The Effect of Interventionist Classroom vs. MALL Dynamic Assessment on EFL Learners' Vocabulary Learning

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ABSTRACT

At the level of research, assessment and instruction have evolved/developed as separate specializations with their own conventions and techniques, e.g., expert diaries and gatherings (Pohner 2005). One of the areas which recently have been advancing more dynamically in applied linguistics is MALL. It has been considered a means of developing various language skills and sub-skills (Marandi, 2011). Therefore, the present study tried to merge these two important issues by exploring the effect of interventionist classroom dynamic assessment and MALL on EFL learners' vocabulary learning. For this purpose, initially, a PET (2015) was administered to 130 EFL students, 90 of whose scores were between one standard deviation above and below the mean score. First, vocabulary knowledge test was administered as a pre-test to check students' vocabulary knowledge. The participants were then divided into two experimental and one control groups, each experimental group received treatment in a specific type of classroom setting and MALL. In the control group, the participants learnt 40 lexical items/words in a traditional manner, whereas in the classroom dynamic assessment and MALL dynamic assessment groups, the participants received DA strategies feedback on 3 vocabulary tests throughout the semester, however, the way they were treated in these two groups varied. After the treatment, VKS was administered as the posttest. The results of a repeated-measures two-way ANOVA showed that there was a significant improvement in all the three groups. More specifically, the findings showed that although the classroom dynamic assessment group outperformed the other two groups in the posttest, the difference was significant only between the classroom dynamic assessment and control group. Conclusions and pedagogical implications are discussed towards the end of the paper.

Keywords: Dynamic assessment; interventionist; MALL; vocabulary learning.

1. Introduction

In an instructive setting, assessment is the way toward describing, gathering, scoring, and translating data about learning. According to Brown (2010, p.346), "assessment is an ongoing process of collecting data about a given object of interest according to procedures that are systematic and substantively grounded." Nowadays, researchers are recommended to use multiple assessments to evaluate what learners have learned. Dynamic assessment (DA) is a kind of interactive assessment used most frequently in education. DA is a relatively new approach to L2

assessment which has been introduced to L2 research and educational community by Poehner and Lantolf (2004, 2005).

Nowadays also mobile technologies have been gradually integrated into learning. The wide use of smartphones and other portable and wireless devices has been significantly changing the ways of learning in many contexts, including language learning (Kukulska-Hulme, 2009).

Assessment is a fact of daily life and this study aimed at seeking the effect interventionist classroom vs. MALL (mobile assisted language learning) dynamic assessment, which is considered an instructional tool, on vocabulary learning and also contribute to the literature on the way that MALL environments foster learning vocabulary.

In what follows, first a brief overview of dynamic assessment, MALL, and vocabulary learning is provided. Next, the methodology of this research is explained, followed by the results of data analysis. Finally, conclusions to the study are presented and pedagogical implications laid out.

2. Literature Review

2.1. Dynamic Assessment

Poehner (2008) believed/believes that DA is completely different from traditional assessment and way of thinking about/approach to assessment. DA is defined as "an interactive, test–intervene–retest model of psychological and psychoeducational assessment" (Hywood & Lidz, 2007, p.1). According to Sadak (2015), "one area of research that has recently emerged to capture the essence of ongoing assessment methods is that of dynamic assessment" (p.1). DA considers learners make response to instruction during the assessment process and focuses on the evaluation process and product by providing feedback to them (Birjandi, Estaji, & Deyhim, 2013).

One of the most distinguishing features which differentiates traditional assessment from dynamic assessment is the process of providing feedback. In traditional assessment, there is no feedback in the process of assessment, but in DA, the process of assessment is mediated (Sternberg & Grigorenko, 2002). Being the central concept in DA, 'mediation' refers to "the part played by other significant people in the learners' lives, people who enhance their learning by selecting and shaping the learning experiences presented to them" (Turuk, 2008, pp.7-8).

The origin of DA goes back to Vygotsky's (1978) sociocultural theory, especially his zone of proximal development (ZPD), and Feuerstein's (1979) mediated learning experience (MLE), which resulted in a paradigm shift in language assessment, bringing with more emphasis on learning potential and enhancing learning how to learn (Tzuriel, 2000). In short, MLE refers to human communications that cause people to change and to improve themselves by the use of higher mental processes.

