# Dynamic Assessment of Grammar with Different Age Groups

Masoud Zoghi* and Elham Malmeer

*Department of ELT, Ahar Branch, Islamic Azad University, Ahar, Iran*
*Department of English Teaching, Science and Research Branch, Islamic Azad University, Kermanshah, Iran*

*E-mail: m-zoghi@iau-ahar.ac.ir

## ABSTRACT

This study intended to explore the effect of an interactionalist model of dynamic assessment (DA) on Iranian EFL adult and teenage learners' grammar performance. To this end, 80 students were selected based on the convenience sampling procedure and assigned into teenage (n= 40) and adult (n= 40) groups. An interactionalist model of DA was implemented in both teenage and adult groups. The data obtained from the pre-test and post-test scores were analyzed by a series of paired samples t –test and independent sample t- test. The results indicated a significant difference between the pre-test and post-test mean scores of the grammar test. It is concluded that the adult EFL learners benefits from DA more than the teenage EFL learners.

**Key words:** Dynamic assessment, Teenagers, Adults, Grammatical ability

## INTRODUCTION

What every language teacher has to know is that every step taken should be toward helping the learners to gain more, not to confuse them or put any destructive stress on them. These steps extend from teaching to testing. Recent views and works in the area of second language learning have tried to bridge between teaching and testing so that they are not separated from each other anymore. The question is how we could build this bridge. Fortunately the material has been made ready. "Dynamic Assessment" is the one that we need to make our bridge with. The term Dynamic Assessment, quit unfamiliar to Iranian EFL learners and teachers, has been rooted in Vygotsky work on his ZPD theory. Vygotsky (1998) in his study on the actual and future development of the children ability found that a two year old child, helped, can have the ability that a seven year old might have.

Although precious works have been done on the application of DA on foreign language learning (Zoghi and Malmeer, 2013; Ableeva, 2007; Lantolf and Poehner, 2004; Poenher, 2008; Sternberg and Grigorenko, 2002); but there doesn't seem to be a work on the effect which DA might have on grammar and more specifically on learners with different group ages. DA has been proved to have a positive effect on listening, Ableeva (2007), and reading, but there hasn't been studies on its effect on grammar and more specifically these studies mostly have been done on adult learners, but As this theory first evolves on the observation of very young children, the question is: will DA influence young learners the same as it may affect the adult learners? Finding the answer to this question may help the EFL teachers to decide on the implementation of DA procedure in their classes regarding which age group they are dealing with and if FL learners could benefit DA while learning grammar. This research reports on the implementation of Dynamic Assessment to grammar learning. The interventionist model of DA adapted here allowed grammar assessment from a new perspective, something which is beyond the limitation of traditional ways of assessing. And it will also look at the effect of DA in SLL from a new angle by considering the age factor in the research.

The main goals of the research are to investigate the effects of DA on the EFL learners' grammar skill and the amount of effect that DA might have regarding learners age parameter. These goals are realized through the following hypotheses: 1. DA can influence Iranian EFL learners' grammar skill.2. There is significant difference between teenagers and adults amount of achievement when a DA procedure is implemented, regarding the age factor. The answers to the hypotheses would be addressed both qualitatively and quantitatively in the following sections.

### Theoretical basis of dynamic assessment

The ZPD introduction by Vygotsky was a step toward understanding the process of cognitive development and it's supporting. Mediation and internalization are two interrelated constructs in this theory. According to Vygotsky (1986), individuals are always mediated by social practices, cultural interferences and activities. Even when they are working alone their cognitive functions are being mediated by their history of interaction with the world. In other words as a new cognitive function is processing, the original abilities resides in one's mind reemerge to interfere with the new brain function. Therefore external environment is not the only source of mediation and the individual is

quite able to self-mediate or in Vygotskey's term self – regulate whether consciously or subconsciously. Each individual has got two levels of performance; a full development and proximal development. To see what functions are being fully internalized one can observe a person performance when it's done alone. But only through external forms of mediation we would be able to see the abilities that are still forming. Vygotsky was against measuring one's ability on the basis of his solely performance. What he tries to show in his favorite example on the two seven-year old children was to show how misleading the assumption of measuring an individual performance of a person could be. He explained that when the two children were helped whether by hinting, asking leading questions or the other forms of assistance they reacted differently, so they achieved different results. One of the children progressed to the level of 7.5 year old and the other to the level of 9 year old. By this experiment Vygotsky concluded that the independent performance of the individual is a mask on their real performance. As he state it, "from the point of view of their independent activity they are equivalent, but from the point of view of their immediate potential development they are sharply different" (Vygotsky, 1986). Since the introduction of ZPD, more and more researchers came to the idea that assessment is a relative concept and ones individual performance is not a clear cut index of his real ability. Therefore the idea of integrating mediation into assessment for a better understanding of one's ability was emerged (Sternberg and Grigorenko, 2002). Later on Vygotsky argued that individuals past achievement is not a valid principle to predict their future performance. In Feuerstein term the goal of DA is to help the learners to construct a better future by intervening appropriate modifying strategies.

