The Impact of Online Dynamic Assessment on the Development of EFL Students' Speaking Skills: A Comparison of Online Synchronous and Asynchronous DA Sessions

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Abstract

The current paper examined the impact of Dynamic Assessment (DA) on the speaking skills of EFL learners applying socio-cultural theory, which was developed by Vygotsky (1934). The study also tried to compare the results from online synchronous DA sessions, which were done in the form of one-to-one online training over Google Meet, with the results from asynchronous DA sessions, in which the trainer and the trainees were interacting over G-mail. To this end, 90 EFL institutional students from Iran, who were getting ready to take the IELTS test, were selected as the participants of the program. The cases were then divided into two experimental groups and one control group, each with 30 contributors. IELTS speaking tasks, marked by IELTS speaking band descriptors, were used to assess their speaking skills. Comparing the pre-test and post-test, the findings indicated development in all four areas of

fluency, vocabulary, grammar, and pronunciation. Moreover, comparing the results from the two experimental groups showed that the participants who received asynchronous DA sessions outperformed the other experimental group. It is worth mentioning that a broader level of development was observed in experimental groups than the control group, in which the members received synchronous non-Dynamic Assessment (non-DA) methods.

Keywords: Dynamic Assessment. Non-Dynamic Assessment, Zone of Proximal Development, Mediation, Interventionist DA, Interactionist DA

1. Introduction

The remarkable progress in the adoption of technological developments in education has opened alternative paths in adopting distant educational technologies, including wide-area networks (Christensen, 2002; Baytak, Tarma, & Ayas, 2011; Tondeur et al., 2012; Cook & Grant-Davis, 2020). Rapidly after the internet became accessible to a comprehensive range of societies, conventional teaching methods were transformed into modern, online, internet-mediated approaches to teaching (Bernard et al., 2009).

Although technology-based education has been largely applied by language learning communities and institutions all over the globe, its usage in language assessment, especially DA, has not been studied broadly. Abrams (2003), for instance, studied how synchronous and asynchronous CMC (Computer-Mediated Communication) can affect learners' oral improvements. The variables of her study included: "The number of idea units and words, the lexical richness and diversity, and the syntactic complexity of learner language." She found no significant differences amongst the groups under study; however, she did not include DA in her treatment period. The internet can provide significant opportunities for applying DA, an interactive alternative for traditional assessment, in language education. DA aims at collecting data and performing assessments based on learners' former knowledge and their improving capabilities. Accordingly, it is considered to be a useful method to better improve trainees' language learning skills (Naeini & Duvall, 2012; Ebadi & Bashiri, 2020; Qin & van Compernolle, 2021).

While there is sufficient support that shows the efficiency of DA on language learning development and a considerable number of research activities have been revolving around the impacts of technology and online teaching on students' learning performances, amongst which several works have applied DA in their training sessions (Poehner, 2009; Poehner, Zhang, & Lu, 2015; Poehner, van Compernolle, Esteve, & Lantolf, 2019; Fuchs, 2017; Vakili & Ebadi,

2019; Ebadi & Rahimi 2019, Xue & Churchill, 2020), only a few studies have inclined their focus on oral developments of students applying DA through technology-based methods. Darhower (2014), for instance, indicated that DA "illuminates the Zone of Proximal Development of the participants, characterizing not only their current level of independent functioning but also their potential when provided with mediation." However, he only focused on learners' past narration capability through synchronous mediation and did not include asynchronous mediation effects. Another study, conducted by Rezaee, Alavi, & Razzaghifard (2019), revealed the effectiveness of DA on the oral fluency of the participants through Mobile-based Dynamic Assessment (MbDA). Nevertheless, they compared the results from the mediation via text-chat with the mediation via voice-chat context.

