Mobile-mediated Dynamic Assessment and EFL Learners' L2 Grammar Knowledge

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Abstract. In this study, a total of 78 EFL students were selected from a language centre. The volunteers were then divided into three equal groups at random (one control and two experimental). Following that, all members were provided with a grammar pre-test to track their progress during the lesson. WhatsApp was presented to mobile-mediated dynamic assessment (DA) group. DA was presented to the second experimental group in classroom (in-class DA). The control group was the third of the three groups. When students made a mistake, a scale of prompts was utilized to facilitate the learning experience, and

the researcher functioned as an intermediary in the students' process of learning, providing feedback as required. The findings revealed that mobile-mediated DA can help EFL pupils learn grammar more effectively. The findings of this study can lead to a better understanding of the pedagogical importance of mobile-mediated DA by providing more precise measurement of students' grammar knowledge, which could lead to better L2 outcomes.

1. Introduction

With the advent of modern mobile phones that motivate learners in a lively, authentic, and contextual setting, mobile-assisted language learning (MALL) is a relatively new field in computer-assisted language learning (CALL) (Kukulska-Hulme, 2009). Cellphones, small electronic dictionaries, iPod Touches, and tablet computers, according to advocates of MALL, offer second language (L2) students complete, efficient, and convenient learning opportunities that personal computers may not be able to give (Lantolf & Poehner, 2007).

Mobile Instant Messaging (MIM) applications have been utilized in a virtual world to allow a teacher to keep a record of his or her pupils' performance and offer constant feedback on the occasion of a linguistic error throughout dialogue (Lantolf & Poehner, 2007). The distinctive qualities of these apps, such as quick message delivery through a pop-up system, a contact list, or a method to indicate when individuals are available, make them ideal choices for adopting a dynamic assessment (henceforth, DA) method (Poehner et al., 2017).

According to Vygotsky (1978), zone of proximal development (henceforth, ZPD) is the difference between real developmental stage as assessed by autonomous problem-solving and prospective developmental stage as evaluated by problem-solving under adult supervision or in partnership with more experienced colleagues. A post-psychometric assessment technique called DA has emerged to recognize personality differences based on Vygotsky's (1978) sociocultural theory and ZPD (Lidz & Gindis, 2003). Therefore, if examiners are unable to respond to the relevant tasks separately, they are permitted to engage in the assessment

process through consultation (e.g., hints, prompts, gestures, etc.) inside the learners' ZPD.

In terms of research, using DA as an approach has usually focused on examining learners' gradual development, with different DA forms being utilized to achieve this aim (Andujar, 2020). Furthermore, the majority of studies on DA in L2 learning have focused on its pedagogical value as a formative evaluation tool (e.g., Lantolf & Poehner, 2011; Yang & Qian, 2019). This research, which includes MIM and DA, concentrates on the last kind of DA. Experts have suggested two different mediation techniques in DA (Barabadi et al., 2018; Lantolf & Poehner, 2007). The first is the interventionist technique, in which the intermediary or instructor issues a series of prompts or cautions to pupils, with the level of clarity gradually rising. This approach focuses on a particular aspect of language and lowers conversation to a series of exercises that pupils must perform. The second method is interactionist, under which the intermediary plays an important role in helping students' success by identifying difficulties and creating answers to any problems that occur throughout the encounter (Feuerstein et al., 2003). One of the key differences between these two techniques is the degree of freedom for the intermediary to react to pupils, with the interventionist being stricter in terms of materials and stimuli, predicting the sorts of issues learners may experience (Poehner & Lantolf, 2010). MALL with the use of the handheld mobile gadget - has also been used to assist and improve L2 learners' grammar (Jin, 2014). Proper planning and selection of appropriate applications are necessary for the purpose of enhancing learning. Despite the number of studies on MALL, there is already a testing gap relating to the use of MALL in grammar acquisition. Few experiments have looked at the effectiveness of MALL in grammar tenses and aspects as compared to speaking, listening and writing skills (Jin, 2014).