### Dynamic assessment vs static assessment

The term dynamic assessment for the first time was introduced by Luria (1961), Vygotskey's colleague, and later on was compared with static assessment by Reuven Feuerstein (1979). Dynamic assessment and none dynamic assessment are fundamentally different testing methods. As McNamara (2004) puts it, "NDA is a process of gathering information about test takers from observed performance" (p.766). He continued with explaining that this process include observing testes under assessment condition and make inferences about their underlying abilities in order to make statements about their probable performance in a Non-assessment situation. Bachman (1990) states that testers must take great care to model abilities such as language proficiency to the extent that one could claim that the assessment is an index of the individual true ability. But in a NDA the abilities will be affected due to the assessment means and the testing context McNamara (2004). In NDA, this interference is highly problematic because what NDA relies on is a strict procedures for a kind of interpretation from the test results which are predicated on the assumption that the abilities are not changing during the testing procedure (Glutting and McDermott, 1990). Accordingly assessors are able to describe the individual amount of ability using numbers (e.g., scores, percentile ranking, percentages). In a DA the instructor works continually in order to alter both tasks and mediation to engage the learner's ZPD. DA follows Vygotskey's principle that the basic responsibility of a education is not to document the problems in an individual's process of learning but to discover the underlying process for the poor performance to help the learners in setting new developmental trajectories. So the active role taken by the examinee during the testing situation is a core difference between DA and none DA. As Vygotsky (1998) states it the results of conventional assessment models look like an empty medical diagnosis in which a doctors' job is merely restating the patients 'known problem in a scientific term (p.205). As Vygotsky believe this kind of diagnosis is unacceptable and must be changed with a kind of "True Diagnosis" something that includes "an explanation, prediction and scientific basis for practical description" (p.205). DA tries to do that therefore the conventional and traditional terms applied in NDA procedures such as generalizability do not apply in DA.

### Major contributions
#### Interventionist versus Interactionist Approaches to DA

Interventionist and interactionist are two general approaches to DA. In an interventionist model, the standardized mediation allow the greater use of inferential statistics in analyzing and computing results; in interactionist model mediation is attuned to the individuals amount of responsiveness thus it is more sensitive to the ZPD. The basic difference between these two orientations is that interventionist model tries to gain "an index of speed of learning" (Brown and Ferrara, 1985, p. 300) quantifying the amount of help required for the learner to reach the pre-specified end point. Interactionist focuses on the individual development without considering the effort required or having any attention to the end point of development.

**A) Interventionist DA:** The instructor using an interventionist DA could use either a "sandwich" or a "cake" model (Sternberg and Grigorenko, 2002). In the sandwich model no mediation is offered during the assessment but instead a training phase is introduced between a traditional pre-test and post-test. An Individual performance is reported using pre training score, post training score and post training score adjusted for pre test level. The results could be used in specifying three groups: A) high scorers: those whose pre-training scores were already high and therefore do not manifest much improvement as result of training, B) Gainers: those whose scores showed marked improvement as result of training and C) nongainers: those who performed poorly on the pre-test and didn't profit from the instruction. In the second form of the interventionist DA, cake model, mediation is provided to the examinee which is drawn from a standardized menu of hints, including both implicit and explicit. The scores are the reported results that are based on the amount of the prompts provided to the examinee and the amount of time taken to complete the test.

**B) Interactionist DA:** As was discussed above the interventionist DA, has a strong propensity toward quantification and psychometric analysis, interactionist approaches care for "qualitative assessment of psychological processes and dynamics of their development" (Minick, 1987, p.119). As Vygotsky believe and put it

in several ways that we must not measure the child, we must interpret the child and to achieve this goal we have to interact and cooperate with the child (Vygotsky, 1998, p.204). One of the pioneers in this field is Reuven Feuerstein (Feuerstein et al., 1988). He believes that the traditional concept of having two extremes having an examiner on one side and the examinee on the other side- in the testing context could not be accepted anymore. What instructor has to focus more is a kind of teacher-student relationship in which both are working to have successful students. He argued that a "mediated learning Experience", (MLE) is at the heart of the process. Here an adult mediate carefully by selecting, scheduling, and repeating the a culturally based Stimuli in order to make sure that in certain ways the relations between certain stimuli is experienced( Feuerstein, Rand, and Rynders , 1988, p.56) .