To bridge the remaining gaps, the present study examined the impact of online synchronous and asynchronous DA sessions during a short time period through an interventionist view with a particular insight on (1) how online learning can be useful in developing students' speaking abilities, (2) how different the improvements in experimental groups and control group are and (3) how asynchronous and synchronous modern DA sessions affect the trainees' pace.

2. Review of Literature

2.1. Technology in second language acquisition

In recent decades the effectiveness of technological education in improving students' and, more specifically, language learners' learning speed and quality has been the center of attention in a large number of studies (Schmid et al., 2014; Cheung & Slavin, 2012; Golonka, Bowles, Frank, Richardson, & Freynik, 2014; Lee, Kuo, Xu, & Hu, 2020). In this regard, a wide array of studies has been done on different aspects of technological education, such as computer-assisted language learning (CALL) (Chapelle, 2009; Bahari, 2020; Wang & Liao, 2017; Tafazoli, María, & Abril, 2019), Mobile-based Language Learning (MLL) (Rezaee et al. 2019; Şad, Öz er, Yakar, & Öztürk, 2020; Xue & Churchill, 2020).

2.2. Dynamic Assessment

According to Bailey (1996), **"**assessment is benignly described as an information-gathering activity" (Poehner, 2008, p. 3). As McNamara (2004) puts forward, it is applied to provide teachers and researchers valuable insights on how knowledgeable and capable the

learners are (Poehner, 2008). This can enlighten the reason behind the importance of evaluation in learning to a large extent.

"DA is an approach to assessment and instruction derived from Vygotsky's Socio-cultural Theory (SCT) and the Zone of Proximal Development (ZPD)" (Poehner & Lantlof, 2005). According to Vygotsky, ZPD is defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978 p. 86).

DA suggests "a qualitatively different way of thinking" about assessment from its conventional use. Based on Vygotsky's research on cognitive development, it was revealed that the cognitive process is not dealing with "innate abilities" but concerning the modern ways of thinking and acting. In other words, it happens when learning abilities are mediated through one's engagement in activities where the individual is exposed to cultural symbols and interacts with others (Poehner, 2008, p. 1). According to Lantolf and Thorne (2001), this is an approach in which appropriate forms of mediation are introduced by a mediator, such as a teacher, as a more knowledgeable individual to a less knowledgeable one, such as a student, which has difficulties in completing an assignment in order to promote their development.

DA argues that teaching and assessment should be thoroughly integrated and happen alongside each other during learning sessions. This is possibly achieved when mediation is inserted in the evaluation procedure to find out the students' points of strength and disabilities so that the mediator can assist them to function better (Poehner, 2008). Poehner and Lantolf (2010) consider mediation as the key concept of DA and argue that this is what makes DA distinguishable from conventional ways of assessment. DA provides hints and feedback to the students to assist them in developing their cognitive capabilities during the assessment.

In these types of studies conducted on Vygotsky's micro-genetic development, synchronous collaboration between trainees, as being more capable, and the trainees, as being less able are the key points of focus. At this point, online technological education is regarded as a cultural tool that works as an alternative social environment that facilitates the process of transformation from inferior mental functions to more prominent cultural ones (Vygotsky, 1978).

Assessment is not an isolated activity that is merely linked to intervention. Assessment, instruction, and remediation can be based on the same universal explanatory conceptualization of a child's development (typical or atypical) and within this model are therefore inseparable. (Lidz &Gindis, 2003, as mentioned in Poehner 2008, p. 14)

According to Lantolf and Frawley (1988) in their criticism of the Oral Proficiency Interview (OPI), proficiency is not a result of an individual's work in isolation but a consequence of their interaction with others (Poehner, 2008). Later Swain (2001) empirically supports this argument through a study that was done on dialogic interaction developed between examinees and examiners. She points out that "the linguistic features of an examiner's behavior during a proficiency interview can differentially support or handicap a test candidate's performance" (Poehner, 2008, p. 9).