MALL provides an environment for fostering a community of equal possibility, where lecturers and learners may collaborate to improve outcomes. Moreover, because of the possibility for DA, utilizing smartphones to assess learners might be useful. Consequently, the goal of this study would be to see if employing mobile-mediated DA as a technique may help EFL students enhance their L2 grammatical competence. The

current study also aims to find out what prompts instructors utilize the most commonly while providing feedback via in-class and mobile-mediated DA.

2. Literature Review

2.1 Studies on the effect of MALL on EFL learners' grammar knowledge

There have been few reports on grammar teaching using Computer-Assisted Language Learning (CALL). McCarthy (1994) observed that, while CALL is a derivative type of conventional language teaching in many respects, it has seven distinct advantages: 1) content organization; 2) object display; 3) material volume and spontaneous presentation; 4) comments, scoring, and record-keeping; 5) targeted tutorial assistance; 6) graphics and animation; 7) cognitive direction.

Moreover, Nagata (1997) used two programs to assess students' use of the Japanese particle with 14 second-year college students, continuing his research into the consequences of computer-assisted metalinguistic teaching to teach grammatical structures. Software exercises with meta-linguistic feedback helped students understand complicated grammatical principles, according to the findings. Al-jarf (2005) investigated whether incorporating online learning into face-to-face in-class grammar teaching increases the achievement and attitudes of EFL freshman college students. The study included two classes of freshmen students. Pretest mean scores revealed substantial grammar knowledge gaps between the experimental and control classes. Comparisons of the posttest mean scores after the online training revealed substantial variations in achievement. The study found that using an online course from home as a complement to in-class strategies helps inspire and improve EFL students' learning and mastery of English grammar in learning environments where technology is inaccessible to EFL students and instructors.

Chen (2006) performed a quasi-experimental analysis to see if the computer-assisted instruction tutorial program influenced the beginning EFL language learners' grammar skills. Following the treatment, both the control and study groups were given a post-writing assessment. A one-way ANOVA on total error rates was used to compute data from

100 published essays that were subjected to error analysis. The most important result was that there was no statistically meaningful difference between the test and experimental groups when it came to average error rates.

The efficacy of using a CALL lesson over a traditional lesson to promote learning of English prepositions was investigated by Ngu and Rethinasamy (2006) in their research. Except for the medium in which the lesson was presented, both traditional and CALL lessons were matched with the same material. While a teacher taught the traditional lesson in a classroom, students were given computers to complete the CALL lesson in their own time. Students who got the traditional lesson outperformed those who received the CALL lesson, according to test reports. The traditional group even trained more quickly than the CALL group, according to the findings.

Mohamad (2019) conducted a study to compare two grammar instruction types, namely, internet-based grammar instruction and traditional pen-and-board instruction, in order to investigate the validity of the argument that language teachers now have at their disposal multiple learning websites with interactive content that can be claimed to provide some advantages over traditional classroom setting instruction. In Malaysia, he studied 50 college-aged students. The students who received internet-based grammar instruction outperformed those who received traditional pen and board instruction in the learning of certain grammatical objects, according to the findings. Students who received internet-based grammar training made fewer mistakes in their essays than those who received traditional pen and board instruction, according to the results. This study offered empirical evidence for the argument that the Internet is a valuable and efficient medium for grammar instruction.

Recently, Khodabandeh and Tahririan (2020) investigated the effect of MALL on EFL learners' English grammar learning. A pre-validated grammar test was administered to 90 junior high school students. Grammar was taught to both groups inductively and the participants were asked to do their assignments according to their group's tasks. Based on the post-test results, it was concluded that the experimental groups had

better results than the control group. The study supports the hypothesis that sharing tasks in virtual networks can have positive results for language learning, specifically grammar learning.

