

The Immediate and Delayed Effect of Dynamic Assessment on EFL Reading Ability

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Abstract

Dynamic assessment rooted in sociolinguistic theory of Vygotsky has a long history in applied linguistics but has recently been the hot topic of EFL studies. The present study aimed at investigating the difference between applying dynamic and non-dynamic assessment of EFL reading comprehension ability and examining its immediate and delayed effect. 197 Iranian university students participated in this study. The design of the study was quasi-experimental and several t-tests were used for answering the research questions. The results of the study indicated a significant difference between dynamic and non-dynamic assessment of reading ability in favor of dynamic assessment. Also a beneficial effect of dynamic assessment for EFL readers was found and the effect didn't fade away over time. This beneficial immediate and delayed effect on EFL reading ability can have useful implications for EFL learners, teachers and testers.

Keywords: dynamic assessment, non-dynamic assessment, sociocultural theory, zone of proximal development, reading comprehension ability

1. Introduction

Dynamic assessment (DA) in language learning, which derives from Vygotsky's (1978) idea on how child's cognition develops and applies Vygotsky's sociocultural theory into assessment, can offer new insights into assessment in the language classroom by revealing invaluable secrets about the ability of individual students and their abilities while answering each test item. The reason can be the process-oriented nature of dynamic assessment. While the results of traditional non-dynamic assessment (NDA) can only show the already existent abilities of the student, the analysis of zone of proximal development (ZPD) makes it possible to evaluate the ability of the student to learn from the interaction with a teacher or a more competent peer and predict their possible future development. Because Vygotsky's (1978) zone of proximal development suggests that different people can have the same baseline score on a static test but may differ in the extent to which they can profit from instruction. Unaided performance on static measures tells us what has already been learned or accomplished, whereas the breadth of the zone of proximal development is thought to provide prospective indications of what can be learned.

Dynamic assessment offers a wealth of development. It posits that mental activities are mediated by psychological tools. In other words different forms of cognition arise through interactions with others and internalization of such interactions. So socially mediated activities change both the world and the individuals. The present study aims at investigating the immediate and delayed effects of DA on EFL reading comprehension ability.

2.1 *Dynamic Assessment vs. Non-dynamic Assessment*

At the dynamic assessment Web site, DA is defined as "an interactive approach to conducting assessments within the domains of psychology, speech/language, or education that focuses on the ability of the learner to respond to intervention." In dynamic assessment procedures, the focus is on the process rather than the products of learning. In other words, the 'dynamic' nature of this approach is based on Vygotsky's observation that a body can show what it is only in movement (Lidz and Gindis, 2003). To emphasize the fluid nature of dynamic assessment Lidz (1987, p. 4) define it as "an interaction between an examiner-as-intervener and a learner-as-active participant, which seeks to estimate the degree of modifiability of the learner and the means by which positive changes in

cognitive functioning can be induced and maintained". Murphy (2011, p. 1) sees DA as "an approach to understanding and conceiving an individual in the assessment process".

DA provides information crucial for effective remediation, which is the ultimate goal of this assessment and is not provided by traditional non-dynamic tests. Lidz (1995) observed that traditional standardized assessment trails the learner's cognitive development to the point of "failure" in his/her independent functioning, whereas DA leads the child to the point of achieving success in mediated performance because it aims at identifying obstacles to more effective leaning and performance, to find ways to overcome those obstacles on subsequent learning and performance effectiveness (Haywood & Lidz, 2007, p. 3). Emphasizing the change in performance rate and remedial strategies necessary for progress (Wiedl, 2003). Limitations of traditional psychometric assessment methods made examiners move toward dynamic assessment as an alternative and/or supplemental approach. Dynamic assessment has, in fact, emerged from theoretical conceptions about human cognitive plasticity and the practical needs to find novel diagnostic measures for language learners which were not possible by traditional non-dynamic assessment. In fact DA is in a sharp contrast with more product-oriented approaches of mainstream psychometric and edumetric assessment (Resing, 1993; Slenders & Resing, 1997). The assumption behind dynamic assessment is that some individuals can achieve much more cognitively if provided the opportunity to work with a 'significant other' to improve their cognitive efficiency. The aim of dynamic assessment is to optimize cognitive functioning, rather than simply to sample it, and it is here that a paradigm shift in intellectual assessment occurs (Lidz, 1997). Lidz (1991) writes, "To merely describe the child's performance does not allow us to draw conclusions or to derive recommendations" (p. 24).