As reported by Brown (2003), using diverse examiners in an oral proficiency test session, different interpretations of the examinees' level of competency were observed, which, according to her, is attributed to various ways of structuring the speaking examination, the method of questioning, and giving feedback by the assessors (Poehner, 2008).

Identical results had been reported by McNamara (1997), supporting the fact that the assessors should not assume that proficiency is an individual cognitive activity in isolation. He continues that assistance can provide them with valuable insights in order to develop their potential abilities (Poehner, 2008). According to Zohdijala and Mohammadi (2021), "Learning takes place in a social system in the light of the tenets of social constructivist learning theory."

2. 3. Interventionist and Interactionist DA

Lantolf and Poehner (2004) distinguish between two types of mediation, interactionist, and interventionist. The former is based on "cooperative dialoging," in which assistance arises from the interaction which is formed between the mediator, the assessor or the teacher, and is greatly sensitive to the learner's ZPD. *Interactionist* DA focuses on the progress of a learner or a group of them, irrespective of the amount of effort needed and without concern about pre-specified endpoints.

Interventionist DA, however, is closer to static assessment. It makes use of standardized "administration procedures and forms of assistance" to achieve results that are easily quantifiable. Unlike *Interactionist* DA, here, the focus is on the quantity of assistance a learner requires to achieve a pre-determined endpoint rapidly and with high efficiency (Lantolf & Poehner, 2004).

2.4. Mediated Learning Experience

According to Feuerstein's theory of Structural Cognitive Modifiability (SCM), "it is possible to intervene in the development of human cognitive abilities," based on which human

beings are "open" rather than "closed systems," i.e., unlike individuals' pure, genetically determined potentials (e.g., hair color) they can go through a process of progression in "the presence of appropriate forms of interaction and instruction" (Poehner, 2008, p. 53). For Feuerstein, "the psychological functioning of individuals living in a rapidly changing, technological, modern society can hardly be characterized by stable and predictable patterns; on the contrary, "modifiability" and "autoplasticity" are more important than ever" (Feuerstein et al., 1988).

As Kouzulin (1988, p. 60) puts forward, mediation is a key principle of SCM. Unlike direct, non-mediated learning, where there is an experimental, trial-and-error interaction between the learners and the environment, the stimulus-response model is changed in mediated learning so that there is no direct interaction between the trainees and their surroundings. Here, a more capable person, a teacher, enters the training process and tries to help improve the students based on the assessment of their application of language (Poehner, 2008).

The more a child is subjected to mediated learning experiences, the greater will be his capacity to benefit from direct exposure to learning. On the other hand, a lack of Mediated Learning Experience (MLE) will produce an individual who will benefit very little from direct encounters with learning tasks. (Feuerstein et al., 1988, p. 58)

As Vygotsky (1978) suggested, the mediator in MLE simplifies the learner's "internalization" of their "interaction" that results in transferring it from an "*intermental"* functioning to an "*intramental"* functioning. In other words, the interaction happening between the mediator and the students performs as a model for them to imitate and encourages them to act beyond their capabilities. Lee (2011) argues that "through socio-cultural lens, learners are considered to be actively engaged in learning process by mediating themselves to other people and other learning tools" (Hapsari & Ratu, 2019).

Referring to Feuerstein, Poehner (2008, p. 56) sees MLE as the fundamental part of DA in an *intensive,* mediated DA session. The evaluator or mediator provides the learners with as diverse forms of mediation and feedback as probable and tries to track their responsiveness to the mediation therefore he or she can cause changes in their current capabilities. To put it another way, the prime aim of a mediator is to detect the trainees' capability for creating "cognitive changes." Accomplishment in this important can happen by aiding the students to improve themselves during each assessment process.

2.5. Dynamic Assessment versus Non-Dynamic Assessment Sessions

According to what Sternberg and Grigorenko (2002) reported, the key differences that distinguish DA from non-DA approaches to assessment are as follows:

1. While the focus in non-DA sessions is on the former matured capabilities of the learners, the focal point in DA is the students' forthcoming abilities by trying to detect and develop their current, potential capacities.