Kashanizadeh and Shahrokhi (2021) probed the impact of mobile applications on grammar learning. To this end, 50 Iranian female intermediate learners were recruited to participate in this study. They were assigned to two groups; control and experimental, including 25 learners in each group. To assess the learners' grammar knowledge before specific treatment, a pretest of grammar was administered. After the pretest, in each session of the treatment, the participants in the experimental group were taught grammar through Grammar Learning Application on their mobile phones, and in the control group, a conventional method was employed for teaching grammar. After 14 sessions, to discover the effect of treatment both groups participated in another grammar test as the posttest. The results showed that participants in the experimental group performed significantly better in the posttest, indicating the effectiveness of the mobile application on L2 grammar learning. According to the literature, there is a need for giving continuous feedback to learners, whether in a computerized or in-class version of DA, as mediation becomes a central aspect throughout the growth of this form of approach. This mediation is mainly done by the instructor or pupils, who are in charge of intervening in social interactions. Because of their intrinsic characteristics such as ubiquity and availability, MIM apps have become effective instruments for developing DA to help teachers reach a higher degree of mediation.

2.2 Studies on the effect of dynamic assessment on EFL learners' language learning

In most studies of DA in L2 instruction, researchers have examined students' ability in the target language that results from mediation processes. Interventionist approaches to DA, such as Kozulin and Garb (2002), have been widely used to evaluate students' progress. They assessed EFL text comprehension in a variety of pre-academic centers in Israel. Researchers managed to detect the impact of mediation on students' (n=23) text comprehension using a test-teach-test approach. After the mediation, this technique helped to detect gaps in students' po-

tential.

Thornton and Houser (2005) investigated the effect of MALL on EFL learners' vocabulary learning. The results revealed that learners who learned vocabulary by online e-mails on their cell phones enhanced their vocabulary learning significantly more than their classmates who learned vocabulary through the Internet on their computers. Moreover, other mobile participants learned significantly more vocabulary than the group using paper content. Some studies, on the other hand, suggest that MALL has almost no positive effect on learners' vocabulary learning. Alemi et al. (2012), for instance, investigated the efficacy of MALL on EFL learners' vocabulary learning. During the experiment, the experimental group's students learned new words through SMS, while the control group's students were taught the same words using dictionary. In the post-test, there was no significant difference between the experimental and control groups.

Interactionist approaches to DA, on the other hand, have emphasized student-teacher engagement as well as the replication of prior tests to measure students' progress. Shrestha and Coffin (2012), for example, probed the benefits of tutor mediation in scholarly writing. The tutor mediation accompanied by the DA workshops and student interviews were all assessed. During DA, mediatory steps such as clarifying a mission, calling for clarification of context, or asking to suggest a potential solution were used, among others.

Poehner and Lantolf (2013) examined the use of computerized DA to measure L2 listening and reading comprehension. The researchers collected data about students' ZPD while also promoting their listening and reading skills using a graduated prompt method for each of the test elements. Likewise, Poehner et al. (2015), used a graded prompt approach. In the above sample, students (n = 82) were given a mediated score indicating the stimuli required by each participant along with their test scores in listening and reading. According to the researchers, combining the two scores offered a detailed diagnosis of the students' L2 growth as well as useful knowledge for future teaching and learning. Darhower (2014) also used an interventionist approach to examine past-tense storytelling through synchronous computer-mediated commu-

nication between two Spanish learners. This method was also found to be a useful tool for explaining students' ZPD and further understanding their L2 ability.

Although computerized DA experiments like those of Poehner et al. (2015) have shown their immense ability in portraying a fine-grained image of the learners' skills, there are still some big questions about the intervention approach. As a result, both Poehner and Lantolf (2013) and Poehner et al. (2015) agreed that L2 computerized DA is still in its early stages, and that it is still a long way from being a full-fledged L2 computerized DA that has both Vygotsky's original concepts and user-friendly results in terms of different scores and scoring profiles.

Recently, Rezaee et al. (2020) explored the effect of mobile-based DA on improving EFL learners' oral fluency. Rezaee et al. (2020) found that the experimental group that received mobile-mediated DA improved their speaking fluency significantly better than the control group.

In another study, Ebadi and Bashir (2021) examined the effect of mobile-mediated DA on EFL learners' writing skills. Experimental groups received text-and voice-based mediations following an interactionist DA using both WhatsApp and Google Docs. The results showed that only the text group's post-test scores significantly improved, and there was a significant difference among the three groups in their post-test scores, which indicated the outperformance of the voice group.