Lunt (1993) stated that the intention of traditional assessment (static procedure) is to measure actual development, which is often subsequently confused with and used as measures of potential. Dynamic assessment procedures, on the other hand, involve a dynamic interactive exploration of the learner's learning and thinking processes, and aim to investigate a learner's strategies for learning and ways in which these strategies may be extended or enhanced. Since it offers individuals an opportunity to learn, dynamic assessment has the potential to show important information about individual strategies and processes of learning. In other words, dynamic assessment sees development process as a predictor of the test-taker's future performance and offers potentially useful suggestions about teaching, because it measures the processes of knowledge acquisition at the time of test. It sees language learning as knowledge construction and the outcome of interaction between student and teachers (Birjandi, Daftarifard, & Lange, 2011). Lidz (1997, p. 282) explains that:

Dynamic assessment begins where traditional psychometric assessment ends. Instead of terminating the procedure with the establishment of a ceiling, the dynamic assessor views the ceiling as an area of functioning that warrants exploration.

An important advantage of DA is making recommendations based on developmental potential which is not revealed by traditional non-dynamic tests (Davin, 2011). In dynamic assessment the learners are instructed on how to perform certain tasks, and mediated assistance on how to master them are provided. Their progress in the ability to solve similar problems is then measured (Kirschenbaum, 1998). Lidz (1987) views dynamic assessment as an interaction between an examiner-as-intervener and a learner-as-active participant, which seeks to estimate the degree of modifiability of the learner and the means by which positive changes in cognitive functioning can be induced and maintained. He defines dynamic assessment as:

approaches to the development of decision-specific information that most characteristically involve interaction between the examiner and examinee, focus on learner metacognitive processes and responsiveness to intervention, and follow a pre-test-intervention-post-test administrative format. (1997, p. 281)

The rationale behind this method of assessment is that if a learner can improve on initial performance when mediated, s/he has the potential to achieve more (Ukrainetz, Harpell, Walsh & Coyle, 2000). DA is generally based on the belief that assessment of an individual's present knowledge is not nearly as revealing as an assessment of that individual's potential so in dynamic assessment determining potential performance is more emphasized than assessing typical performance. To contrast dynamic and non-dynamic assessment Sternberg and Grigorenko (2002, p. vii) define dynamic assessment as a procedure whose outcome takes into account the results of an intervention. In this intervention, the examiner teaches the examinee how to perform better on individual items or on the test as a whole. The final score may be learning score representing the difference between pre-test (before learning) and post-test (after learning) scores, or it may be the score on the post-test considered alone.

In formal approaches to non-dynamic assessment, on the other hand, the examiner presents items, either one at a time or all at once, and each examinee is asked to respond to these items successively, without feedback or

intervention of any kind. At some point in time after the administration of the test is over, each examinee typically receives the only feedback he or she will get: a report on a score or set of scores. By that time, the examinee is studying for one or more future tests (Sternberg and Grigorenko, 2002, p. vii).

Non-dynamic assessment is to make decisions on static, one-time scores alone (Wiedl, Guthke & Wingenfeld, 1995). It is limited because it does not directly aim at making learners independent knowledge constructors and problem solvers (Johnsson, Mattheos, Svingby, & Attstrom, 2007). According to Sternberg and Grigorenko (2002), in non-dynamic assessment the items are presented to the examinee who expected to answer successively, without taking any kind of feedback or intervention. Later in the future the examiner receives an individual score or a set of scores as the only provided feedback and by that time, the examinee is already studying for one or more future tests. So in non-dynamic assessment approach the change in the learner's level of ability would have likely go undetected. It is only through cooperating with the individual that his/her ongoing maturing understanding can be understood. Dynamic assessment, as a result, presents a more fine-grained understanding of learners' abilities than non-dynamic assessment.