### Zone of proximal development:

Vygotskey's socio-cultural theory has two major features. The first, as it was mentioned is about the role of interaction in development. A second aspect of Vygotsky theory is the idea that the capacity for cognitive development depends upon the "zone of proximal development" (ZPD). Vygotsky (1978) defines ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). It, then, predicts the future development not a priori level. Poehner and Lantolf (2005) believe that "DA is very much in line with future-in-the-making models of development" (p. 237). As called for in Vygotskey's ZPD, assessment and instruction should be integrated as the means to move towards an always emergent (i.e., dynamic) future, rather than a fixed and stable steady state (ibid). Thus, it can be proposed that while static tests focus on the performance belonging to ZAD, DA tries to measure the emerging abilities which are not still fully developed and do not belong to the existing knowledge repertoire.

### Approaches to dynamic assessment

DA is based on the Vygotskian notion of ZPD which captures the uniquely human potential to exceed beyond present capabilities in cooperation with others whose dialogic interaction mediates us to higher levels of functioning (Poehner, 2008). He adds that currently there a number of approaches and methods that fall under the umbrella term of term of DA. This is due to the fact that mediation can be implemented in a number of ways. But, According to (Lantolf and Poehner, 2004) there are two general approaches to DA, interactionist and interventionist.

### Empirical studies on L2 dynamic assessment

In their comprehensive review of application of DA to educational settings Haywood and Lidz (2007) assert that "Campion and Brown (1987) have been pioneers in their attempts to assess specific academic domains in the framework of DA" (p. 77). Lantolf and Thorne (2006) believe that the entire body of research in this new avenue of research includes only few studies that focus on L2 learners or bilinguals. They begin their review with the work of Pena and Gillman (2000) (as cited in Lantolf and Thorne, 2006) who investigated the children's reasoning through DA. The second study which they refer to is that of Anton (2003) which uses DA as a placement procedure. Participants were asked to construct orally a past-tense narrative after watching a short video clip. This time the learners received no feedback or mediation. They were then shown a second clip and asked to repeat the task, but this time with the help of a mediator who offered suggestions, posed questions, made corrections and helped them think through decisions making. After approximately six weeks of instruction, the participants were re-administered the original independent and mediated narration tasks in order to cheek their progress. Poehner (2008) also conducted a series of extensive DA case studies examining oral proficiency among advanced undergraduate learners of French. Another study is that of Kouzlin and Grab (2002) which is about the EFL reading comprehension of adult at-risk immigrants. The results of their study indicate that the procedure is both feasible and effective in obtaining information on students" learning potential. It is confirmed that students with a similar performance level demonstrate different, and in some cases dramatically different ability to learn and use new text comprehension strategies. One interesting aspect of their work is the manner in which they report the outcomes of the DA procedure. Rather than generating a qualitative report of each learner's performance for all stages of the study, they presented the learners 'abilities with a single score which they themselves called Learning Potential Score (LPS) which is the difference between the learners' pre-test and post-test scores.

## Method

### Participants

The three phases of the sandwich model of DA was conducted with 80 EFL learners in Iran Language Institute (ILI) in Kermanshah, Iran.40 from the adult department( ranging in age from 20 to 40) and 40from the teenager( ranging in age from 13to 19) department. All participants had been learning English for a year as a foreign language. And they were mainly university students or school students and were studying English for the purpose of finding a better job or achieving higher degrees in their course of education. They were studying ILI book series for improving their language proficiency. They had classes two times a week for 25 sessions.

### Design

The design of the study as Zoltan Dornyei (2007) named it is 'one group pre-test- post test design'. The researchers want to try out the impact of DA Sandwich model on Iranian teenagers and adult learners. As Zoltan

Dornyei (2007) maintain "in most educational settings random assignment of students by the researcher is rarely possible" therefore we have to resort to intact classes. 40 learners from teenager department and 40 learners from adult department were chosen. The design of the study is based on a Sandwich model which was introduced by Sternberg and Grigorenko (as cited in Poehner, 2008). According to Poehner (2008) a mediation phase is sandwiched between pre-test and post-tests that are administered in a non-dynamic manner. The mediator, who is the teacher in this research, helps the students with their wrong answering in the pre- test and does her best not to reveal the answer directly but to provide them with proper hints .Then there would be another test which is a post test. Post tests reliability has been confirmed using a parallel test given to the learners. The performance on the post test can then be compared to that of the pre-test in order to decide how much improvement has been made.

