

Non-Discriminatory Assessment of Culturally Different Students

Abstract

Intellectual assessment has been based traditionally on the assumption that intelligence is static or unchanging. This conception has resulted in inadequate testing practices with culturally different students. This paper examines alternative approaches to the cognitive assessment of ethnically different students. The two most viable methods – comprehensive and dynamic assessment – are discussed, with the hope that non-discriminatory assessment techniques will be used with minority students.

Résumé

L'évaluation des facultés intellectuelles part généralement de l'hypothèse que l'intelligence est statique ou qu'elle n'évolue pas. Cette méprise a donné lieu à des tests qui ne conviennent pas aux étudiants de milieux culturels fort différents. Dans cet article, Lewis analyse les autres façons d'aborder l'évaluation cognitive d'étudiants différents sur le plan ethnique. Il analyse les deux méthodes qui conviennent le mieux – l'évaluation cognitive d'étudiants différents sur le plan ethnique. Il analyse les deux méthodes qui conviennent le mieux – l'évaluation exhaustive et l'évaluation dynamique – dans l'espoir que des techniques d'évaluation non discriminatoires seront employées avec les étudiants des minorités.

Psychologists who deliver services in a multicultural society face the problem of deciding which aspects of a particular problem are unique to a specific cultural or ethnic group, and which cut across cultural differences and are common to all individuals. The same problem faces educators in assessing the intelligence of students of varied backgrounds.

Traditionally, the assessment of cognitive ability began with the assumption that such ability is static and unchanged by teaching and learning. The tendency was to regard mental ability as innate. Although this concept of mental ability has helped us to understand some aspects of human intelligence, it does not adequately explain what intelligence is nor how it functions. In fact, static appraisal techniques have been found to be inadequate under special circumstances, such as when they are applied to the assessment of the mentally retarded (Haywood *et al.*, 1975) and culturally different minority groups (Budoff, 1973; Feuerstein, 1979). The discovery of these inadequacies has prompted assessment experts to suggest alternative approaches to assessment when dealing with culturally different children (Mercer, 1979; Samuda, 1975).

The concept of intelligence has been the subject of intense examination. While some psychologists believe that intelligence can be represented by a single number or factor, others (Carroll, 1983; Detterman & Sternberg, 1982; Sternberg, 1977) contend that tests based on a single factor or even multiple factors cannot account for all the variance of mental ability between individuals. Factor analytic studies of intelligence have been useful in identifying the number of specific abilities that make up an overall mental ability, but they fall short in explaining how a specific ability or cluster of abilities develops. Mental ability tests would be far more useful if, in addition to measuring intelligence as a product, they also could identify the process by which intelligence changes and/or accumulates as an individual acquires new experiences.

With this view of intelligence in mind, psychologists have set out to devise new approaches to intellectual assessment that take into account not only static knowledge but also cognitive processes. While these approaches do depend on the use of tests and test scores as a measure of mental ability, they also incorporate teaching and clinical observation to determine the cognitive style and any learning deficit of a student. Assessment, therefore, is an ongoing process in which the teacher monitors and reinforces academic progress and cognitive development. Many studies have advocated the need to shift from conventional methods of assessing minority students to these new approaches (Garcia, 1981; MacIntyre, 1985; Reschly, 1981; Salvia & Ysseldyke, 1978; Scarr, 1981). We now present two of the most vital approaches for discussion: comprehensive individual assessment and dynamic assessment.

Comprehensive Assessment

The goal of comprehensive assessment is to produce an accurate appraisal of students' current level and mode of intellectual functioning within the context of their cultural background and experience. Specific

learning needs are diagnosed and assets are identified to help the teacher formulate remedial programs for students. In practice, such an assessment process would involve a team consisting of a counsellor or psychometrician, a teacher, and a school administrator in the process of gathering data through testing, observation, consultation, and diagnosis. Often parents would be invited to participate in the process. The assessment follows these guidelines:

1. Diagnostic decisions, placement, and program changes in any counselling situation should be based on a wide range of information about the student.

2. Assessment results from a team deliberation on such information as how the student's performance is influenced by acculturation, language skills, behaviour mode, socioeconomic background, and ethnocultural identity.

3. The appraisal of the student's needs, strengths, weaknesses, and level of present cognitive functioning is made with reference to the background data outlined in point 2.

4. The main assessment objective is to define and design a teaching or remedial program that would best help the student to profit from the school system.