Dynamic assessment and non-dynamic assessment refer not to assessment instruments but to administration procedures; in fact any test can be conducted as dynamic or non-dynamic. The common misconception among many teachers and researchers is; however, considering portfolio or other alternative assessments as only way of applying dynamic assessment in the language classroom. But in fact these assessments if applied in an interactive way can only be examples of dynamic assessment. So reducing the methodological applications of dynamic assessment into one or some specific testing instruments is misunderstanding the underlying theory of dynamic assessment. To support this idea Lantolf and Thorne (2006) state that what makes a procedure dynamic or not is whether or not mediation is incorporated into the assessment process. In other words, fill-in-the-blank, multiple-choice, open-ended essay, or even oral proficiency tests in themselves may or may not be dynamic. Their status is determined by the goal of the procedure and the format in which it is subsequently administered. In other words, there are no dynamic assessment instruments per se; there are only dynamic assessment procedures.

So it is better not to limit the vast area of dynamic assessment to a specific test instruments and have in mind that any test taken interactively can be considered as dynamic. That is to say the core characteristic of widely varying methods of dynamic assessment is their use of an interactive procedure in which the examiner provides guidance, encouragement, and feedback in an attempt to elicit the best performance (Haywood & Lidz, 2007).

Dynamic assessment and non-dynamic assessment cannot be placed on a single continuum because they differ both ontologically and epistemologically. Non-dynamic assessment conceives of assessment and instruction dualistically and is intended to profile, or even measure, abilities in their current state. Dynamic assessment offers a monistic view of assessment and instruction that focuses on developing abilities through intervention (Lidz, 1991). Lidz and Gindis (2003) believe that these differing philosophies have profound implications for assessment practice. Dynamic assessment presents a qualitatively different orientation to assessment and instruction from non-dynamic assessment by presenting the process and not confining itself merely to the product. Also it intends to recognize and evaluate specific instructional strategies of learners, provide them with adequate environmental support to remedy learning deficits and also take the greatest advantage of learner's potential to succeed under these conditions.

2.2 EFL Studies on Dynamic Assessment

Although theoretical framework of dynamic assessment was proposed by Vygotsky, he did not present any methodological guidelines for its application in real educational settings. There is a robust research literature on dynamic assessment in general education and psychology, however, the approach is relatively unknown or at least new in second/foreign language studies.

Nassaji and Cumming (2000) aimed to provide a case-study account of features of the ZPD in language teaching and learning. They analyzed 95 exchanges in interactive dialogue journals written over 10 months between a 6-year-old Farsi speaker beginning to learn English and his Canadian teacher and showed how the teacher and student constructed and sustained a long-term written conversation involving intricate patterns of complementary, asymmetrical scaffolding. They emphasize the value of analyzing language learning and teaching as integrally unified, interactive phenomena. Using an analytic scheme that highlights the functional dimensions of interpersonal communication, they showed different patterns in the written exchanges between the teacher and student that sustained – in a complementary, dynamic, and evolving manner over nearly a year – conditions for an ESL student's learning English literacy, scaffolded by his teacher. In the process, the learner came to appropriate aspects of English that he personally determined were worth expressing, while the teacher

contributed to and edged him forward in this process, engaging with his written accomplishments and at the same time herself coming to understand better the student and his personal concerns and abilities.

Anton (2003) in her study applied a dynamic assessment procedure for placement of L2 Spanish undergraduate students. She explains that dynamic assessment is more appropriate for placement purposes because it sheds light on students' developing abilities rather than focusing solely on developed ones which is done by non-dynamic assessment. She believes that using dynamic assessment procedures makes the placement become more accurate because a complete picture of the abilities is presented. So important hidden differences among students become vivid which is a proof of the validity of dynamic assessment.

Anton asked the participants of her study to orally narrate the movie they had watched and her main emphasis was on the correct use of past tense in narrations. She applied interactionist approach by interrupting the narrations to provide hints and guidance whenever needed in order to give them the opportunity to revise their performance in appropriate ways. The researcher presented interesting and useful parts of the protocol to show a vivid picture of what had gone during the assessment session. Some students couldn't take the advantage of interventions which reflected that the structure of past tense is neither developed nor developing in them. They were consequently and appropriately taken as lower in proficiency than those who applied correct form of past tense after the mediation which showed the structure was in their ZPD and they were about to internalize it. The latter group was placed higher in proficiency level.