DA can be performed/through either the interventionist or interactionist models, cf. Poehner and Lantolf (2004). Interventionist DA stands closer to certain forms of statistic assessment and psychometrics, in which mediation offered to learners, is standardized, whereas interactionist DA conforms to Vygotsky's preference for cooperative dialoging.

DA has been researched extensively recently. Hidri (2014) investigated the difference between static and dynamic assessment of L2 listening comprehension and came to the conclusion that dynamic assessment provided better insight into/understanding of learners' cognitive and metacognitive possesses than the traditional static assessment. Further, Ashraf, Ghazizadeh, and Motalebzadeh (2016) investigated the impact of electronic-based dynamic assessment on the listening ability of EFL learners and found that mediation sensitive to the students' ZDP resulted in important changes in the students' listening comprehension.

2.2. MALL

Computer Assisted Language Learning (CALL) is according to Schmitt and Celce-Murcia (2002, p.9), "one of the more dynamic areas in applied linguistics." It has been considered as a means of developing various language skills and sub-skills (Marandi, 2011) and thus is worth considering for the combined effect it may have with a dynamic approach, which is based on a dialogic interaction between the learners and a more knowledgeable instructor.

No one could deny the fact that the whole world is going mobile. The widespread ownership of mobile phones and other portable and wireless devices has been changing our learning, communicating, and even life styles in a profound manner. Use of these mobile technologies turns out to be well-aligned with educational goals such as extending learning opportunities, improving student achievement, supporting differentiation of learning needs, goals and learning styles, and delivering authentic learning materials to students who would otherwise have no access to them (Kukulska-Hulme, 2009). Although it seems to be ubiquitous, there is yet no agreed definition of 'mobile learning' or 'm-learning' (Kim & Kwon, 2012; Kukulska-Hulme, 2009).

Extensive research has been conducted on technology-mediated language learning.

As the language learning trends move from traditional behaviorist approaches towards communicative and constructive approaches (Chuo, 2004) we also witness gradual shifts of the trends in the field of computer-assisted language learning (CALL).

According to Valarmathi (2011) Mobile-assisted Language Learning (MALL) describes an approach to language learning that is assisted or enhanced through the use of a handheld mobile device. Yu (2007) identifies three generations of mobile-assisted learning, the first generation is about transferring learning content, the second deals with mobile learning designs and the third introduces learning in a 1:1 setting and context-aware learning.

2. 3. Vocabulary learning

There are many dimensions to vocabulary learning and acquisition, as reflected in the multitude of different areas of research being done on the topic. One of them is the Keyword Method which is simply defined as a two-stage procedure for remembering new words that have an associative component (Pressley, Levin, and Delaney, 1982). To use this method, a sound or image linkage between a new L2 word and a word in the first language should be created. There are two versions of the Keyword Method, one based on the construction of visual images and the other based on the construction of sentences. Evidence exists that the visual imagery version is superior to the sentence construction version in facilitating recall of words (Pressley, et al, 1982).

3. Methodology

There has seen renewed interest in vocabulary learning in EFL settings, whose importance cannot be overlooked. It was assumed at the outset of this study that interventionist vs. MALL dynamic assessment would enhance EFL learners' vocabulary learning. To investigate this assumption, the following research questions were proposed:

Does interventionist approach to classroom dynamic assessment have any significant effect on EFL learners' vocabulary learning?

Does interventionist approach to dynamic assessment in MALL have any significant effect on EFL learners' vocabulary learning?

Is there any significant difference in EFL learners' vocabulary learning with regard to their receiving dynamic assessment strategies in classroom and MALL?

To answer these questions, certain steps were taken. In what follows, the participants, instruments, and procedure of the study are explained.

3. 1. Participants

Out of 130 EFL students, forty male and fifty female intermediate students who were learning English in language in Tarjoman and Pajouhan institutes were chosen non-randomly using availability sampling procedure (Farhady, 1995) based on their performance on proficiency test (PET). Furthermore, all of them were divided into two experimental and one control groups, i.e. Dynamic assessment MALL group, Dynamic assessment non-MALL (classroom) group, and control group. Attempts were made to select an equal number of males and females in each group.

