

Dynamic Assessment: Review of Literature

Maryam Abbasian

Department of English language and literature, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran

Corresponding author's email: maryam.abbasian91@gmail.com

ABSTRACT

Testing plays a prominent role in language teaching and learning. It is a systematic way to gauge an individuals' knowledge or ability, and it is constructed as a set of procedures or techniques. There are different types of testing. One type of testing type is Dynamic Assessment (DA). In the present study, the purpose was to dig out the theoretical framework of DA. DA is different from Static Assessment (SA). Also in this study, different methods of DA and challenges in DA have been taken into account.

KEYWORDS: Dynamic Assessment, Static assessment, Psychometric testing, Scaffolding, ZPD

INTRODUCTION

Testing plays a prominent role in language teaching and learning. According to Brown (2004), testing is viewed as a systematic way to gauge an individuals' knowledge or ability, and it is constructed as a set of procedures or techniques. Also, this systematic way plays a crucial role in language learning and evaluation in classroom contexts. These issues indicate the importance of this way in the process of language learning and teaching.

As was mentioned above, one of the important issues which can have a great influence on elements of all programs in teaching is language testing and assessment; English teachers are needed to apply traditional standardized static testing, and they believed that it was the most famous approach towards evaluating the learners' language ability, which separated testing from teaching. Static assessment contains of the product-oriented nature, therefore, the outcomes of this type of assessment can only indicate the already existent abilities of the students. Moreover, Lidz (1996) points out that, "traditional standardized assessment trails the learner's cognitive development to the point of failure in his or her independent functioning or static assessment in their classes" (p. 145). Ultimately, limitations and weaknesses of traditional psychometric assessment methods convince instructors to move toward another type of testing which is called Dynamic Assessment (DA) as an alternative or supplemental approach which is originated from Vygotsky's (1978) views on how child's cognition develops and Vygotsky's socio-cultural perspective into assessment. According to Sternberg and Grigorenko (2002), by the emergence of dynamic assessment, this tradition has been a paradigm shift which assumes teaching and assessment as being to inseparable enteritis. They claimed that it is not only a shift to tools and assessment procedures; but also, can be a switch towards a new philosophy of assessment which asserted the intervention role in assisting individuals develop (p. 41). In the present study, the theoretical background of dynamic assessment is taken into account.

THE ORIGIN OF DYNAMIC ASSESSMENT (DA)

Dynamic Assessment is based on the theory of Vygotsky's social constructivism which is called socio-cultural perspective (Poehner & Lantolf, 2005). They pointed out in accordance with the social constructivism model, a child's acquisition takes place through presenting and participating in socially or culturally experiences with a more experienced adult. In other words, according to Kozulin (2003), based on Vygotsky's socio-cultural theory, learning and teaching are regarded to be the repertoire of cognitive development instead of its outcomes. He continued that socio-cultural perspective (SCT) argues that cognitive abilities are modifiable and formed by socially supported interactions.

According to Vygotsky (1986), learning occurs within the zone of proximal development (ZPD). This concept plays a fundamental role in the socio-cultural theory of development, learning and instruction. This notion is associated with the range of learning that children can attain when they are engage in meaningful activities and tasks with a more experienced adult (Kozulin & Garb, 2002). In other words, Kozulin (2003) define ZPD in three aspects: it elaborates children's emerging psychological functions; functionally, it elaborates the distinction between individual and mediated performances in assessment and in classroom learning situations; metaphorically, it determines the "meeting place" of children's spontaneously formed concepts and the academic concepts presented

by their teachers. It is gauged as the distinction between what the child can accomplish alone and what the child can accomplish with scaffolding (Kozulin & Garb, 2002). Vygotsky (1978) stated that scaffolding is viewed as a supportive system established by the adult to lead the child through the process of learning. For instance, an adult may apply the knowledge of child in addition to teach principles of multiplication. The adult attempts to create a more supportive atmosphere until the child can create a connection from “new” information to “known” information.