### Instruments

Different grammar tests were used in this study. To be sure about the reliability of the results, parallel tests were given to the participants in all groups in pre-test and post-test.

### Materials

For the purpose of data collection on the students' ability in English grammar the teacher used the exercises on the students ILI students' books and workbooks and exercises from the grammar in use book series, and some of the exercises were chosen from the top notch teacher manual as well.

### Procedure

As the researchers are quite familiar with the ILI manager and clerks , they would asks them for allocating four classes to them two from the teenager's department and two from the adult's department. they would even asks them to equate the number of students in each class 20 in each for the purpose of having an equal sample size in each department in order to be able to compare the mean scores of the groups. The classes were 25sessions in a term and the researchers implement the three stages of DA in the 22nd, 23rd and 24th session of classes. Two equal tests, for the matter of the reliability of the scores, on grammatical skill are prepared to be implemented in pre- test and post test. The three stages are as follow: Stage one: in the pre-test stage the students in (TDE) and (ADE) groups were given some selected exercises and were asked to answer the questions. The questions involved both multiple choices and open ended types. Then the teachers took the papers home, corrected them and scored them. They even provided individual comments and explanation to the errors in a marginal format and gave the papers back to the students. Stage two: the teachers in a discussion format class tried uncover the problematic areas. The teachers, who adopt a mediator role offered feedback, gave explanation, asked them to explain why they chose the wrong answer, and provided them with different techniques mostly with thinking aloud, and mainly focused to give hint to the answers and not to reveal the answer. There was even peer-correction and collaboration at times. Stage three: in this stage another test, parallel with the pre-test was administered. The mediator used the same procedure of scoring in the pre-test. Hand beck their scores but there was no discussion on it. In order to compare the students' amount of grammar improvement in both age groups, the researcher compared the mean scores of pre- test and post – test in each age group and to see if obtained results is significant statistically a paired sample t-test was obtained and to see how differently the groups benefit the implication of DA in their classes the data were entered into SPSS for an independent sample t- test between the groups i.e., teenagers and adults.

## RESULTS

This study was designed to investigate the possible effect of dynamic assessment on students' grammar skill and the amount of effect that DA might have regarding learners age parameter. So the following hypotheses were proposed: 1. DA can influence Iranian EFL learners' grammar skill; 2. There is significant difference between teenagers and adults amount of achievement when a DA procedure is implemented, regarding the age factor.

Based on these hypotheses the following null hypothesizes were proposed: 1. There is no significant difference between the students pre-test and post test when an interactionist DA is proposed. 2. There is no significant difference between the teenagers and adults post test scores regarding their age differences.In order to probe the first null hypothesis stating that there is no significant difference between the students pre-test and post test when an interactionist DA is proposed, the three phases of an interactionist DA was proposed to the learners in both groups. Then the learners pre-test and post test results were entered in to SPSS for quantitative analyses. To see if the difference between the scores in each group is significant enough, a series of matched t-test was calculated for both groups.

The results obtained from a paired sample t- test between pretests and post tests, show that the difference btained is significant enough to reject the first null hypothesis. Therefore we are safe in accepting the positive effect of an interactionist DA approach on grammar learning in both groups. But what concerns the researcher mostly, is which group benefits more when introduced with DA model. To this end, a series of independent t-test was run between both groups' scores. To be sure of the groups' equality in pre-tests and their significant difference in post tests two independent t-tests were calculated between groups, one compares the pre-tests scores and one compares post-test scores. Below is an independent sample t-test to show the equality of groups in pre- test.

| | M | SD | d | t | Sig. (2-tailed) |
|---|---|---|---|---|---|
| **Teenagers** | | | 39 | -0.111 | 0.912 |
| Pre-test | 18.40 | 1.44 | | | |
| Post test | 18.45 | 3.23 | | | |
| **Adults** | | | 39 | -6.109 | 0.000 |
| Pre-test | 18.32 | 1.57 | | | |
| Post-test | 19.05 | 1.33 | | | |

**Table 1 -** The results of running a paired- sample t- test.

*P < 0.001

**Table 2.** Significant difference of pre test scores between teens and adults

| | | Levene's Test for Equality of Variances | | T-test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| Pre-test. Adult – Teen | Equal variances assumed | 0.084 | 0.773 | 0.222 | 78 | 0.825 | 0.07500 | 0.33815 | -0.59820 | 0.74820 |
| | Equal variances not assumed | - | - | 0.222 | 77.440 | 0.825 | 0.07500 | 0.33815 | -0.59827 | 0.74827 |