2. The second dissimilarity lies in the performance of the examiners. While in a non-DA program, the assessors attempt to stay neutral in order not to make an impact on the testing condition. They intervene in the process, trying to integrate their teaching methods with assessment techniques during a DA assessment period.

3. What distinguishes DA from non-DA sessions is that DA provides the learners with qualitative feedback at the end of the session (Flucher & Davidson, 2013).

2.6. Online Dynamic Assessment

It is assumed that digital educational tools offer sufficient and appropriate time and space to language trainers and trainees for working on their tasks (Ebadi & Rahimi, 2019). Ocker and Yaverbaum (1999) conducted a study on the effectiveness of asynchronous CM teaching and learning in education and pointed out that "asynchronous collaboration is as effective as face-to-face collaboration." Other researchers confirmed its effectiveness in language learners' improvements as it lets them do the tasks at their own pace (Elola & Oskoz, 2010; Gorjian, Moosavinia, Ebrahimi Kavari, Asgari, & Hydarei, 2011). On the other hand, several researchers have inclined their attention towards technology-based synchronous communication and confirmed its effectiveness in teaching and learning (Yamada, 2009; Hung & Higgins, 2016).

So far, several recognized experiments have been done concerning online DA. Oskoz (2005) investigated the efficiency of DA through online chat. According to the results presented, despite the advancements achieved through applying DA, "traditional modes of assessment" are still essential. In another study, Tzuriel and Shamir (2002) compared the effects of DA in two treatment groups of young children, where one group was assigned Computer-Assisted mediation and another one was assigned examiner-only mediation. According to the final results of their study, the first group outperformed the second one and achieved considerable cognitive changes. Moreover, Vakili and Ebadi (2019) developed a study based on learners' perspectives, studying the authenticity of online DA. Their work sheds light on the fact that this type of mediation is "inclusive enough to address authenticity in foreign language learning."

Shafiee Rad (2021) explored the impact of Mobile-mediated Hybrid DA in language learners' writing skills. To implement the procedure, students in the experimental group, including 15 participants, participated in a daily conversation speaking through an application called Edmodo, where they were provided with negative feedback by the instructor. The results of their work revealed that such a method provided the learners with the opportunity to better save their time and therefore enabled them to participate more in teacher-learner interactions.

2.7. Aim of the study, research questions and hypotheses

A few studies have looked at DA technologically, although many studies have revealed its practicality and usefulness in assessing the language proficiency of language learners (Poehner, 2005; Anton, 2009). So far, most DA-related works have been about the improvement of writing skills, and only a few studies have been focusing on its use in improving learners' speaking skills over technological platforms (Alirezaee, 2019; Vakili & Ebadi, 2019). Furthermore, as far as the researchers are concerned, no studies have been documented reviewing the effectiveness of online synchronous and asynchronous DA sessions on the speaking skills of the learners, comparing the results derived from the two approaches. Accordingly, the chief aim of the present work is to examine the impact of the so-called online learning techniques and discover if they affect the development of the learners' speaking skills positively. More specifically, it aims at comparing the impacts from the synchronous with the asynchronous approach in the context of Iranian institutions.

To this end, the subsequent research questions were addressed:

1. Do online synchronous DA sessions have any positive impact on the speaking skills of English learners, specifically IELTS candidates?

2. Do online asynchronous DA sessions have any positive impact on the speaking skills of English learners, specifically IELTS candidates?

3. Is there any statistically significant difference between the impact of online synchronous DA sessions and the impact of online asynchronous DA sessions?