Furthermore, reviews have shown that the usefulness of technology in learning an L2 is still unclear. Not only are the findings ambiguous and contradictory, but there is also a scarcity of empirical research on elements of technology that are not core to mobile phones, such as DA, which might be related to the field's infancy. Moreover, new potentials of MIM and language acquisition through free interaction should be studied to compensate for the paucity of study in MALL and DA. As a result, the goal of this study was to investigate the possibility of pedagogical DA in an L2 classroom for increasing the grammatical understanding of Iranian EFL students. In order to compensate for the deficiencies in the research, the following questions were addressed and answered in order to meet the study's goals:

Q1. Does using in-class dynamic assessment play any role in EFL learners' L2 grammar knowledge?

Q2. Does using mobile-mediated dynamic assessment play any role in EFL learners' L2 grammar knowledge?

Q3. Is there any significant difference between in-class and mobile-mediated dynamic assessment in gaining L2 grammar knowledge?

3. Methodology

3.1 Participants

The participants in this study were divided into three groups (N = 78), each consisting of 26 students studying at a language center in Shiraz, Iran. They enrolled in a four-hour-per-week pre-intermediate English class. When they were picked, their availability to the researcher was considered. They varied in age from 18 to 29 years old. The participants were divided into three similar groups at random to improve the generalizability of the findings (one control and two experimental).

3.2 Instruments

Grammar Pre-test and Post-test

The participants' level of competence and the book they were studying were used to create a grammar exam (i.e., Top Notch). The test was multiple-choice and included 50 grammar questions. The exam was piloted on a representative sample of students (N=20) from another language institute at the same level. The KR-21 was used to assess the test's dependability. The KR-21 test yielded a coefficient of 0.85. In addition, the exam was subjected to an item analysis to ensure that item facility and item discrimination were adequate. Three highly qualified EFL teachers validated the test's content validity. The test was run on both experimental and control groups once it was piloted. The researcher gathered and assessed all of the exam papers after the examination. The post-test was based on the pre-test, in which the items were counterbalanced, and the sequence of the options was modified to prevent students from memorizing the answers. The test was done at the end of the course to see whether there were any variations between the groups' Zones of Actual Development (ZAD).

Prompts Inventory

A list of instructor prompts was compiled in order to offer students with comments in a logical manner, from the most implied one to the most obvious. Here the sequence of the teacher prompts will be mentioned, first, an emoticon (or visual/auditory signal) is used by the instructor to indicate that someone is pondering. Second, to repeat the entire sentence, the instructor adopts an interrogative tone (elicitation). Third, the only element of the statement that is incorrect is reiterated (elicitation). Forth, a mistake in the statement is pointed out by the instructor. Fifth, the erroneous words are capitalized by the instructor. Sixth, the instructor suggests a desired form that is more comparable (recasts). Seventh, an explicit metalinguistic explanation is utilized.

When a mistake was committed, the teacher strictly adhered to this scale. Prompt 1 was supplied whenever a non-target-like phrase or pattern was stated, whether explicitly or implicitly (Iwashita, 2003). According to the level of clarity, negative feedback was divided into three groups in the inventory: restating a non-target-like form, recasts, and giving a more target-like form (Long, 1996). Elicitations are replies to earlier examples in which the speaker indicates a more target-like structure without offering any metalinguistic information.

Higher-level mistakes like style and register were overlooked as long as pupils generated target-like structures. The inclusion of emoticons in MIM applications addressed concerns about the challenges posed by DA in computer-mediated interaction, including the inability to convey visual (e.g., gestures) or aural (e.g., intonation) cues in an online setting.

Mark Sheet

The researcher utilized a journal with a mark sheet for the qualitative portion of the investigation. When a learner committed a mistake, the instructor's advice was recorded on the mark sheet. An interaction account was provided on this mark sheet, which listed the names of the users, the prompt issued, and the date it happened. This allowed the instructor to account for the students' grammar learning process during instruction by employing DA methods to provide feedback.