This part is another t- test to show the significant difference of post test scores between teens and adults

**Table 3.** Significant difference of post test scores between teens and adults

| | | Levene's Test for Equality of Variances | | T-test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| Post-test adult teen | Equal variances assumed | 2.188 | 0.143 | 1.074 | 78 | 0.286 | -0.59500 | 0.55381 | -1.69755 | 0.50755 |
| | Equal variances not assumed | | | 1.074 | 51.965 | 0.288 | -0.59500 | 0.55381 | -1.70632 | 0.51632 |

The researchers carried out an independent- sample t- test to compare the post score results of teenagers and adults, there was a significant difference in scores for teenagers (M=19.05, SD=1.33) and adults ( M=18.45, SD=3.23), t(1.07) , p<0.05. The results of independent t-test shows that the second null hypothesis is also rejected. As the difference between groups post-test is significant.

## DISCUSSION

This study investigated the effects of interactionist DA on the development of grammar ability among Iranian intermediate Students learning English as a foreign language. With increasing interest in DA all over the world especially in the applied linguistic field, there is more need to investigate the role which it could play on SL/FL learning. The research aimed to add a new dimension toL2 DA research, i.e. its specific influence on learners regarding age parameter. The findings of the present study could be discussed regarding two areas of study that the researchers intended to measure. First DA effect would be discussed on EFL learners' grammar improvement; next DA effect would be discussed considering age parameter. First as the results of comparing the mean and having a t- test between pre-test and post – test show the learners in both age groups benefit the application of DA in their classes. it seems that although grammar learning in first language is mainly implicit ; students learning a language as a foreign language would benefit explicit rule governing strategies. And DA could be an interactionist way which includes explicit and implicit teaching strategy. the results obtained from the current study is quite in accordance with the other studies showing the positive effect of DA on students learning; Malmeer (2012); Ableeva (2007); Lantolf and Poehner (2004); Poenher (2008); Sternberg and Grigorenko (2002).

As the research results show DA influence learners differently regarding their age. It was evident that the adults benefit more than teenagers when an interactionist DA was presented to them. One way to deal with this reaction is to consider the interactionist nature of DA. According to Vygotskey's socio-cultural theory DA is both a teaching and assessment procedure in which interaction has a crucial role. And it is presented in the form of mediation and interaction. a very purposeful interaction which happens between the adult learners and teachers in the interactionist DA lead this group to gain more from this procedure, as adults love to interact more with each other than the teenager. Teenagers seem to benefit more from the controlled teaching techniques and methodologies. And they react better to the techniques that aim to create good habits in them by repetition. As the researcher witnessed that they are not very interested in rule learning.

Another interpretation of the results gained could be referred to Piaget view of intellectual learning. For Piaget language development is the result of gradual growth of general intellectual skills (Wool folk, 2004). as

adults have more advanced intellectual system it is unlikely that they could benefit cognitive processes including interpretation strategies more when they are learning a language than teenagers that their intellectual brain is not as developed as adults. Therefore the developmental theory of Piaget could gain more support when the instrument of learning is a cognitive one and where the age plays role in between. The results obtained add supports to the Bandura, 1986 model of learning, that students abilities to learn depends on developmental factors. Young learners have difficulty attending to an event for long periods and distinguishing relevant from irrelevant cues. Information processing's such as organizing, elaborating and rehearsing improve with development.

Although DA rooted in the Vygotsky ZPD, and that the ZPD theory first evolved by witnessing children learning tasks and their possible potential capabilities, it seems that the DA which is rooted in ZPD theory may not play a role in children language learning to the extent that it play role in adults language learning. Actually we can draw a conclusion that the results from the present study provided sufficient evidence for the hypothesis of the study. the results of the paired sample t- test between the pre- test and post- test in both age groups shows that the difference between the results in two tests are significant enough to reject our null hypothesis that the dynamic assessment play no role on the students grammar learning. Using the results of this study language teachers could benefit DA as an effective instrument which help them in conveying the students what they need to learn. The students could benefit greatly too, as they see what their specific weak points are that let them having the results gained. And having the exam in three phases will bring the students a sense of belonging to the class and responsibility for what has or hasn't been learned the learning. The results also revealed that young learners, teenagers, will not benefit DA to the extent that the adults do. Therefore teacher's teaching teenagers could benefit other techniques to help their students learning grammar.

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