The related hypotheses to the above-stated research questions are as follows:

1. Online synchronous DA sessions will have a positive impact on the speaking skills of the participants.

2. Online asynchronous DA sessions will have a positive impact on the speaking skills of the participants.

3. The effectiveness of asynchronous DA sessions will outweigh the effectiveness of synchronous DA sessions.

3. Methodology

3.1. Participants

In the current research activity, 90 intermediate (CEFR= B1, IELTS= 4.0-5.0) Iranian students of English as a Foreign Language (EFL), whose first language was Farsi and were attempting to take part in the IELTS test in seven various branches of a language institute, were selected as the participants of the study. The authors selected the contributors amongst 115 present male and female learners, whose age range was between 18 to 30, according to their level of proficiency in English and their willingness to contribute. It is worth mentioning that all selected participants had been studying the "American English File" book series. They had finished book three in the same institute before taking part in the IELTS courses.

To determine the students' level of language proficiency, the authors conducted the Oxford Placement Test (OPT) (Allan, 2004). After one week, the participants took part in an IELTS speaking examination as the pre-test. Three EFL teachers who had completed their MA degrees in the field of Teaching English as a Foreign Language (TEFL) and had been working as IELTS trainers for at least seven years took part in the study as examiners. They were chosen based on their academic and working background and their willingness to join the study. The tests were taken under the direct provision of the authors. The students were then randomly divided into two experimental groups and one control group. The first experimental group (group1) received synchronous online DA sessions over Google Meet, while the second experimental group (group 2) received asynchronous online DA sessions using G-mail; each group contained 30 participants. On the other hand, the treatment for the control group (group3) took place in a conventional, non-DA style.

3.2. Instruments

To achieve the aims of the study, the following instruments were employed:

3.2.1. The Oxford Placement Test

In order to find the intermediate students amongst all available cases, primarily OPT exam was employed. OPT was administered because it is standard, and therefore the results derived from the test are highly reliable and valid. It consists of two listening and grammar parts. Both the listening and use of English sections include 100 items, each with two possible choices.

They are equally scored and combined to give an overall score out of 120. Each band of 20 refers to a CEFR level. In this study those students whose grade threshold was between 41 to 60, which corresponds to B1 in CEFR level, were considered as target participants to go through the process.

3.2.2. Pre-test

Those students whose results in the OPT test corresponded to B1 in CEFR levels, 90 participants, were then asked to accomplish a complete IELTS speaking examination. The writers tried to choose among the speaking topics that were more or less similar, to make sure all the students are in parallel exam conditions. To make certain the results from the speaking test are consistent, inter-rater reliability (Pearson's correlation coefficient=0.84) and test-retest reliability (Pearson's Correlation Coefficient=0.86) were administered. Figure 1 shows the test-retest reliability of the pre-test.

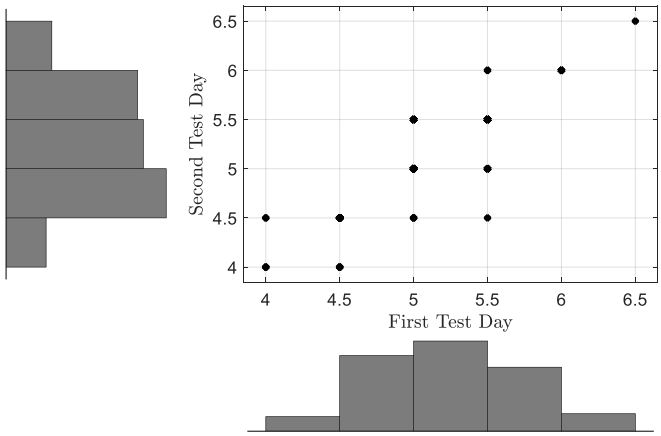

Figure 1 Test-retest reliability of the pretest

3.2.3. Post-test

The last instrument is a speaking post-test, including a complete IELTS speaking test, for which the authors tried to choose a test parallel to the pre-test. Inter-rater reliability (Pearson's correlation coefficient=0.83) was administered to ensure the consistency of the results.