The ZPD has pedagogical implications in the classroom context. Tharp and Gallimore (1988) believe that good procedures in teaching should involve assisting a learner through the ZPD. Therefore, the process of teaching is regarded as a firm negotiation between learners and teacher. As learners acquire, they will become more accountable for their acquiring and self-regulation. If learners fail to self-regulate their learning notwithstanding scaffolding, the teacher has to go back to instruction at a lower level of cognitive development. Based on the above principles, in the next section, it is necessary to present different definitions of dynamic assessment.

DIFFERENT DEFINITIONS OF DYNAMIC ASSESSMENT

Different definitions of DA were presented in the testing literature based on basic concepts applied by investigators; and they were presented in different terms such as 'mediated learning' (Feuerstein, Rand, Hoffman & Miller, 1980), 'learning tests' (Guthke, 1992), 'interactive assessment' (Haywood & Tzuriel, 1992) and 'dynamic testing' (Sternberg & Grigorenko, 2002). According to Lidz (1996), DA is based on the interactive dimension more explicitly and is defined 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" (p. 4). However, she associates more with how the student responds to mediation, she does not refer to the ZPD. As Lantolf and Poehner (2004) claim that DA merges assessment and teaching into an integrated activity which promotes learner development via proper forms of mediation sensitive to current abilities of the individual (or the group). Essentially, DA is a method for concurrently evaluating and promoting development that takes into account individual (or group) ZPD. Still, there is a slight difference. Similar to Feuerstein, Budoff (1987), this study incorporates a test-train-test format. It is likely that the variations in methods for DA studies is a result of the varied definitions of the process and in fact different definitions lead to different kinds of application models. Lantolf and Poehner (2004) presented a definition about DA and they defined DA as a unified activity and task integrating instruction and assessment to promote student development through mediation that can be used by an individual or a group.

DYNAMIC ASSESSMENT VERSUS STATIC ASSESSMENT

Those working within the field of assessment contrast the DA approach and the traditional approach to testing. This traditional approach is referred to as static assessment (SA). These terms, SA and DA, do not particularly refer to assessments themselves, but rather to the way in which an assessment is administered. Sternberg and Grigorenko (2002) define static assessment as an exam in which test items are presented to testees either one at a time or all at once, and each testee 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, typically each examinee receives the only feedback he or she will get: a report on a score or set of scores (p. vii).

Although, Lantolf and Thorne (2006) assert that utilizing the term SA to refer to testing that is not DA is misleading. This is due to the fact that “there are forms of assessment outside of DA that are not static, involving portfolio assessment, performance assessment, etc.” (p. 357). Thus, they accept a different term, non-dynamic assessment (NDA), to depict this point that all assessment is not DA.

If the evaluation of abilities were done at the end of a certain course of instruction, curriculum, or program, then the test would be known to be a summative assessment, and it would be called a formative assessment when administered during the course of instruction. Formative assessment would be designed usually to determine whether a learner was on track toward the end objective of a language program. This evaluation of a student during the course of instruction would reflect the learners' abilities of mastering the material covered during the preceding period in the program. If the results of a formative test would affect subsequent classroom instruction, then the formative test would be high on “consequential validity” (Brown & Abeywickrama, 2010). Unlike static assessment, dynamic assessment could guide effectively subsequent lesson planning due to its diagnostic ability for immature abilities during the daily course of instruction (Poehner, 2005).

DIFFERENT KINDS OF DYNAMIC ASSESSMENT

There are different methods in DA based on their procedures and objectives. The most regularly applied DA methods involve Feuerstein's Learning Potential Assessment Device (LPAD), Budoff's Learning Potential Testing,

graduated prompts and the information processing framework. In the following section, each of these methods is briefly depicted, highlighting their salient characteristics.