3. 2. Materials and instruments

To put the objectives of the study into practice, the researchers utilized the following instruments:

Preliminary English Test (PET). The Cambridge Main Suite, which is a valid and reliable test developed by Cambridge ESOL, consists of five examinations in different language proficiency levels, one of which is PET. PET is at level B1 for language teaching and learning, and consists of three papers: reading and writing, listening, and speaking. The participants in the three experimental groups in this research were selected, based on their performance on the PET proficiency test. The PET (2015) was administered to the participants to check their homogeneity.

Vocabulary Knowledge Scale (VKS). A vocabulary test based on Vocabulary Knowledge Scale (VKS) was used both as both pre-test and post-test. The purpose of the pre-test was to make sure that the students did not know the definitions of the selected vocabulary items. Moreover, to investigate the progress of the participants at the end of the study, the same VKS was used as a post-test.

VKS is a generic instrument, in the sense that it can be used to measure any set of words (Wesche and Paribakht, 1996). First, on the basis of the results of this scale used as the pre-test the researcher could ensure that the vocabulary items tested were unknown to the learners. The focus of the study was on forty vocabulary items which were taught in both experimental and control groups. These forty new words were those words which the participants rated 1 or 2 in VKS.

VKS has five levels:

I. I don't remember having seen this word before.

II. I have seen this word before, but I don't know what it means.

III. I have seen this word before, and I think it means .... (synonym or translation)

IV. I know this word. It means .... (Synonym or translation)

V. I can use the word in a sentence: ....(If you do this, please also do section IV (Wesche and Paribakht, 1996)

The scale ratings range from1 to 5, in that 1 represents complete unfamiliarity with the new words while 5 shows an individual's ability to efficiently use a word in a sentence. As mentioned earlier this paper, the same instrument was used as the post-test.

Researcher Made Vocabulary Tests. This material was available into two forms: (a)

Hard copy for the classroom DA group and (b) MALL for the experimental group. As part of the treatment, the participants in the classroom dynamic assessment group answered/filled three vocabulary tests during the semester. These vocabulary tests were piloted before the study and their reliability and validity scores were checked and measured by Cronbach Alpha. Thirty intermediate level EFL learners similar to the target group answered these vocabulary tests before starting the study.

Telegram Application. Telegram is the fastest messaging application on the market, connecting people via a unique, distributed network of data centers around the globe.

3. 3. Procedure

At the beginning of the study, 120 intermediate level EFL students were selected non-randomly through availability sampling. The PET (2015) was administered among them, as the proficiency test. Then, 90 students whose scores were one standard deviation above and below the mean score on PET were selected as the actual participants of this study. Next, they were divided into two experimental groups' classroom and MALL dynamic assessment groups, each receiving a certain type of treatment and control group. Prior to the treatment, a pre-test was administered to confirm that the selected vocabulary items were unknown to the students. The test consisted of forty words picked out carefully from the researcher who? made vocabulary tests. Forty vocabulary items were taught to the three groups using in their course books. The students in the control group were taught forty new words through dictionary definitions, while in the experimental groups the students were taught/were exposed to these forty vocabulary items in the dynamic assessment procedure. After receiving the treatment lasting for one semester, at the end of the study, all the participants took the VKS as the posttest. The details of the treatment in each experimental group is explained below.

Control Group: This group was taught forty new words through dictionary definitions. The researchers worked on the student's vocabulary during the semester by focusing on vocabulary activities in their course books.

MALL DA Group: 30 subjects created a special group on Telegram named "Vocabulary Learning Class". More precisely, not only did these students participate in the mediation class, but also they joined in the course book reading sections in Telegram. In the Telegram group, the researcher endeavored to chat with different members of the group about the procedures. The researcher inspired the students to be active in the group so that the students could learn and review the lessons and skills from one another. The teacher put illustrated words in the group and after some days she put vocabulary tests in the group and after the administration of the first vocabulary test, the researchers communicated incorrect answers to the students and they received different DA strategies through the application. Additionally, the teacher used to be online every night on Telegram and solved students' learning problems when students found the course sophisticated and complicated and the teacher attempted to inspire them via Telegram.