3.2.4. Google Meet

Google Meet was selected for performing the online synchronous DA sessions because it was free, easy to use, and available to everyone wherever in the world they are. It allows you

to arrange online meetings and send text messages synchronously, individually, or in groups. In this study, one-to-one online sessions were used. A related video was provided and sent to them to make sure that all the participants from the synchronous DA group knew how to use Google Meet.

3.2.5. G-mail

For organizing the online asynchronous DA sessions, G-mail was used because it was free, easy to use, and available to everyone wherever in the world they are. Also, it is very convenient for sending and receiving files without having a specific, modern technology. Before starting the program, researchers made sure that everyone had a G-mail account.

3.3. Materials and tasks

IELTS academic speaking tasks one, two, and three were administered in all sessions. All the classes were run by an EFL teacher, the first author, with more than seven years of experience both in EFL and IELTS preparation classes. She had completed her MA in English translation, passed several TEFL courses, and taken part in several Teacher Training Courses (TTC). Moreover, she used to be an educational supervisor for more than two years in the English institute from which the participants were chosen. She has good working experience in observing EFL and IELTS classes, holding teacher training sessions, and recruiting new trainers.

During the program, the participants of group 1 went under an eight-week period of treatment, two sessions a week, receiving synchronous DA sessions in one-to-one sessions over Google Meet. The teacher tried to provide the students with useful verbal and written feedback on their weaknesses from time to time during each assessment session.

On the other hand, the participants of group 2 received their assessment tests on G-mail based on a pre-determined schedule over the same period. They were obliged to send their answers in voice. The related mediation was sent back to them in voice and text format by the mediator.

Group 3 took part in a non-DA, conventional class during the same period. The classes were group-based, and during the class, there was no interaction between the teacher and the learners until the end of the session. Only when the assessment was over, the mediator provided the students with some tips to help improve their speaking skills.

3.4. Procedure

An OPT was administered two weeks prior to the start of the program. Next, the pre-test was conducted. Right after analyzing the results and dividing the contributors into two experimental, synchronous and asynchronous, and a control group, a brief video containing the instructions to create and operate Google Meet and G-mail was sent to the participants of the experimental groups. Exactly a week later, to ensure they were homogenous, another similar test was administered.

The total treatment time took four weeks. The learners from group 1 started their online individual DA sessions on Google Meet based on a scheduled timetable for each participant, receiving synchronous oral and written mediation from the teacher during each session, 40 minutes for each learner. The participants of group 2 accomplished their asynchronous DA sessions during the same period but in a different environment, i.e., G-mail. In the second group, the learners were required to receive IELTS speaking tasks from the mediator based on a pre-scheduled time. Then, the students were required to send their voices before pre-determined deadlines. Just after receiving the voices, the mediator started assessing them and sending the related written and oral feedback to the learners.

3.5. Statistical analysis

To analyze the gathered numerical data, two varieties of statistical processes were implemented. First, descriptive statistics were performed for the data from the pre-test and post-test for each one of the three groups. Subsequently, a one-way ANOVA was used to explore the existence of any statistically significant difference in the participants' performance. The differences were considered significant when $p < .05$.

4. Results

4.1. The results of the pre-test

Table 1 indicates the descriptive statistics of the results from the first pre-test for all three groups of participants. As it is clear from Table 1, the mean scores on the speaking test are reasonably parallel. It is (M=5.03) for the synchronous online DA group, (M=5.06) for the asynchronous online DA group, and (M=4.88) for the last group, the control group.

A one-way ANOVA was implemented to make sure there was not a significant difference between the scores. The results from one-way ANOVA, displayed in Table 2, showed that

there was not a statistically meaningful difference among the means of the scores for the three groups (f=1.05, p=0.192) at.05 level.

In total, the outcomes of the analyses revealed that there was not a significant difference between the three groups in terms of speaking scores. Accordingly, before starting the sessions, the researchers made sure that the groups were equivalent regarding their members' speaking skills.