5. The remedial program should be carried out and monitored regularly by the assessment team.

The information generated by a process following these guidelines is called a comprehensive profile. In contrast to a single score, as obtained from a conventional intelligence test, the comprehensive profile is made up of information from a wide range of data sources: 1) observational data, 2) school records and other available data, 3) language dominance, 4) educational assessment data, 5) sensory-motor and/or developmental data, 6) adaptive behaviour data, 7) medical data, 8) personality assessment data (including self-report), and 9) intellectual assessment data.

The team approach, coupled with the wide range of data collected, allow a comprehensive profile about the individual being assessed to be constructed. The intellectual assessment of the student should be performed last, so that the results can be interpreted in the context of all the other information gathered. The works of Chodzinski and Samuda (1983), Salvia and Ysseldyke (1978), and Sattler (1982) provide many valuable suggestions on how to collect, validate, and interpret many tests and background information for cross-cultural assessment.

Comprehensive assessment is a continuous process. As individuals develop, their intellectual and achievement profiles change. Identifying the factors and information processing modes of students in each subject area

can help the teacher design appropriate learning materials and procedures to meet each individual's needs. The emphasis should be on helping students maximize competencies and opportunities, particularly in the case of minority students (Reschly, 1980). With this in mind, Harold Dent (1976) has suggested that assessment procedures should follow four directives. First, the assessment must provide an accurate appraisal of students' current level and mode of functioning within the context of their cultural background and experience. Second, assessment must identify specific educational needs rather than focus on perceived or inferred intellectual deficits. Third, assessment must focus on learning assets and strengths as the basis for the development of new learning skills. Finally, assessment must be a dynamic, ongoing process.

Dynamic Assessment

In contrast to the psychometric tradition which treats intelligence as a static product, Vygotsky (1978) perceives intelligence as a dynamic process that changes with development and learning. As learners interact with other people, their learning stimulates cognitive development. As cognitive development proceeds, a zone of proximal development, can be delineated to reflect the gap between the learners' actual development and their developmental potential. This potential enables the psychologist or teacher to help improve the learners' mental ability. In this sense, the assessment is dynamic and helpful.

Vygotsky (1978) defines the zone of proximal development as

...the distance between the actual development 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)

The size of this zone is determined by using conventional intelligence tests in a "test-teach-test" format. An individual is first given a test, or part of it, to determine the items which can be performed correctly and those which are difficult to solve. After this initial performance, the psychologist or teacher works with the student to help him/her complete the difficult items. This is done by appropriate prompting by the teacher until the student achieves competence. Finally, the test is administered again to ascertain the degree to which learning has helped the individual to perform better on the same intelligence test. The zone of proximal development is indicated by the number of prompts given in the teaching phase and their transfer effect. An individual who has received few prompts and who is able to solve many problems of a similar nature has achieved high transfer and,

by implication, has a high learning potential. Clinical observations of the learning process would yield rough calibrations of a person's ability to benefit from prompting and learning, speed in learning new materials, and transfer capabilities. However, it should be recognized that much of this learning also depends on the nature and quality of the prompts given. The prompts are only appropriate and effective when the teacher or psychologist involved knows the componential features of both initial and transfer tasks and is able to provide prompts effectively.

Dynamic assessment, when compared with traditional psychometric methods, seems to yield a richer understanding of human intelligence. This approach has been developed further by the methods and tests of Budoff and Feuerstein. A description of both these methodologies is now presented.

The Budoff method

Budoff's method of assessment begins with a testing of the individual with a series of both familiar and novel tasks. The performance of these tasks provides a base-line measure which can be compared to subsequent performance of the same tasks. This is the diagnostic phase.

The second phase of assessment engages the tester and testee in a teaching and learning process. The tester (the teacher) explains to the testee (the student) the principles of thought and logic required to perform the tasks in the pretest. The teacher can teach either general reasoning skills or basic concepts. He/she can then, based on his/her teaching, rearrange the tasks in the original test from easy to difficult, and ask the testee to do it again beginning with the easiest item and proceeding to progressively more difficult items. This methodology enables the teacher to ascertain two dimensions of the effectiveness of the teaching and learning: 1) whether the student's performance improved with teaching; and 2) the degree of improvement. From these clinical observations, the teacher can acquire data on the learning potential of the testee and the manner and speed with which performance is being improved. The teacher can also identify the student's preferred cognitive modality; that is, whether auditory or kinesthetic inputs most help the student in attaining an improved understanding of a particular subject or task.

The test-teach-test method of assessment can be used for a single task or a number of tasks. In the case of several tasks, a battery of tests is employed. So far, Budoff's research has concentrated on assessment using a single-task approach. He also believes in the use of nonverbal tests such as the *Kohs Block Designs Test* (1932) and the *Raven Coloured Progressive Matrices* (1956) for assessing and improving children's reasoning abilities. Because both the test items and the training exercises are relatively free of

cultural bias, children of diverse backgrounds can gain true cognitive experience unhampered by negative situational factors such as culture block and language deficiencies. This approach has proven effective in improving the cognitive ability scores of some children.