Classroom DA Group: In this group, dynamic assessment acted as a tool for instruction. The principles of interventionist DA were applied in the classrooom, including some minutes of intervention in the classroom, as the mediation. The test-mediation-test format of DA, which was proposed by Corman and Budoff (1973), was used in this group, and during the administration of researcher made vocabulary tests, the researchers used DA strategies. After the administration of the first vocabulary test, the researchers returned the papers to the students and they received different DA strategies provided by Aljaafreh and Lantolf (1994) and Lantolf and Aljaafreh (1995). The researchers did not give ready answers to the students but discussed how to answer the questions. Then, the participants could make conclusions about the answers. All the participants received the necessary information and they were ready to take the test again, to be administered in the next session. After three mediation sessions, another vocabulary test was administered among the participants in the same format. During 16 sessions of treatment, the researchers administered three vocabulary tests to check/the effect of the treatment. Some of the DA strategies used in this group were:

- To indicate that something was false, the wrong answers were highlighted.
- The error type was provided for each highlighted incorrect word or groups of words, narrowing down the nature of the incorrect form.
- A detailed explanation about incorrect answers was provided.
- The tutor provided clues to help learners arrive at the correct form.
- The correct form was provided.
- The tutor provided some explanations for the use of the correct form.

  (Aljaafreh & Lantolf, 1994, p.471; Lantolf & Aljaafreh, 1995, p.622)

4. Results

As stated before, in addition to the pretest and posttest of VKS, three researcher prepared tests administered among learners, which were piloted earlier, were used for the treatments provided in the classroom and MALL dynamic assessment groups. The reliability indices of the three tests in piloting were estimated by means of Cronbach's Alpha, which is an ideal measure of the internal consistency of the tests. The results of these calculations are provided in Table 1.

As shown in Table 1, the value of Cronbach's Alpha for all the vocabulary tests (α 1st = .65, α

Table 1. Reliability indices of the three vocabulary tests in piloting

	VT1	VT2	VT3
N of Items	27	28	30
Cronbach's Alpha	.65	.63	.60

Table 2. One-way ANOVA on pretest of VKS of the three groups

	Sum of squares	df	Mean square	F	Sig.
Between groups	5.75	2	2.87	.65	.52
Within groups	381.36	87	4.38		
Total	387.12	89			

Table 3. Descriptive statistics of the pretest and posttest of three groups

	N	Mean	SD
Pretest of control group	30	17.40	2.17
Posttest of control group	30	18.36	2.45
Pretest of MALL DA group	30	17.23	1.97
Posttest of MALL DA group	30	20.50	.32
Pretest of classroom DA group	30	16.80	2.12
Posttest of classroom DA group	30	22.13	1.90

Table 4. Repeated-measures two-way ANOVA on the pretest and posttest of three groups

Source	Type III sum of squares	df	Mean square	F	Alpha.
Time	457.60	1	457.60	415.78	.00*
Group	76.67	2	38.33	5.07	.00*
Time * Group	143.14	2	71.57	65.03	.00*

Table 5. Multiple comparisons of the effect of interventionist classroom vs. MALL DA in classroom DA, and MALL DA groups on vocabulary learning

Group comparison	Mean difference	Std. error	Sig.
Classroom vs. MALL DA	.60	.50	.49
Classroom DA vs. control	1.58	.50	.00*
MALL DA vs. Control	.98	.50	.15

2nd = .63, α 3rd = .60) are between .50 to .70, which should be considered moderatately satisfying (Farhady, Jafarpur, & Birjandi, 1995). Consequently, the results of the present study should be generalized cautiously.

A one-way ANOVA was employed on the pretest of the three groups to test whether the groups belonged to the same population in terms of their initial proficiency in vocabulary or not. The outcomes of the one-way ANOVA on the pretests are reported in Table 2. Since the level of the significance obtained is .52, which is larger than the .05 standard level of significance, it was concluded that there was no statistically significant difference between the mean scores of the three groups.

Next, the descriptive statistics of the pretest and posttest of the three groups are reported in Table 3. The pretest means of the control, MALL DA, and classroom DA groups are 17.40, 17.23, and 16.80 respectively, whereas the posttest means of the three groups are 18.36, 20.50, and 22.13 respectively.