Table 1: *Descriptive Statistics for the Pre-test*

	Group1		Group2		Group3	
	Mean	SD	Mean	SD	Mean	SD
Speaking Scores	5.03	0.39	5.06	0.61	4.88	0.53

Table 2: *One-Way ANOVA for comparing the pre-test scores of the three groups*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.5722	2	0.28611	1.05	.3538
Within Groups	23.675	87	0.27213		
Total	24.2472	89			

4.2. The results of the post-test

Descriptive statistics on the scores of the three groups in the post-test are presented in Table 3. According to Table 3, both experimental groups (M1=5.5, M2=5.93), which received DA during their treatment, outperformed the control group (M3=5.01), which did not get DA, in their post-test speaking scores. The results of the post-test also revealed that group 2 (M=5.93/ IELTS 6), whose members were given their course asynchronously over G-mail, performed better than group 3 (Mean=5.5), whose participants received their treatment synchronously over Google Meet. To make sure the consequences of the improvement program were statistically significant in the three groups, a one-way ANOVA was applied. Table 4 shows the corresponding results. The one-way ANOVA proves that there is a significant difference among the speaking scores of the three groups. To be precise, the F-value (F =16.09, p =.000 (approximately)) appeared to be statistically meaningful.

Table 3: *Descriptive Statistics for the Post-test*

	Group1		Group2		Group3	
	Mean	SD	Mean	SD	Mean	SD
Speaking Scores	5.5000	0.4913	5.93	0.7849	5.0167	0.5645

Table 4: One-Way ANOVA for comparing the post-test scores of the three groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.6167	2	6.30833	16.09	1.1325e-06
Within Groups	34.1083	87	0.39205		
Total	46.725	89			

5. Discussion

Quantitatively grounded in the results of the current study, it can be derived that online DA has a positive impact on speaking development of EFL learners and, more specifically, IELTS candidates. This study aimed at investigating the impact of online synchronous and online asynchronous DA treatments on EFL learners' oral proficiency. The findings of the current study showed that the experimental group that received asynchronous DA treatment via G-mail outperformed the other experimental group that received synchronous DA sessions over Google Meet. It can be concluded that the learners can perform even better when they get their treatments asynchronously. Moreover, the study indicated that both experimental groups improved their oral proficiency more significantly compared to the control group who received non-DA, traditional treatment.

The outcomes of this work were aligned with the results of the previous studies on the following facts: first, DA sessions in total can improve learning abilities in EFL students because of the interactive nature of DA, the mediator has enough chances to distinguish the students' language difficulties and support them to improve the current problems and advance their learning in total (Anton, 2009; Poehner, 2009; Ghanbarpour, 2017; Huang & Renandya, 2020); second, technology-based, distant, DA sessions have a positive effect on the improvements of EFL learners (Yamada, 2009; Hung & Higgins, 2016; Vakili & Ebadi, 2019; Rezaee et al. 2019; Ebadi & Rahimi, 2019; Qin & Zhang, 2019). One potential reason for this

is that DA makes it possible for the learners and assessors to interact during the assessment process (Poehner, 2005).

Another probable explanation is that reaching learners' ZPD produces progressive impacts in improving the speaking abilities of language students. As Vygotsky (1978) suggests, in the presence of a two-way interaction, some functions can develop that have not been internalized in the students' minds. As these functions form the learners' ZPD, they should be in the mediator's center of focus. As Poehner (2005) puts forward, students obtain a type of mediation during a DA treatment that is sensitive to their ZPD when they are interacting with the assessor. According to this, the mediation received by the learner is cautiously adjusted to their needs, so different students get mediations that are particular to them. Also, the level of anxiety, which reduces significantly in distant education, particularly in an asynchronous interaction, can be very effective in the developments made by the students (Bashori et al., 2010). According to Ntividad and Batang (2018), "Learning styles and attitude play an important role in language teaching and learning process." The study was consistent with the results Abe (2019) reported on the effects of asynchronous language learning. Yet, unlike Ocker and Yaverbaum (1999), whose results resulted in the fact that asynchronous teaching and learning is as effective as synchronous, face-to-face learning, our results clearly indicated that the participants who received asynchronous treatment sessions outperformed those participants who received online, synchronous treatment.