Anton argues that if she had applied non-dynamic assessment procedures and had done the placement based on the students' solo performance the ability of the second group of students would be underestimated because as Vygotsky describes the difference between two children's abilities can be truly manifested only through interaction, and the depth of the individuals' understanding becomes clear only after mediation.

She didn't limit her research to this point and studied the abilities of the second group learners in transcending to new situations. She observed that while some of them could use the intervention to provide the correct answer, they were unable to apply the points in that intervention to other similar problems. The interventions of her study were not limited just to past tense and included other grammatical points as well as some lexical ones.

In another study, Antón (2009) also examined the usefulness of DA with university students. She implemented DA with third year Spanish majors on the speaking and writing portions of a diagnostic test. She concluded that DA resulted in a deeper understanding of students' abilities.

Unfortunately most of the studies reviewed didn't include their protocols in their reports and a vivid picture of what they have done in their research was not gained. The only researcher clearly presenting his study protocols was Poehner (2008) whose study can provide useful insights for those interested in dynamic assessment studies. He specified a whole chapter of his book to detailed report of mediator-learner dialoguing of his study on advance level adults learning French as their foreign language. He played different parts of an English movie to the participants. The movie was in English to make sure that all these English speaking participants have a thorough comprehension of it. First, learners constructed an oral narrative in the target language after watching a short video clip, they received no mediation in the first task. Then they were shown a second clip from the same story but this time to improve the speaking ability of these French learning they received hints, leading questions, suggestions, and explicit feedback when constructing their oral narratives. The assessment which focused on the performance differences between the first and second tests were used as the basis for an individualized instructional program in which participants were tutored in areas that had been identified during the dynamic assessment sessions as needing special attention. This study was done as his Ph.D. dissertation and the result was published in his book in detail.

Poehner (2008) also assessed university students' ability to correctly decide between and conjugate the imparfait and passé compose in French when narrating a movie. He offered mediation tailored to the needs of his students in both a near and far transcendence task and concluded that using DA provided insight into the source of students' errors. He also concluded that the mediation resulted in improved understanding of these two tenses and aspect for the students.

In another study Poehner (2005) introduced a reconceptualized formative assessment according to the principles of dynamic assessment. He argued that formative assessment is not necessarily low stake and can be carried out quite systematically. In comparison with summative assessment it can reveal more systematic results based on the learners' development.

Another researcher Ableeva (2008) also used DA with university students learning French. She aimed at promoting development of listening comprehension skills and found that the differences in learners' difficulties

on an assessment revealed their unique ZPDs, which is not revealed on the non-dynamic pre-test. According to her employing DA in reading and listening comprehension classroom makes it possible for both learners and their teachers to identify the probable sources of problems that might hinder text comprehension. Fuchs et al. (2008) also emphasize that ZPD can be indicative of individual differences of those with similar low score.

Lantolf and Aljaafreh (1995) examine the interaction between adult ESL learners and a non-native, but more expert, tutor. Learners progressed in the ZPD through developmentally sensitive assistance in tutoring sessions. The emergence of a ZPD through pair-work resulted in performance at a higher level of competence for both students because a learner performs above his/her level of individual competence in the ZPD with the assistance of the peer and as the learner acts with increasing independence development occurs.

Birjandi, Daftarifard, and Lange (2011) investigated whether it is possible to distinguish the quantitative and qualitative effects of dynamic assessment on the items and persons. They used two types of Rasch scaling to scale sets of wh-type questions and scanning items. The data gathered from 42 Iranian university students showed the anticipated quantitative improvement in learners' performance on the posttest relative to the pretest—for the wh-type questions as well as for scanning items. But clear qualitative effects were not found, because the item and person hierarchies were almost the same for the pre- and post-tests. The rating scale formulation proved to be a useful measure of ZPD as it proved to be a proper tool of capturing the pre- and post-test data simultaneously.