The first method is Feuerstein's Learning Potential Assessment Device (LPAD). Feuerstein's LPAD is considered as a mediated learning process which concentrates on shifting deficient cognitive processes in learners who have problems in learning. This method was designed to improve a child's *cognitive modifiability*, this is an independent ability to self-modify cognitive processes and confirm to shifting requests. Testers are able to change the test items administration in four ways, namely: the tools structure, the test situation nature, the orientation to process, and the results interpretation (Feuerstein, Rand, & Rynders, 1988). The LPAD includes both verbal and nonverbal subtests that concentrate on skills like as reasoning, categorization, and memory strategies. However, the LPAD is an assessment tool, Feuerstein's principal objective is remediation.

Different studies applying the LPAD have been carried out. Most of them, although, did not utilize control groups and have not been published in peer-reviewed journals. In general, investigators figured out that (a) performance on LPAD posttest is higher than LPAD pretest, (b) a longer mediation period leads to greater earnings, and (c) disadvantaged learners benefit more from the LPAD than advantaged learners. Utilizing LPAD in studies has two separate demerits. Firstly, it is time consuming. Secondly, the tools reliability and validity have not been discovered widely by Feuerstein. It was only after Feuerstein that investigators made an effort to standardize protocols and discover issues of reliability and validity.

The second method is Budoff's learning potential testing. This method is famous as test-train-test assessment. *Learning potential tests* were designed and planned as an intelligence measurement, particularly for unsuccessful learners. This type of assessment is a standardized coaching technique that redirects learners' attention to a problem, elaborates principal features of a problem, and recommends progressive praise and encouragement. Coaching continues until mastery is reached. Budoff's measure of learning potential is unique in that it was designed particularly for disadvantaged learners and for the educational placement goal.

Budoff and his colleagues carried out different studies relating to the validity of his tool. To supply construct validity evidence, Budoff and colleagues reported in different studies that coaching leads to improve on posttest (Budoff, 1987). In terms of predictive validity, Budoff demonstrated that learning potential predicts both teacher ratings of achievement (Budoff, 1987) and classroom performance (Budoff, Meskin, & Harrison, 1971). As a matter of the fact, learning potential was found to be the best predictor of classroom achievement for learners enrolled in specific education programs (Budoff, Corman, & Gimon, 1976).

The third method is the graduated prompts method and it was developed by Campione and Brown (Campione & Brown, 1987). Alternatively, it is referred to as *testing through learning and transfer*. The graduated prompts method is viewed as a system of scaffolding that the learners are given a series of continuously explicit suggestions until they can solve a problem independently. The suggestions are standardized and administered in a predetermined order. *Learning ease* is operationalized as the number of hints essential for success on problem. Learners who need the fewest suggestions are believed to have the greatest learning ease. Furthermore, often, maintenance and transfer are used to evaluate learner's ability to apply acquired information flexibly or in new contexts (Campione, Brown, & Bryant, 1985). A principal interest of Campione and Brown was exploring cognitive differences between learners of low ability compared to those of high ability. Outcomes reveal that learners of low ability require more suggestions for solving a problem and transfer information than learners of high ability, evidence of construct validity. A secondary interest was specifying the extent to which a graduated prompts DA measure could predict future achievement. Campione and Brown (1987) applied a matrix reasoning task and a series completion task to specify the amount of achievement gain variance accounted for by DA training, DA transfer, and IQ. DA training and transfer score on both matrix reasoning tasks and series completion tasks contributed significantly to the variance in achievement gain. IQ was found to be a significant, yet inconsistent, predictor of achievement gain.

Most of DA studies applying the information-processing framework was conducted by Swanson. He developed the Swanson Cognitive Processing Test (S-CPT), which is a standardized dynamic tool that assess processing abilities. The principal process thought to contribute to learning is working memory. Thus, the difficulties of children in skill acquisition and learning are depicted to deficit in working memory. The S-CPT measures *processing potential*, which is analogous to Feuerstein's concept of cognitive modifiability. Processing potential is operationalized through the measurement of seven scores: initial score, gain score, probe score, maintenance score, processing difference score, processing stability score, and strategy efficiency score (Grigorenko & Sternberg, 1998, p. 74).

