DYNAMIC ASSESSMENT: AN APPROACH TO ASSESSING CHILDREN'S LANGUAGE-LEARNING POTENTIAL

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ABSTRACT—Dynamic assessment represents an alternative approach to traditional language assessments. In dynamic assessment, the examiner attempts to assess the child's potential for language change or modifiability. This article discusses the development of this approach from its early psychological applications to current models of dynamic assessment as they apply to the assessment of child language. Dynamic assessment is particularly useful in addressing cultural differences that may influence children's assessment performance. The approach involves a test–teach–retest paradigm that includes mediated learning experiences, measures of test score gains, ratings of modifiability and language-learning strategies, as well as analyses of qualitative changes in children's responses.

KEY WORDS: dynamic assessment; cultural differences; multicultural assessment

Clinicians use assessment data to make judgments of language development in educational and clinical settings. Information from these assessments is assumed to represent the child's true language abilities and language needs. Yet, for many children, the results of static assessments may not accurately predict the child's future language performance or the child's language-learning potential. Children who do not have the opportunity to learn specific culturally-grounded language behavior (e.g., to provide the "correct" answer without assistance) may not perform as expected on traditional language assessments that assume a uniform set of language experiences. Static assessments may fail to differentiate culturally based language differences from true language disorders. This may result in diagnosis of normally learning children from linguistically diverse backgrounds as language-learning impaired.

Attempts have been made to address the limitations of current language tests for children from culturally or linguistically diverse backgrounds (for a discussion, see

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Gutiérrez-Clellen[1]). Alternative assessment approaches have included the suggested moratorium on the use of given tests with specific groups, the development of separate norms on a given test for different language groups, modifications in test administration, and use of adjusted scores. Such alternative approaches do not solve all problems. For example, even language tests that are normed on children from specific backgrounds may misdiagnose normally learning children. Children who have language and cultural histories that differ from other children in their own cultural or linguistic group may be diagnosed because of the mistaken assumption of homogeneity in group experiences.

In order to differentiate language disorders from differences, assessment approaches should address potential individual differences across families within a given culture. There is evidence that the types of environmental or cultural experiences that children are exposed to may have an effect on their communicative performance. For example, Hart and Risley[2] found differences in parenting styles and amount of specific language interactions in their longitudinal study of 42 American families. These differences were related to differences in children's word learning during the early stages of language development. This issue is discussed further by Watkins and DeThorne *(see pages 235–246)*.

Another difference among individual families and cultural groups is the value placed on children's verbal expression. Children from some families may learn mostly by observation and demonstration, rather than by verbalizing. These children are likely to exhibit distinctive performance in language assessments that require them to verbalize. Their different responses should not be interpreted as a lack of language ability, but rather as a reflection of their cultural heritage.

Assessment instruments need to be responsive to the dynamic and idiosyncratic nature of language learning. Dynamic assessment is an approach that focuses on assessing children's ability to respond to change. Clinicians using dynamic assessment apply specific strategies to assess the child's responses to change during the assessment process. The capacity for change, rather than the child's score on a test of knowledge, is used to gauge the child's stage of development and capacity to acquire new knowledge.

DYNAMIC ASSESSMENT: THE MODEL

The dynamic assessment approach originated almost thirty years ago, in response to dissatisfaction with traditional methods of assessing mental ability or intelligence. Concerns with standardized testing included (1) the bias of tests for assessing individuals from minority groups or new immigrants; (2) the lack of consideration of motivational, social, and personality variables having the potential to influence test performance; and (3) the limitations of tests for guiding and programming interventions.[3]

Since the 1950s, when Reuven Feuerstein began his work with new immigrants in Israel, he has been the most influential contributor to the development of dynamic assessment methods. At that time, there was massive immigration of Jews to Israel from disparate regions such as Europe, North Africa, and the Middle East. Feuerstein began his career as a special education teacher and counselor for children who had survived concentration camps. A large number of these children were found to have difficulty in mainstream schools. Other children, who came from Morocco, performed poorly on standardized tests of cognitive ability and intelligence because of the inherent cultural bias of these tests. To overcome this bias, Feuerstein developed a unique tool, the learning potential assessment device (LPAD). The tool was designed to assess not only specific functions but also the children's cognitive modifiability. A critical aspect of the assessment was to investigate the child's learning processes, the conditions under which performance could be changed, and the mediational strategies

that facilitated the child's learning. The LPAD includes several tests (e.g., Feuerstein's variations on the Raven's matrices and the organization of dots test). Attention is paid to the child's strategies as well as the child's responses. If the test shows the examiner that the child is not effectively planning an approach to come up with a solution, then a focus of mediation would be to teach the child how to draw up different strategies and test them before attempting a solution to the problem. The examiner would (1) help the child identify possible strategies and then use them to evaluate their effectiveness in determining the final answer, and (2) facilitate transfer to other situations.