Lantolf and Poehner (2011) examined how a K-5 Spanish teacher implemented dynamic assessment with a large group of students simultaneously. Before this study dynamic assessment was mostly used individually with one mediator and only one learner. They incorporated dynamic assessment into daily lessons without changing instructional objectives or curricular goals by teaching within the ZPD of students to promote development of subject/adjective agreement in Spanish and gained positive results in promoting the group's ZPD.

Xiaoxiao and Yan (2010) in their case study on dynamic assessment of EFL process writing presented a simple framework or a process for English writing instruction based on the principles of dynamic assessment. Results of applying their framework revealed that the dialogic way of teaching is of great help in enhancing learners' writing interest and improving their writing competence.

2.3 Dynamic Assessment Studies on Reading Comprehension

In a very interesting piece of research Kozulin and Grab (2002) applied an interventionist format of dynamic assessment to assess the reading comprehension ability of ESL learners. They sandwiched their mediation phase between a non-dynamic pre- and post-test. They used a short reading text and a set of comprehension questions as a pre-test. In the next stage they trained the teachers to correctly mediate the learners in responding comprehension questions of other texts. They provided the necessary hints, guides, and suggestions to inform the learners how to apply different strategies to answer the various comprehension questions and how to transfer these strategies to other similar tasks. The mediation's focus was on general comprehension strategies applicable to various texts regardless of the vocabulary range or grammatical structure of specific texts. The main point about their study is their focus on developing learners' reading comprehension ability rather than solely aiming at successful task completion. At each mediation session learners were provided with four other texts and series of questions to practice transferring their developed abilities on applying these strategies.

These researchers devised a formula called Learning Potential Score (LPS) to calculate the difference between pre- and post-test scores. This is very similar to Budoff's gain score. They argued that this score provided a more complete picture of the students' ability than merely focusing on the final achievement tests in reading. According to the results, the obtained negative high correlation between pretest and posttest score of DA group indicates that pretest cannot be a good predictor of learners' potential in further academic achievement. Although these researchers presented their findings neatly via this formula and revealed a gain in their participants from pre-test to post-test, complicated issues and processes of dynamic assessment is better presented in qualitative studies and clear reports of protocols and presenting the mediator-learner dialoguing in their research reports which was not included in their research paper. In other words, reading their report one cannot imagine what exactly has gone during the mediation sessions what were the specific supports provided to the participants leading to their development.

In another study Naeni and Duvall (2012) used a mixed method to study the improvements in reading comprehension performance of 10 university students by applying the mediation of dynamic assessment approach to instruction and assessment. Their study like the previous one had pre-test, mediation, post-test design. The mediation phase of their study included three intervention session each on one particular reading comprehension subskill among three which were finding the main idea, inference, and finding out the meaning

of unknown words. Their findings reveal significant improvement in the reading comprehension performance of the participants after the mediation. Although these researchers presented scripts from the mediation sessions in quantitative part of their study, the number of extracts all limited and present only a partial picture of the whole process where as the qualitative part of the study by nature requires a deeper presentation of the mediation sessions and a thorough interpretation of the hints and learners reaction to them. The quantitative part of the study is so small in scale that can't be considered as a scientific study. Because comparing the number of correct answers for three reading comprehension sub skills in pre- and post-test of ten participants can not be so revealing. It would be better if the researchers had increased the number of participants in quantitative part of their study and had provided a deeper and more detailed analysis of qualitative part of their study.

Ajideh, Farrokhi, and Nourdad (2012) in a qualitative study assessed the reading ability of 9 EFL learners in three high, mid and low proficiency levels during five weeks. The results revealed hidden aspects of stage and source of error, and extend of development and transcendence.

Limited number of studies mentioned above with all the promoting results imply that more studies are needed in the field of language learning in order to better understand the effects of dynamic assessment on language learning, and in order to provide more guidance to language teachers who wish to use dynamic assessment in their language classrooms. Considering the ideas discussed on dynamic assessment and its fundamental differences with non-dynamic assessment the present study intended to find out whether these two approaches differed in assessing the reading comprehension ability of EFL learners or not, and whether it had any positive outcome just after the dynamic procedures or not. That is whether the EFL learners were able to transfer the hints and supports provided to them by mediation during dynamic sessions to other context which lacks such a support like non-dynamic assessment session, and whether they were able to retain the provided support and take advantage of it after some time interval in non-dynamic procedures. In line with these points the following research questions were raised.