3.3 Data collection procedure

First, all participants took a grammar pre-test to track their gram-

mar learning progress during the three-month course, which ran from September to December 2020. WhatsApp was introduced to one of the experimental groups (mobile-mediated DA), and 26 learners were placed in a discussion group where DA was used. The identity of the members was hidden, and a WhatsApp group was created. The second experimental group, which received the DA in class, was the second group (in-class DA). The third group was the control group, which had their ZAD evaluated at various times throughout the course. The ZAD represents a student's current level at a certain point in the learning process. In addition, this group did not receive DA in class. The researcher wanted to see how much the participants' L2 grammatical abilities improved because of DA and if MIM could be utilized to perform DA in the experimental groups.

When students committed an error, a scale of prompts was utilized to mediate the learning process in the experimental groups (see Figure 2). When non-target-like forms appeared, the researcher, who was also the instructor of the pupils under study, provided corrective feedback to students using a list of prompts. These cues were given in the sequence of implicit to explicit. The number of prompts used was calculated three times throughout the lesson, namely two weeks (15/09/2020), two months (1/11/2020), and three and a half months (15/11/2020), in order to examine the pedagogical DA at several intervals. Using a mark sheet, the researcher maintained the prompts provided, and the date the repair was done on a regular basis.

The researcher in the mobile-mediated DA group was then allowed to look over the data obtained using the platform's online version to account for the degree of mediation and the students' ZPD. Several practical concerns had to be taken into account in the mobile-mediated DA group, including collecting members' cell phone numbers, creating a WhatsApp group, and ensuring that all participants have 3G or 4G Internet connection. The research, however, only looked at writable content. The complete class sessions at the three measurement times were videotaped and subsequently, teacher-student interactions were evaluated in the in-class DA group. The grammar post-test was performed at the conclusion of the course to see if there were any changes in the groups' ZAD.

4. Results

To begin, the Kolmogorov-Smirnov (K-S) tests were employed to ensure that the grammar pre-test and post-tests were normal (Table 1).

Table 1: Results of Kolmogorov-Smirnov Tests on the Grammar Pre-test and Post-test

Group		Kolmogorov-Smirnov		
		Statistic	df	Sig.
Traditional assessment	grammar pre-test	.137	26	.200
	grammar post-test	.140	26	.200
In-class DA	grammar pre-test	.137	26	.200
	grammar post-test	.155	26	.110
Mobile–mediated DA	grammar pre-test	.150	26	.116
	grammar post-test	.153	26	.122

As seen in Table 1, all of the significant values were more than .05, suggesting that the assumption of normality was not violated. The mean score, standard deviation, the students' minimum and maximum grades on the grammar pre-test and post-test in three groups are presented in Table 2.

Table 2: Descriptive Statistics of the Grammar Pre-test and Post-test Scores

Groups		N	Min.	Max.	Mean	SD
Traditional assessment	grammar pre-test	26	16	25	19.65	2.799
	grammar post-test	26	27	34	30.00	2.154
In-class DA	grammar pre-test	26	15	24	19.19	2.593
	grammar post-test	26	30	38	33.81	2.333
Mobile-mediated DA	grammar pre-test	26	16	24	20.01	1.928
	grammar post-test	26	31	41	36.77	2.405

As Table 2 depicts, all groups had very close means in the pre-test (19.65; 19.19; 20.01). However, on the post-test, mobile-mediated DA group had the highest mean score (M = 36.77), and in-class DA group had a higher mean (M = 33.81) than the traditional group (M = 30), suggesting that DA in experimental groups had a positive effect on participants' performance. A One-way ANCOVA was used to answer research questions one, two, and three, which looked at important differences in learning L2 grammar knowledge among three groups. This measurement was

employed to evaluate if the three groups' post-test results differed considerably from their pre-test findings (see Table 3).