CHALLENGES OF THE DA APPROACH: PSYCHOMETRIC FEATURES

In spite of significant literature on DA as elaborated above, which reveal its usefulness relating to cognitive functions, DA still remains a relatively rare form of assessment in practice (Minick, 1987). The psychometric community, involving some members with DA experience, has challenged DA's theoretical assumptions arguing, for example, it is hard to differ between testers' and testees' contributions to the responses, as it may be vague whose reflecting abilities were identified (e.g. Budoff, 1987). In DA, and more generally in socio-cultural theory (SCT), the development of students during the assessment process is viewed positively and is considered as valid (Swain, 2001). These are essential differences between traditional assessment and DA that have serious implications for important assessment dimensions in general and standardized testing in particular: validity, reliability and fairness.

According to Lantolf and Poehner (2008), validity in DA, has different dimensions, involving construct, consequential and predictive validity, none of which have yet been fully proved in DA. The latter is related to the general understanding of test structure and its development regarding the construct of "learning potential", whereas traditional psychometric tests are more interested in "fixed ability" and set scores to measure it. Assessed constructs must be validly defined in order to predict future performance. But in DA, predictive validity is based on the empirical ZPD prediction of student development, where learners control and self-regulate the structures to be acquired, however not basically linearly. Since this process may be individual, it is unable to fully reflect construct and predictive validity. Furthermore, psychometric testing assumes the objectivity of tester, rater and test setting, while in SCT, the speaking performance is the outcome of the reciprocal influences between the speaker, tester, rater and other elements. In this sense, SCT obliges us to look at speaking performance as an inseparable unit of performance and context and as a co-constructed performance (Swain, 2001, p. 131).

In psychometric type of testing, a reliable test is one in which performance is the same across different learners of the same level, or across different administrations of the same test with the same testers. However, as described earlier, the goal of the assessment procedure in DA is to support learners' development through the use of guided prompts and cues. Shift is expected and viewed positively. To adapt this important distinction, a greater reliability of DA assessment may be sought through standardization of the mediational process (Büchel & Scharnhorst, 1993) as in interventionist DA. In other words, it should be remembered that it is not traditional stability that DA aims to achieve, but rather improvement of students' performance, integrating rigorous documentation of the interactive process with the emphasis on change (Lidz, 1991).

According to Poehner (2011), awareness regarding how well educational practices carry out, as a matter of the fact, reflect intended values and preferences or whether they require to be regarded to better meet the individuals' requirements. Undoubtedly, it is the assessors' intention that their assessment practices should be fair, Gipps (1999) claimed that the important developments in assessment have been driven by attempts to achieve fairness. It was believed that standardization of tests was an act of fairness where similar contexts for all test-takers would reduce differences in performance. Although, SCT emphasizes that the language performance source needs an agent who can operate with mediational means. On the other hand, fairness means treating people differently in order to create, teach and learn within their emerging ZPDs. Therefore, in theory, mediation in DA provides the condition for perhaps the most fair and equitable testing process possible because it is adjusted to each particular student's development. Practically, although, it should be asked how able is each expert to co-construct each learner's best performance.

CONCLUSION

Language testing has a great place in language teaching and learning processes. Also, different types of testing are involved. One type of testing type is Dynamic Assessment (DA). In the present study, the purpose was to dig out the theoretical framework of DA. DA is based on the interactive dimension more explicitly and is defined 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. Those working within the field of assessment contrast the DA approach and the traditional approach to testing. This traditional approach is referred to as static assessment (SA). These terms, SA and DA, do not particularly refer to assessments themselves, but rather to the way in which an assessment is administered. Also in this study, different methods of DA and challenges in DA have been taken into account.

Conflict of interest

The authors declare no conflict of interest.

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