1. Is there any difference between dynamic and non-dynamic assessment of EFL reading comprehension ability?
2. What is the immediate effect of applying dynamic assessment of EFL reading comprehension ability?
3. What is the delayed effect of applying dynamic assessment of reading comprehension ability?

In fact the present study investigated the effectiveness of dynamic assessment in improving the reading comprehension ability of EFL learners in comparison with non-dynamic assessment and it also wanted to find out whether the effect of dynamic assessment is in short term or remains in long terms as well. Based on these research questions the following null hypotheses were formulated:

1. There is no difference between dynamic and non-dynamic assessment of EFL reading comprehension ability.
2. Applying dynamic assessment has no immediate effect on EFL reading comprehension ability.
3. Applying dynamic assessment has no delayed effect on EFL reading comprehension ability.

2. Method

2.1 Participants

197 male and female Iranian university students participate in this study. The sampling was convenience sampling.

Due to ethical issues the students were informed to be included in research study. The general aim of the study was explained to the participants in experimental group to reduce the stress during the assessment sessions and prevent any cheating or guessing the answer for a better score. The researcher didn't go into details of purposes to prevent the sources of data pollution such as Hawthorne effect.

2.2 Instruments

To gather the data needed for the study the researcher applied two different data gathering instruments at various stages of the study including an international proficiency test and standardized reading comprehension tests.

Proficiency Test

A 90-item BPT TOEFL test was used to measure the proficiency level of the participants. TOEFL tests are among the most common and standardized EFL proficiency tests worldwide and the researcher wouldn't doubt their validity and reliability.

Reading Comprehension Tests

9 reading comprehension tests each including a passage followed by 20 multiple-choice questions were used for

pretests, immediate posttests and delayed posttests of the groups in three proficiency levels of high, mid, and low. The tests were taken from books published by National Organization for Educational Testing which holds national university entrance exams in Iran. The questions were taken from these series to solve the problem of test validity and reliability. The total number of items in some cases exceeded 20 but to have consistency in the procedures the researcher omitted the extra questions to have a fixed number of 20 items for all tests. To prevent any kind of bias the omitted items were selected randomly before reading the questions.

2.3 Procedures

The participants were divided into two groups of experimental and control and were given the TOEFL test and later the pre-test. These tests were conducted in non-dynamic way as Iranian students were familiar with. As it was expected the results of a t-test revealed that there was no significant difference between control and experimental groups. While the participants in control group continued their normal class procedures until the post tests the participants of experimental group underwent 5 dynamic assessment sessions before the post-tests. Each assessment was done in separate weeks and to meet the conditions of dynamic assessment the researcher did her best to provide the necessary assistance and guidance appropriate for test-takers' ZPD. Due to large number of students in classes it was not possible to apply interactionist model of dynamic assessment that is to have mediated dialogues with individual participants to provide the needed support for their development. The selected model was, therefore, interventionist approach. That is the mediator, also the researcher in this study, provided the same hints for all learners but to adjust it to their ZPD the hints were provided from the most implicit to the most direct and explicit. The total number of hints was three for each test item and since the speed of individuals and also their level proficiency in each class differed the researcher provided the hints as written mediation forms. The number of test item was identified in these forms, and under each item three hints were presented as A, B, and C. To have consistency between groups the hints were presented in Persian, the official language of Iran, because it would be impossible to have English hints for low level participants. The students had to write their names on top of these forms and check the hints they had used. This would specify which hints were useful for each participant. If the test-taker couldn't answer the item correctly after reading all the three hints it would mean that the scope of the question is beyond his/her ZPD. That is that ability is neither developed nor developing in cognitive system of the individual so neither of independent or collaborated performance is possible at that time. If the hints helped them to answer the item it was concluded that the ability was developing for them.