Within this approach, the examiner's role shifts from that of a neutral observer to one who is responsible for effecting change in the examinee. The examiner becomes a mediator and the assessment becomes interactive and dynamic. The basic assumption is the belief that people can modify their cognitive functions when appropriate mediated learning experiences are provided in the assessment process. Feuerstein showed that children who had low IQ scores before a mediated learning experience (MLE) were able to learn when a MLE was provided in the course of the test. For example, many children from Morocco had not had the opportunity to benefit from interactions with their elders in their native communities. These children had a history of marginalization and segregation and family breakup when they had to immigrate to urban centers in search of employment. As a result, they had limited mediated learning experiences. The performance of the children on traditional cognitive tests appeared low, yet their performance improved considerably on assessment tasks that involved examiner mediation. The notion of modifiability can be understood better within a sociological framework that assumes that, "the interaction between the individual and the environment is never immediate, it is always mediated by meanings that originate "outside" the individual—in the world of social relations" (Presseisen and Kozulin,[4] p. 54). Children who do not have culturally based mediated learning experiences will not be capable of performing as expected on assessment tasks that assume those experiences.

The key to the success of this approach relied on the features of the mediated learning experience. Based on Feuerstein's theory of cognitive modifiability, a MLE has four components. It should include mediation of (1) meaning (i.e., to make explicit the significance of the learning activity and help the child understand why something is being taught); (2) intentionality (i.e., to explain the purpose of the teaching experience); (3) transcendence (i.e., to make clear how the learning activity relates to the child's experiences in other contexts); and (4) feelings of competence (i.e., to provide explicit feedback about the correctness of the child's responses and to reward the child's attempts). The following script for mediating synonym production[5] illustrates these principles:

> *Mediator:* We will talk about how we describe objects, actions, and feelings. There is more than one way to describe objects, actions, and feelings (intentionality). We can say two words that mean the same thing. For example, we can call a baby an infant. It's important to know about words that mean the same thing for doing well in school school, so that you can understand better what's being said in class and what you read (meaning). You can also use synonyms when you are talking to a friend and you can't think of the correct word. So, you think of a word that has a similar meaning (transcendence).
>
> Good job. You thought up the synonym by yourself. When you took your time and gave me as much information as you could, you were able to find the synonym without help (feelings of competence). You need to take your time so that you can be sure of your answer (regulation of behavior).

Originally, these basic principles were applied during the assessment process to help children modify the way they solved

cognitive problems. Feuerstein and colleagues used this model to facilitate the transfer of skills to other tasks, so that the goal of the assessment was not limited to mediating test-taking skills, achievement, or teaching to specific tests.

The focus on assessing children's modifiability through mediated learning is closely linked to Vygotsky's[6] notion of the zone of proximal development (ZPD). The ZPD is defined as a difference between the child's performance with and without assistance. Assessments that examine assisted performance may reveal abilities which may not surface if assistance is not provided. The wider the ZPD, the greater the child's potential for achievement may be. In turn, children who have limited learning ability will display limited modifiability during the assessment process. In both MLE and ZPD, assessment is aimed not at defining the current knowledge of the child but rather at the capacity to learn.

OTHER APPROACHES TO DYNAMIC ASSESSMENT

Specific dynamic assessment approaches vary in the degree to which they individualize their mediated learning strategies. Some approaches have used graduated prompting (i.e., a hierarchy of predetermined prompts), which may not be individually modified. For example, Campione & Brown[7] determined the child's modifiability based on the number of prompts needed to elicit a desired response and on the level of transfer of learned skills to novel tasks. The number of prompts needed to elicit targets and the level of transfer of learning to other tasks are used to predict children's learning potential, defined as gain scores post-testing.

The use of graduated prompting has been criticized on the grounds that it does not include a MLE and that the use of prompts is more or less standardized. Feuerstein et al.[8] suggested that this type of intervention may result in limited changes in the child's performance within and outside the assessment setting.

Other approaches to dynamic assessment have been applied primarily using a test–teach–retest approach. For example, a standardized test is used for the pretest and a parallel form for the post-test.[9] The training phase can be individualized or presented in groups and may take place over several days. Within these test–retest approaches, the issue has been how to measure change, since a simple pre-post-test difference may relate to initial group differences on the pre-test, regression to the mean, or other factors unrelated to the child's modifiability. Thus, Guthke and Wingenfeld recommended the use of post-test scores only as a measure of a child's standing relative to his/her potential for learning after intervention. As with graduated prompting, these approaches have been criticized because they involve standardized training that is not responsive to individual children's needs or ability to change.