A parallel approach is found in the Soviet Union. The child is required to perform a task independently, then the examiner/tutor guides him/her in performing aspects which were failed. The child is then asked to repeat the same task by himself/herself to determine the gain obtained from the help given.

The Feuerstein method

Feuerstein has been concerned with assessing the untapped cognitive potential of culturally deprived children so as to remedy their deficiencies through an active intervention program which builds a more effective cognitive structure. The acquisition of such a structure will enable a person of low mental ability to become more adaptable, flexible, and therefore more capable of comprehending, planning, and solving problems.

Feuerstein makes a clear distinction between cultural deprivation and cultural difference. Culturally different individuals are simply persons who are members of a minority group within a mainstream culture. Because of their difference, individuals may suffer from performance deficiencies and/or lack economic opportunities. Such deficiencies can change as they acquire the essential skills necessary for succeeding in the society. A strong affiliation with their own minority culture can provide a sound psychological foundation to deal with the requirements and expectations of the dominant culture.

Culturally deprived individuals, on the other hand, are persons who are deprived of their own background culture. They have, in effect, become alienated from any cultural affiliation. This alienation may have been caused by any number of single or interactive factors: social class, physical factors, religion, psychological factors, and learning. Whatever the cause, cultural deprivation often leads to poor cognitive ability which reduces individuals' chances of keeping up with their peers and the school's expectations. Even manifestations such as a lack of motivation and the ability to learn and change in therapeutic and remedial situations can signal cultural deprivation. It is not difficult to realize that, under these circumstances, the use of conventional intelligence tests for assessment would only compound the already unfavorable situation by seeming to indicate that the individual has a low IQ. A different approach of assessment is needed if change is intended to be a logical follow-up of that assessment.

In their investigation into the problems confronting the culturally deprived, Feuerstein and Hoffman (1982) discovered that such individuals suffer from "a disruption of intergenerational transmission and mediational processes." Not only are they deprived of the learning experiences mediated by parents that normally occur during childhood, but they also are prevented from developing a sense of order about the environment and from formulating effective cognitive schemes with which to handle daily life problems.

In a normal childhood, interactions between child and parents are typically replete with examples of mediated learning. In this process, the parents selectively accept or reject certain stimuli to present to the child. In effect, the parents filter, frame, schedule, and sequence events at home and mediate relationships of time, space, causality, and affection. Through these experiences, children gradually construct their cognitive structures and link themselves with their cultural past and their social reality.

It may be said that every culture provides a structure within which the organization, interpretation, and understanding of events and relationships can occur through exposure and experience. It is this organization of experience that links individuals with their society. It also enables them to be flexible, adaptable, and creative in rooting themselves with the past, handling the present, and anticipating the future in the context of their cultural milieu. Language plays an important part in this process, as do other forms of communication and sharing. Feuerstein suggests that a mediated learning experience (MLE), such as occurs between a child and a parent in the normal process of development, is necessary to initiate every member of a society into the universal cognitive structure of that society. For those who have been deprived of this initiation, Feuerstein believes that the introduction of a mediating learning experience intended to fill in the gaps left by deprivation is helpful.

If it is assumed that culturally deprived persons, whether children or adults, have a much higher potential than they have been able to demonstrate in conventional intelligence tests, then a teacher, acting as a mediator, can help improve their cognitive ability by providing them with alternative perceptions and interpretations of the world. In order to do so, the teacher must first gain an understanding of their intelligence as well as their cognitive potential. Feuerstein uses a dynamic assessment approach which he calls the Learning Potential Assessment Device (LPAD).

The LPAD begins with a clear delineation of psychometric goals, as follows:

1. To assess students' cognitive modifiability by observing them function in situations designed to produce a change in them.

2. To assess the extent of students' modifiability in terms of cognitive functioning, and how significant their attained functioning is in the hierarchy of universal cognitive operations ranging from perception to abstract thinking.

3. To determine the transfer value of what is learned in one area to other areas of operations.

4. To identify students' preferred modalities for learning and the problem-solving strategies that work best for them.

The assessment process engages both the student and the assessor or counsellor in active modificational operations. As the student performs the given tasks, the counsellor intervenes whenever necessary to present alternative ways of perceiving, interpreting, and problem-solving. Any change in the student is noted, as well as the amount of intervention required to produce the change. On the basis of these observations, the counsellor then predicts the level of change potential in the student.