To see whether the dynamic assessment procedure led into any development in participants, they took part in the first post-test. The post test was for all the participants and the procedures were non-dynamic. To observe the effect of dynamic assessment and to make the scores as reliable as possible the researcher avoided any help in that test session and the test takers of experimental group had to resort to their previous experience of taking dynamic test and get help of the key points of those sessions and show how much they had learned from those dynamic session. Students in control group took the test as usual because they were already familiar with and used to non dynamic tests. To realize the amount of the immediate effect of dynamic tests the scores of control group and experimental group were compared.

But the study was not limited to this point and another new step in the related literature was taken. For finding out about the delayed effect of dynamic tests, test takers were called for the second post-test test after five weeks to measure their ability in transferring the developed abilities into new items after some time, and the same testing procedure and statistical analyses were repeated with different reading tests and comparisons were made between control and experimental groups to realize any probable delayed effect of dynamic assessment.

2.4 Design of the Study

The present study included pre-test and post-test as well as control and experimental groups. But since the selection of the two groups (control and experimental) couldn't be done randomly due to the limitations explained in the procedures section the design of this study was quasi-experimental.

3. Results

In order to make sure that there was no significant difference between experimental and control groups at the beginning of the study an independent t-test was used. Table 1 shows the result of this independent t-test.

Table 1. Independent Samples T-Test for equality of groups

| Study groups | N | Mean | Standard deviation | Df | T | P |
|--------------|----|-------|--------------------|-----|-------|------|
| Experimental | 99 | 13.07 | 4.207 | 195 | -.101 | 0.05 |
| Control | 98 | 13.13 | 4.392 | | | |

As shown in Table 1, the results of the t-test revealed that there was no significant difference between the mean score of the two groups at the beginning of the study ($t=-.101$, $p<.05$). So the experimental and control groups didn't differ statistically before the intervention and could be logically compared at the next stages of the study.

In order to control the first null hypothesis and answer the first research question the mean scores of immediate post-test for both experimental and control groups were compared using an independent samples t-test.

Table 2. Independent Samples T-Test for comparing DA and NDA

| Study groups | N | Mean | Standard deviation | Df | T | P |
|--------------|----|-------|--------------------|-----|-------|------|
| Experimental | 99 | 16.53 | 2.496 | 195 | 7.156 | 0.05 |
| control | 98 | 13.08 | 4.078 | | | |

As presented in Table 2 after intervention the mean score of experimental group ($M=16.53$) was larger than the mean score of the control group ($M= 13.08$). And the result of the t-test indicated that the difference between the mean scores of these two study groups was statistically different ($t= 7.156$, $p<.05$). That is to say the first null hypothesis indicating that "There is no significant difference between dynamic and non-dynamic assessment of EFL reading comprehension ability." was rejected and it was inferred that dynamic and non-dynamic assessment of reading comprehension ability of EFL learners differed greatly and dynamic assessment of reading ability led to an increase in the scores of the participants.

At the next stage of the study for verifying the second null hypothesis a paired-sampled t-test was calculated to evaluate the immediate impact of the intervention on participants' reading comprehension ability scores. The t-test compared the mean score of the experimental group before and after the mediation of dynamic assessment. Table 3 shows the result of this paired t-test.

Table 3. Paired T-Test for immediate effect of DA

| Study scores | N | Mean | Standard deviation | Df | T | P |
|---------------------|-----|-------|--------------------|-----|--------|------|
| Pre-test | 197 | 13.10 | 4.289 | 196 | -7.331 | 0.05 |
| Immediate post-test | | 14.81 | 3.785 | | | |

As shown in Table 2, the mean score of the experimental group had increased from pre-test ($M= 13.10$, $SD= 4.289$) to immediate post-test ($M=14.81$, $SD=3.785$). And as Table 3 presents the result of paired t-test indicated a significant difference between the mean score of the experimental group before and after applying dynamic assessment ($t=7.331$, $p<.05$). So the second null-hypothesis indicating that "Applying dynamic assessment has no immediate effect on EFL reading comprehension ability." was rejected. Consequently it can be concluded that implying dynamic assessment was useful and caused a significant increase in the reading comprehension scores of the participants. But there was much to research than simply finding statistically significant differences. Effect size statistics provide an indication of the magnitude of the differences between mean scores. Eta squared formula was used to calculate the effect size for the paired-samples t-test.

$$\text{Eta squared} = \frac{t^2}{t^2 + N - 1} = \frac{(-7.331)^2}{(-7.331)^2 + 196} = 0.215$$

Eta squared can range from 0 to 1 and represents the proportion of variance in the dependent variable. The guidelines for interpreting obtained value are as following: .01= small effect, .06= moderate effect, .14= large effect. Based on these guidelines the results of Eta squared in this study revealed a large effect (Eta squared= 0.215). That is to say dynamic assessment's immediate effect on reading comprehension ability of the

participants was quite large.