Table 3: Results of ANCOVA on Grammar Post-test Scores

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial η^2
Corrected Model	864.153	3	288.051	162.349	.000	.868
Intercept	402.693	1	402.693	226.962	.000	.754
Gram Pre-test	265.358	1	265.358	149.559	.000	.669
Group	558.903	2	279.452	157.502	.000	.810
Error	131.296	74	1.774			
Total	88665	78				
Corrected Total	995.449	77				

As shown in Table 3, a significant difference between the performance of the three groups on the grammar post-test was found, F (2, 74) = 157.502, $p < .05$, partial $\eta^2 = .810$. There was a significant difference between the students' performance on the pre-and post-tests. The value of partial η^2 is .810 which is a large effect size (Cohen, 1988), suggesting that almost 81 percent of the variance of the grammar test is explained by the treatment. In order to locate where the differences lie, Bonferroni post hoc tests were performed (see Table 4).

Table 4: Results of Bonferroni Post hoc Tests

(I) Input Group	(J) Input Group	Mean Difference (I-J)	Std. Error	Sig.
Traditional assessment	In-class DA	-4.159*	.371	.00
	Mobile-mediated DA	-6.476*	.370	.00
In-class DA	Traditional assessment	4.159*	.371	.00
	Mobile-mediated DA	-2.317*	.373	.00
Mobile-mediated DA	Traditional assessment	6.476*	.370	.00
	In-class DA	2.317*	.373	.00

Table 4 shows that the mean scores of both in-class DA ($MD = 4.159, p < .05$) and mobile-mediated DA ($MD = 6.476, p < .05$) groups are significantly different from that of the traditional assessment group. This means that both experimental groups outperformed the control group. Moreover, the results showed a significant difference between mobile-mediated DA and in-class DA groups ($MD = 2.317, p < .05$), suggesting

the outperformance of mobile-mediate DA group over in-class DA group in the grammar post-test.

5. Discussion

The findings revealed that mobile-mediated DA is effective in improving Iranian EFL learners' grammatical acquisition. The findings corroborated earlier studies, suggesting that EFL students who utilized mobile-mediated DA improved their language abilities (Andujar, 2020; Ebadi & Bashir, 2021; Rezaee et al., 2020). One reason for this outcome might be that mobile-mediated DA allows students to interact with the instructor while completing the test (Poehner, 2008). Furthermore, students can use mobile-mediated DA to communicate with the assessor in ways that are not feasible in formal exams. The instructor had numerous opportunities to recognize the pupils' linguistic challenges and aid them in overcoming them and increasing their learning because of the dialogic component of DA. Another rationale for Iranian EFL learners' enhanced grammar learning in the experimental groups might be the beneficial impacts of ZPD-oriented interaction during both in-class and mobile-mediated DA, which created a conducive learning environment for grammar development.

One of the most significant aims in the DA literature is to assist L2 learners to get a more exact evaluation of their ZAD and ZPD (Poehner et al., 2015). Apart from identifying learners' ZPD correctly, the educational viewpoint of this sort of evaluation is critical. The outcomes of this study may contribute to a better understanding of DA's educational value. According to previous DA research (e.g., Andujar, 2020), learners usually decreased the number of suggestions provided and required fewer explicit prompts, suggesting that the mediation approaches improved their language ability. The findings imply that the capacity of mediator-learner and learner-learner involvement to assist L2 learning, as demonstrated in earlier MIM research (e.g., Andujar, 2020), might be applicable to DA methods.

As this study's method to DA is unique, the findings cannot be directly compared to other studies in the area. Previous research on DA, such as Andujar's (2020) and Poehner et al.'s (2015) that utilized a

graded prompt approach, emphasized the potential of DA to identify students' strengths and shortcomings in L2 learning. Unlike previous research on mobile-mediated DA that used an inventory of prompts to elicit automated responses to linguistic cues (e.g., Poehner et al., 2015), or a computer program that allowed students to choose from a variety of mediation prompts (e.g., Poehner et al., 2015), in this study (e.g., Yang & Qian, 2019), Because of the asynchronous nature of MIM, the teacher was able to track and evaluate the interactions while still delivering appropriate feedback to the participants, resulting in high-quality feedback. In contrast to in-class DA, when the teacher could not offer meaningful feedback asynchronously, the capacity to react directly to each student in the community allowed the provision of this type of DA. This might explain why the mobile-mediate DA group outperformed the in-class DA group on the grammar post-test.