The positive effects of online DA in this study can be better clarified by the fact that it forms a great opportunity for both trainees and trainers of languages. It provides the students with the opportunity to interact with the teacher during the learning. During online DA treatment sessions, the trainer plays an active role in the assessment based on the observations and inferences. This matches Vygotsky's SCT, which says that learning occurs during an interaction. This obviously reveals the social nature of learning, shedding light on the importance of learning collaboratively and interactively.

6. Implications of the Study

The findings of the current study suggest several implications: theoretical and pedagogical. Theoretically, this work contributed to the following fields: applying technology in SLA, online SLA, and DA. Pedagogically, the conclusions of this study can bring implications for SLA researchers, EFL teachers, curriculum designers in language institutes and organizations, and language learners.

The results of this study might help those language learners who need to improve their communicative skills more ubiquitously through internet-related technologies, as nowadays there is the possibility of ubiquitous access to the internet for everyone. It further allows EFL teachers to conduct online synchronous and asynchronous DA sessions as supplementary sessions to face-to-face, traditional DA sessions in order to both assess their trainees' learning process and help improve their communicative skills via mediation while targeting their cognitive abilities.

Moreover, due to the feasibility of access to the internet, learners are able to interact more with their trainers or their peers both synchronously and asynchronously. This can lead to more success in real-world communication. In other words, synchronous and asynchronous online teaching and learning enables teachers to manage their time more effectively, assess their students from time to time, and be in more contact more efficiently with them.

The last contribution of this study can be for IELTS candidates who are going to prepare themselves for a rather demanding exam during a rather short period of time. DA sessions that are communicative and interactive in nature and are involved with ongoing assessment sessions can help improve IELTS candidates or similar international testing systems more efficiently.

7. Conclusion

The current study examined the effect of synchronous and asynchronous online DA treatment on the improvement of EFL learners' speaking skills. The statistical analyses of the acquired statistics shed light on the fact that synchronous and asynchronous online DA sessions had a significant impact on improving the participants speaking abilities. Therefore, it can be argued that online DA can result in subjects' cognitive development. Given the SCT, the results of the current work support the fact that online DA, as a communicative assessment approach, can help prepare language trainees for practical communication. Moreover, it can be claimed that applying online technologies can improve embedded learning in the future as they are accessible to all, convenient to operate, low in cost, and time-saving.

The outcomes of the present study made available some proof that synchronous and asynchronous online DA sessions are effective in developing speaking skills of IELTS candidates. The findings also revealed that asynchronous online DA sessions proved to be more effective on students' oral skills than synchronous online DA sessions. The results of the study were further observed to support the fundamental concepts of DA. To put it another way, the current work sheds some light on the notion that creating a ZPD during DA training sessions can result in the development of language learners' speaking skills. Moreover, the present study

proves the idea that using the internet and online technologies results in language learning development.

7.1. Limitations and suggestions for further studies

Yet, there are several limitations to this study: first, the participants of the study were at the B1 level and as a result, the future researchers are recommended to conduct further studies on students from different levels of language proficiency; second, this study was performed regardless of participants' educational background and self-report proficiency; third, this study was performed in the context of English institutes, further studies are strongly recommended to be conducted in other contexts (e.g., with students from different institutes); fourth, the results of this study were concluded based on the scores of the pre-test and post-test, other studies can apply quantitative data from all treatment sessions based on a micro-genetic development process; fifth, IELTS speaking band descriptors were used to assess the students' proficiency, other standards can be applied; finally, the present study only reports on the general speaking proficiency, a more detailed assessment can be used.

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