After making sure that dynamic assessment proved to be useful for the participants just after the mediation, at the next stage of the study the mean score of the experimental group after some time interval was calculated to check whether the positive effect of dynamic assessment had remained over time or faded away. So the mean score of the experimental group at the immediate and delayed post-test were compared using a t-test. Table 4 shows the result of this second paired t-test.

Table 4. Paired T-Test for delayed effect of DA

| Study scores | N | Mean | Standard deviation | Df | T | P |
|---------------------|-----|-------|--------------------|-----|-------|------|
| Immediate post-test | 197 | 14.81 | 3.785 | 196 | 2.734 | 0.05 |
| Delayed post-test | | 14.28 | 3.454 | | | |

As shown in Table 4, the mean score of the experimental group had decreased from immediate pre-test to delayed post-test. And as Table 4 presents the result of paired t-test indicated not a significant difference between the mean score of the experimental group after this time interval ($t=2.734$, $p<.05$). So the third null hypothesis indicating that “Applying dynamic assessment has no delayed effect on EFL reading comprehension ability.” was safely rejected and it can be concluded that time interval after dynamic assessment didn’t caused a significant decrease in the reading comprehension scores of the participants. And dynamic assessment had a relatively remaining effect after the time interval although the mean scores had decreased a little.

4. Discussion and Conclusion

The present study aimed at investigating the difference between applying dynamic assessment and non-dynamic assessment for reading comprehension ability of EFL learners and also the immediate and delayed effect of dynamic assessment. The results of the study revealed a significant difference between dynamic and non-dynamic assessment with a statistically significant increase in the reading comprehension scores of the group being assessed dynamically. The findings were in line with the findings of some similar previous studies such as Kozulin and Grab (2002), Poehner (2008), Albbeva (2008), Birjandi, et al. (2011), Pishghadam, et al. (2011), and Naemi and Duvall (2012). All these mentioned studies like the findings of the present study revealed that dynamic assessment improved the abilities of participants in reading comprehension or other skills under investigation. The findings of the present study also presented the existence of not only immediate but also delayed effect of dynamic assessment on reading ability of the participants.

In fact dynamic assessment with its monistic view toward teaching and testing not only assesses the learners’ abilities but also provides them with opportunities for learning and development. This in turn has some positive results both for teachers and learners. First it helps students to take the advantage of mediation provided by the assessor and become autonomous in doing similar tasks later on. Secondly, it leads into positive washback effect because it makes testing and teaching aims and procedures in line with each other and interwoven. Both of the issues of learner autonomy and washback effect are currently of great importance and under investigation in EFL. Thirdly, applying dynamic assessment gives the chance of being mediated for learners with results in reduced stress. In some learning contexts such as Iran where test scores are very determining for students stress in exam sessions is considered as a major test score pollution source. Consequently test scores unaffected by stress factor can be more accurate for educational decisions. So it can be concluded that dynamic assessment result in presenting a true picture of the abilities which is the first and the most important aim of assessment. And finally dynamic assessment of learners’ abilities can avoid misinterpretations and misrepresentations of the abilities because dynamic assessment unlike traditional non-dynamic assessments presents learning potential of the learners because it sheds light on both current status of the learners and their hidden potential in the zone of proximal development after removing hindering factors.

All in all it can be concluded from the finding of this study that there is great difference between assessing reading comprehension ability of EFL learners dynamically and non-dynamically, and that dynamic assessment leads in increased reading comprehension ability and this improvement is not short-term and can remain after some time interval because learners take advantage of the mediation on their ZPDs.

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