Finally, researchers in the area of dynamic assessment have also used a modified test procedure that isolates various modes of test administration.[10] The testing procedure requires the child to verbalize during and after the stimulus item is presented, and to explain the selection of an answer. The examiner provides feedback as needed or elaboration as to why the answer was correct or incorrect, as well as expectations for completing the task. The procedures form a hierarchy of testing conditions. The approach is based on the assumption that variations in test conditions can provide insight into individual differences in performance. Clearly, the approach does not attempt to examine the child's learning ability, but only the potential effects of task familiarity. Thus, it has many of the limitations of traditional assessments.

To truly assess children's ability to change behavior or knowledge, an assessment should specifically determine (1) the area in which a change has occurred (or not); (2) the quantity and quality of the change observed (i.e., how much change is observed and how well learning has trans-

ferred to other tasks); and (3) the amount of effort and type of mediation required to effect change in the child's performance.

DYNAMIC ASSESSMENT OF LANGUAGE

Within the area of language assessment, dynamic assessment approaches have ranged from the use of graduated prompting to the application of a test–teach–retest paradigm. For example, Olswang & Bain[11,12] used a hierarchy of verbal cues to determine readiness to produce two-word utterances in children at the one-word stage of language development. Children who had similar language performance were taught single words using three types of cues: modeling ("This is a baby"), modeling with an elicitation question ("This is a baby. What is it?"), and modeling with communicative pressure (withholding the object until the child attempted to produce the word) (Olswang & Bain,[11] p. 260). Children differed in their responsivity to the cues and in the type of cues needed to produce expanded utterances. Such an approach had greater ability than static assessment measures to predict short-term language growth.

Graduated prompting has also been applied in the assessment of phonemic awareness. For example, Spector[13] used corrective feedback and a hierarchy of increasingly supportive prompts to rule out poor performance by children that might be due to difficulties with the assessment task and/or attentional issues. Children who had difficulty segmenting a word received a fixed set of graduated cues (i.e., pronouncing the target word slowly; identifying the first sound in the word; cueing the child with the number of sounds in the word; modeling segmentation by using pennies placed in squares to represent the number of sounds in the word; working hand-over-hand with the child while pronouncing the segments). Each response was then scored based on the level of assistance needed (e.g., a correct response without prompt received a maximum score of 6; a correct response after the first prompt in the hierarchy received a score of 5). A multiple regression analysis indicated that the dynamic measure of phoneme segmentation was more accurate in predicting progress in beginning reading than any of the other static measures of phonemic awareness (i.e., phoneme segmentation, phoneme deletion, and invented spelling). Children who showed greatest progress in reading tended to be those who showed the most responsivity (higher prompt scores) during the dynamic assessment.

One of the major problems with these approaches is that the interaction with the examiner is standardized, rather than individualized. A different approach using mediated learning has been developed by Peña and colleagues.[14–17] The approach is designed to assess vocabulary skills in preschool children from different sociocultural backgrounds. Change was evaluated by looking at both the children's pre-post-test scores on standardized vocabulary tests and modifiability ratings obtained during a dynamic assessment. After the pretest, children were taught labeling skills (i.e., that things had "special names" and that labels are important to distinguish them) using pictures and classification activities that did not include the test items. The mediation phase applied the principles of MLE and was conducted in two separate sessions. To obtain an index of the child's modifiability, children's responsiveness, interaction with the examiner, level of transfer, and learning behaviors (e.g., attention, planning) were rated after each training session, using Likert-type rating scales.

Their research showed that children with typical and low language ability were not well differentiated on the basis of vocabulary scores on the pretest. Yet many children who appeared low functioning on the pretest, were able to show significant gains when MLE was provided. Ratings of modifiability based on the child's responsiveness, examiner effort, and transfer obtained immediately after the MLE were also significant in their ability to differentiate children with different language-learning abilities.

AN ALTERNATIVE MEASURE FOR ASSESSING POTENTIAL FOR LANGUAGE CHANGE

A more comprehensive approach to assessing children's potential for language change was illustrated by Gutiérrez-Clellen, Brown, Conboy, & Robinson-Zañartu.[5] Assessment of semantic relationships (e.g., synonyms and antonyms) included a MLE, and then potential for language change was measured using pre-post-test gains, ratings of modifiability, and by qualitative changes in children's responses.[5]

Following Feuerstein's ideas, the assessment incorporated a training phase, which focused on teaching the way the child generated synonyms (see script for the application of MLE principles earlier in this paper). The training was designed to promote comparative behavior, the use of two or more sources of information, precision and accuracy of responses, and hypothesis testing. The examiner used specific word lists (different from test stimuli) to mediate the processes underlying expected performance. For example, comparative behavior is needed to look for similarities and differences between a stimulus word and a related response. Similarly, in order to select the best description for a target word, one needs to use two or more sources of information. Precision and accuracy are necessary for the production of specific labels and attributes as synonyms for targeted stimuli. Finally, hypothesis testing is needed in order to evaluate a selected synonym. Children's incorrect responses on the synonym pretest could be related to different problems. Some children had difficulty with comparative behavior but not with precision and accuracy. Others could compare, but had difficulty taking into account two or more sources of information. Thus, the approach included a highly individualized training component.