According to Vygotsky (1978), ZPD-based interaction within the evaluation process gives a better impression of students' skills than ZAD alone. As a result, it's not unexpected that after adopting mobile-mediated DA and in-class DA, EFL students' grammar learning increased substantially. The in-class DA group was outperformed by the mobile-mediated DA group. The positive impact of providing students with multiple forms of mediation throughout the mobile-mediated DA period might be the explanation for such an outcome (Poehner, 2008). During DA, the instructor's mediation was specifically customized to a need of each student and given in a step-by-step way. Because each student's ZPD was unique, the mediation they received differed as well.

Moreover, the findings of the study were in line with prior studies on MALL's efficacy in EFL learning (e.g., Andujar, 2020; Thornton & Houser, 2005). Mobile technology allows learners to be more inspired, positioned (location-specific), and socially engaged through a range of learning opportunities and platforms (Yang & Qian, 2019). Additionally, mobile devices provide student-centered teaching and learning settings in which students' learning is based on their active engagement, and teachers are viewed as guides. The results of this study contrasted with those of earlier studies that concluded that mobile learning was unsuccessful for EFL students (e.g., Alemi et al., 2012).

6. Conclusion

MIM applications were used in this research to use a DA approach to promote participants' L2 grammar acquisition. MIM was used to maximize the advantages of this approach of evaluation while avoiding the drawbacks found in prior DA research. DA allows learners in the experimental groups to explore their ZPD, which is consistent with former studies (e.g., Andujar, 2020; Poehner et al., 2015).

The findings also reveal that by the conclusion of the encounter, students in both DA groups required less direct input to grasp language faults they had committed, implying that they could comprehend a specific language error faster and build a more target-like form. This study, however, did not measure real learners' reception other than the grammar test. As a result, we can only draw inferences regarding the sort of feedback utilized in the current research intervention scale and how it changed over time. Learners were treated equally in this research, regardless of how much control they had over a given language component or whether the instructor offered feedback indirectly or overtly. As a result, determining how much influence a student has over his or her production would be challenging. It may be argued that students in DA groups had gained greater command over their language performance as a result of their increased tendency toward implicit feedback. However, when students get more used to teacher prompts, they become more conscious of their mistakes in conversations, which may have an influence on the frequency of implicit prompts in this research.

Both Iranian and non-Iranian EFL instructors can benefit from the findings. To begin with, MALL is considered a relatively new field that is quickly developing. In the field of Second - language teaching and learning, education experts still have a lot of work to do to understand how mobile technology may be utilized to aid various forms of learning and enhance usable techniques and resources. This study's findings might encourage the usage of mobile devices in EFL classes by giving scientific proof in this area. Secondly, as a novel efficient teaching technique, instructors may successfully apply mobile-assisted DA. The mobile-assisted DA can be used by instructors to perform L2 activities

outside of class to improve EFL students' grammatical abilities. It also assists teachers in detecting their pupils' weaknesses and, if required, offering remediation. Mobile-assisted DA can also benefit second language learners since it provides for more precise measurement of pupils' grammar, which could lead to improved L2 outcomes. Mobile-assisted DA can provide a more accurate picture of learners' abilities because it provides a stress-free learning environment.

There are limits to any research, and this one is no exception. The retention of the participants in this research was not assessed. As a result, future studies might incorporate delayed post-tests to see how DA affects word recall. Moreover, this research focused on EFL students at the pre-intermediate level. Other levels of linguistic competency can be studied in future experiments. Furthermore, this research was done in an EFL setting. As a result, future research might look at the impact of mobile-mediated DA on EFL learners' grammatical understanding in ESL settings. Lastly, as the major source of information in the classroom, the instructor was required to offer continual feedback, which may not be feasible in many educational contexts. As a result, future DA studies can take into account peer input, reducing the pressure on teachers.

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