching and Translation Studies*, 7(1), 61-80. https://doi.org/10.22034/efl. 2022.326326.1144.

Khodi, A., Alavi, S. M., & Karami, H. (2021). Test review of Iranian university entrance exam: English Konkur examination. *Language Testing in Asia*, 11(1), 1-10. https://doi.org/10.1 186/s40468-021-00125-6.

Kozulin, A., & Garb, E. (2002). Dynamic assessment of EFL text comprehension. *School Psychology International*, 23(1), 112-127. https://doi.org/10. 1177%2F0143034302023001733.

Lantolf, J. P. (2000). *Sociocultural theory and second language learning*. Oxford university press.

Lantolf, J. P., & Poehner, M. E. (2010). Dynamic assessment in the classroom: Vygotskian praxis for second language development. *Language Teaching Research*, 15(1), 11–33. https://doi.org/10.1177/1362168810383328.

Lantolf, J. P., & Poehner, M. E. (2011). Dynamic assessment in the classroom: Vygotskian praxis for second language development. *Language Teaching Research*, 15(1), 11–33. https://doi.org/10.1177/1362168810383328.

Mackey, A., & Gass, S. M. (2016). *Second language research: Methodology and design*. Routledge.

Majdedin, M., Nabizadeh, A., & Taghinejad, A. (2015). Investigating learners' grammatical English relative pronouns through the interactionist model of dynamic assessment based on a sandwich format. *International Journal of Language Learning and Applied Linguistics World*, 9(1), 57–66.

Malmeer, E., & Zoghi, M. (2014). Dynamic assessment of grammar with different age groups. *Theory and Practice in Language Studies*, 4(8), 1707–1713. https://doi.org/10.4304/ tpls.4.8.1707-1713.

Mehri, E., & Amerian, M. (2015). Group dynamic assessment (G-DA): The case for the development of control over the past tense. *International Journal of Applied Linguistics and English Literature*, 4(5), 11-20.

Mohammadi Moghadam, M. (2015). Effects of mediation on an EFL learner's grammar development: A case study of an EFL beginner student. *Procedia - Social and Behavioral Sciences*, 192, 101–106. https://doi.org/10.1016/j.sbspro.2015.06.015.

Petrovsky, A. V. (1985). *Studies in psychology. The collective and the individual*. Moscow: Progress.

Pileh Roud, L. F., & Hidri, S. (2021). Toward a sociocultural approach to computerized dynamic assessment of the TOEFL iBT listening comprehension test. *Education and Information Technologies*, 26(4), 4943-4968. https://doi.org/10.1007/s10639-021-10498-z.

Poehner, M. E. (2007). Beyond the test: L2 dynamic assessment and the transcendence of mediated learning. *The Modern Language Journal*, 91(3), 323–340. https://doi.org/10.1111/j.1540-4781.2007.00583.x.

Poehner, M. E. (2008). *Dynamic assessment: a Vygotskian approach to understanding and promoting second language development*. Berlin: Springer; https://doi.org/10.1007/978-0-387-75775-9.

Poehner, M. E., & Lantolf, J. P. (2013). Bringing the ZPD into the equation: Capturing L2 development during computerized dynamic assessment (C-DA). *Language Teaching Research*, 17, 323–342. https://doi.org/10.1177/1362168813482935.

Poehner, M. E., Zhang, J., & Lu, X. (2015). Computerized dynamic assessment (C-DA): Diagnosing L2 development according to learner responsiveness to mediation. *Language Testing*, *32(3)*, 1–21. https://doi.org/10.1177/0265532214560390.

Poehner, M.E. (2009). Group dynamic assessment: Mediation for the L2 classroom. *TESOL Quarterly*, 43(3), 471-491. https://doi.org/ 10.1002/j.1545-7249.2009.tb00245.x.

Purpura, J. E. (2004). *Assessing grammar* (Vol. 8). Cambridge University Press.

Randall, T. S., & Urbanski, K. (2023). Development of a Computerized Dynamic Assessment Program for Second Language Grammar Instruction and Assessment. *Language and Sociocultural Theory*, 10(1), 50-81. https://doi.org/10.1558/lst. 21006.

Rassaei, E. (2021). Implementing mobile-mediated dynamic assessment for teaching request forms to EFL learners. *Computer Assisted Language Learning*, 1-31 https://doi.org/10.1080/09 588221. 2021.1912105.

Razavipour, K., & Rezaee, A. (2017). Group dynamic assessment of EFL learners' grammar: A microgenetic development approach. *The Iranian EFL Journal, 13(2), 6-2.*

Riazi, A. M. (2016). *The Routledge encyclopedia of research methods in applied linguistics*. Routledge.

Sharafi, M., & Sardareh, S. A. (2016). The effect of dynamic assessment on elementary EFL students' L2 grammar *learning. Journal of Applied Linguistics and Language Research,* 3(3), 102–120.

Sohrabi, S., & Ahmadi Safa, M. (2020). Group dynamic assessment and EFL learners' oral production, motivation, and classroom anxiety. *English Teaching & Learning, 44(4), 353-376.* https://doi.org/10.1007/s42321-020-00054-2.

Tabatabaee, M., Alidoust, M., & Sarkeshikian, A. H. (2018). The effect of interventionist and cumulative group dynamic assessments on EFL learners' writing accuracy. *Applied Linguistics Research Journal*, 2(1), 1-13.

Van der Veen, C., Dobber, M., & van Oers, B. (2016). Implementing dynamic assessment of vocabulary development as a trialogical learning process: A practice of teacher support in primary education schools. *Language Assessment Quarterly*, 13(4), 329-340. https://doi.org/10.1080/15 434303.2016.1235577.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, M A: Cambridge University Press.

Wagoner, B. (2009). The experimental methodology of constructive microgenesis. In: J. Valsiner, P. Molenaar, N. Chaudhary, & M. Lyra (Eds.), *Handbook of dynamic process methodology in the social and developmental sciences* (pp. 99–121). Springer.

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