Table 3 shows an increase in the control group members' vocabulary knowledge since the mean of the posttest ($\bar{X}$ posttest = 18.36) is higher than that of the pretest ($\bar{X}$ pretest = 17.40). However, it can be claimed that this improvement was not very considerable. On the other hand, the difference captured in the performance of the MALL group from the pretest ($\bar{X}$ pretest = 17.23)

to the posttest ($\overline{X}$ posttest = 20.50) seems to be considerable. Furthermore, the difference between the mean score of the classroom dynamic assessment group on the pretest ($\overline{X}$ pretest = 16.80) and the posttest ($\overline{X}$ posttest = 22.13) shows the highest improvement among the three groups.

Based on the means and standard deviations of the three groups on the pretest and the posttest, there seemed to be a significant improvement in the vocabulary knowledge of all the learners, especially in the MALL and classroom DA groups. However, to investigate whether the differences between the pretest and posttest results of the three groups were significant or not, running a repeated-measures two-way ANOVA was necessary. Its results are presented in Table 4.

As it can be seen in Table 4, the calculated level of significance for time .00, is smaller than the standard .05 level of significance; thus, it was concluded that the F ratio for time (415.78) was significant. It was, therefore, concluded that through time, that is, from the pretest to the posttest, the vocabulary knowledge of the members of the three experimental groups has improved considerably. In addition, the calculated level of significance for group membership is also smaller than the standard level of significance (.05), which means there was a significant difference in the posttest scores of the three groups, too. Therefore, it was concluded that the vocabulary knowledge of the members of the three groups differed significantly in the posttest. In other words, the effect of the treatments provided in the two experimental groups were not the same.

Finally, as the F ratio calculated for the interaction of time and group membership (65.03) is also significant (.00, which is less than the standard level of .05), it was reconfirmed that there has been a difference in the effect of the treatments given to three groups. This means the treatments did not affect the participants' improvement in vocabulary knowledge in three groups to an equal measure. A close look at the posttest scores of the three groups in Table 3 shows that the classroom dynamic assessment group outperformed the other two groups, whereas the control group received the lowest score on the posttest. The further comparison of the effect of the treatments given to the two experimental and control groups are reported in Table 5, which provides the results of multiple comparisons of the effect of the treatments.

As shown in Table 5, the classroom dynamic assessment group outperformed the other two groups; however, this performance was significantly better than the performance of the control group only. In addition, even though the MALL DA group members' vocabulary knowledge was superior to that of the control group members, this difference was not statistically significant.

The results presented in the tables presented above helped the researchers to answer the research questions of this study. In other words, it was found that interventionist classroom DA and MALL DA exert a significant effect on EFL learners' vocabulary learning.

5. Conclusion

The results of this study demonstrated that dynamic assessment in classroom and MALL groups significantly affected EFL learners' vocabulary learning even though the impact was not remarkable when compared with the control group.

These findings are similar to other research on dynamic assessment which indicated positive effects of this assessment type on language learning, for example, Birjandi, et al. 2013; Hidri, 2014; Hywood & Tzuriel, 2002; Poehner, 2008). The findings of this study are also in line with Hywood and Lidz's (2007) statement that DA, as an interactive process, consistently and objectively measures the learners' progress in response to cues, strategies, feedback, etc. which are presented to them during the assessment.

DA enables teachers to be effective cognitive coaches and designers of the learning environment. Alongside, executing DA procedures can improve learners' self-confidence. In addition, MALL helps learners to learn how to become autonomous.

Useful materials can also enhance EFL learners' vocabulary learning as they are a key issue in effective instruction. It is recommended to materials developers to become familiar with mobile applications, and DA strategies and to present these in textbooks or teachers' manuals in order to help EFL learners to make fast progress. DA strategies can be used in textbooks to integrate assessment and teaching which can cause more improvement in learning.

The final word is that there is a need to do more research on dynamic assessment in different types of MALL on the other language skills (i.e., reading, listening, speaking, and writing) and their sub-skills with learners from different proficiency levels to check the usefulness of such DA in various language classes and MALL.

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