Children's potential for learning synonyms and antonyms was revealed by the quantitative and qualitative measures, as well as by specific scales designed to assess the child's learning behavior and modifiability. The scales appeared accurate at predicting children who made either substantial or no language gains post-MLE. However, the scales were less accurate at assessing potential for language change in children who exhibited some, but limited, language gains. The analysis of children's responses enhanced the value of the dynamic assessment by providing further information about children's readiness and what was needed to modify their responses.

In a more recent article, Gutiérrez-Clellen and Peña[18] discussed the limitations of current dynamic measures for assessing children's language learning potential and showed how the use of a combination of measures could best capture children's language learning potential. The measures included post-test scores (which appear to be less problematic than pre-post-test comparisons), modifiability scales, and a qualitative analysis of children's responses. Although further research is needed to validate this approach across different language areas and with different groups of learners, available studies with culturally and linguistically diverse children are promising.

SUMMARY AND RECOMMENDATIONS

Clinicians interested in distinguishing potential normal language differences from true language disorders as well as those seeking to design more effective intervention activities can be guided by the following practical recommendations:

Identify the Processes Underlying Successful Task Completion

1. Determine what the child is required to do to complete the task (e.g., to scan all pictures on a given page; to listen to each part of a question; to compare different sources of information, to be precise and accurate in their answers; to elaborate and provide details in recall tasks or comprehension questions).

2. Test the child and note any incorrect answers or problem areas.
3. Establish possible explanations for the child's incorrect responses (e.g., task familiarity, task modality, level of abstractness, examiner–child interaction, attention, motivation, or other affective variables).

Design Mediated Learning Experience(s)

1. Select materials appropriate for the child's level of performance (e.g., pictures, objects, audiovisual aids).
2. Select activities that will promote use of processes identified during pre-testing (e.g., regulation and control of behavior, planning, discovery of rules, sequencing, comparative behavior, interaction with adult) and transfer to other tasks or situations.
3. Apply principles of MLE (i.e., intentionality, meaning, transcendence, feeling of competence) for the specific mediation session(s).

Assess the Child's Responsiveness to Examiner Mediation

1. Use rating scales to assess the child's language learning behavior during the MLE (e.g., attention, discrimination, planning, self-regulation, motivation, interaction with adult).
2. Assess the child's ability to transfer learned strategies to a new task (i.e., from independent use of a strategy, to minimal or no use of strategy in spite of prompting and modeling).
3. Rate the child's overall responsiveness during the MLE (1 = not at all; 2 = low; 3 = moderate; 4 = high).
4. Rate the amount and intensity of effort required to induce change during mediation (1 = high; 2 = moderate; 3 = low; 4 = minimal).

See Gutiérrez-Clellen, Brown, Conboy, and Robinson-Zañartu[5] for definitions, examples, and scoring criteria.

Re-assess Child's Language Skills

1. Establish language gains using posttest scores.
2. Determine qualitative changes in the child's responses to language testing
3. Identify areas that may have improved after MLE, and areas that may still need continued mediation.
4. Summarize language needs, learning behaviors that may need further mediation, mode of intervention (if relevant), and specific tools that would be useful to facilitate modifiability.

Dynamic assessment approaches offer a new direction in child language assessment, one that can reduce the cultural bias of current assessment approaches and the potential for misdiagnosis of children from diverse backgrounds. The applications discussed in this article should encourage future efforts by clinicians and researchers to improve and expand child language assessment practices and should have clear implications for therapy designed to maximize child learning.

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ARTICLE SIX

SELF-ASSESSMENT QUESTIONS

1. Dynamic assessment addresses variability in children's cultural experiences by:
   (a) using test modification procedures
   (b) adjusting test scores for different groups
   (c) applying criterion-referenced measures
   (d) none of the above
2. Which of the following is true?
   (a) In dynamic assessment, the examiner becomes an active mediator.
   (b) The goal of dynamic assessment is to assess test wiseness.
   (c) Children with limited modifiability have a wide zone of proximal development (ZPD).
   (d) Dynamic assessment provides information about the child's learning processes.
3. In dynamic assessment the examiner:
   (a) provides additional time to respond to test questions
   (b) allows for multiple repetitions of a stimulus item in different modalities of presentation
   (c) includes a hierarchy of prompts
   (d) teaches specific test contents