To facilitate this dynamic assessment process, conventional testing procedures have been modified to accommodate new goals. The characteristics that make up the essence of the new approach are:

1. The tester acts as a responsive, concerned, and individualized counsellor rather than a standard neutral questioner.

2. The test questions or task items must be clear and well-sequenced. They should permit ready assessment of students' present level of cognitive functioning and the way in which their problem-solving skills and relational thinking may be changed.

3. The assessment must focus on the process of intelligence rather than on its product. Emphasis is placed on the change in students' cognitive skill.

4. The responses that reflect both the process and product of cognitive operations are viewed as salient indicators of students' potential.

The LPAD thus helps to tap an individual's acquisition components and performance components of intelligence, and identifies where the deficits lie. Contained within the LPAD are detailed lists of the impairments that may be found among culturally deprived persons in three levels of cognitive functioning.

Even though the LPAD is concerned with an understanding of cognitive processes as a basis for remedial work, there are some weaknesses in the instruments employed. For one thing, the beginning and the end of the test-teach-test process tend to measure cognitive ability in terms of standardized units. Then, because this kind of clinical assessment requires assessors to approach the interpretation of results as well as the mediation

in their own way, the outcomes of the assessments do not lend themselves easily to comparison. Finally, the basic assumption that everyone is modifiable is an overgeneralization. Nevertheless, when viewed as a special assessment method aimed at facilitating therapeutic measures, the LPAD serves to meet the needs of people who are culturally deprived. Used properly, tests using the LPAD can yield the following information about the testee: 1) capacity to grasp an underlying principle, 2) amount of work required to teach a principle, 3) capacity to transfer what is learned to solve new problems, 4) modality preference in cognitive operations, and 5) the effects of mediation strategies on changing cognitive structures.

The Kaufman method

Kaufman is concerned with the assessment of fluid intelligence and achievement. The *Kaufman Assessment Battery for Children*, also called the K-ABC, measures intellectual functioning in two broad categories: Mental Composite Processing and Achievement. Mental Composite Processing and Simultaneous Processing are assessed through close observation as the tests are administered individually.

The K-ABC is made up of 16 subtests designed to measure different elements of children's intellectual capacity. Ten of the subtests are used to assess intellectual functioning, while the remaining six assess achievement. The battery is standardized on a nationwide sample of normal and exceptional students between two-and-a-half and twelve-and-a-half years of age. The tests are administered individually and involve only rudimentary verbal skills. In fact, a nonverbal scale is included to test children with language differences or language disorders. Norms have been established to reflect sociocultural factors. This makes the tests useful for assessing children from minority ethnic backgrounds.

The number of subtests used for assessment varies, depending on the age of the child. The guideline is: seven subtests for age two-and-a-half, nine subtests for age three, 11 subtests for ages four and five, 12 subtests for age six, and 13 subtests for ages seven to twelve. No child is given more than 13 tests. The testing time ranges from 35 to 85 minutes, depending on the age and speed of the child (Kaufman, 1975).

When administering the tests, the teacher first makes sure that the testee understands the tasks involved before asking him or her to perform them. The scores are interpreted with flexibility and care in order to decide what posttest intervention strategy should be taken to help the testee. The interpretation of test scores follows five empirical steps. The tester first transforms the obtained scores into percentile ranks and classifications. Next, the scores on the sequential processing scale is compared to those on

the simultaneous processing scale. Thirdly, the mental processing standard scores are compared with the achievement standard scores. Fourthly, the mental processing scores are scrutinized to determine strengths and weaknesses among the subtests used. Finally, assessment is made on the basis of strengths and weaknesses on the achievement scale.

In appraising the appropriateness of the K-ABC battery for the assessment of the intellectual ability of minority students, one may refer to the theoretical basis on which the tests are constructed. The concept that sequential and simultaneous processing is distinctly different from mental processes has its origin in the neurophysiological concepts of Luria (1966). According to him, the two hemispheres of the human brain perform different functions. While sequential processing handles tasks such as the habitualization of skills, rote memory, and narration, simultaneous processing deals with spatial organization, linguistic expressions, and comparison and contrast tasks. A number of empirical studies that support distinction between mental composite processing and achievement are cited in the K-ABC interpretation manual.

The fact that the K-ABC battery separates the mental processing scores from the achievement scores may explain why it is more useful in assessing the intellectual ability of minority children than conventional tests such as the *Wechsler Intelligence Scale for Children - Revised* (WISC-R) and the *System of Multipluralistic Assessment* (SOMPA). Various cultural groups have different cognitive processing styles as well as different relationships between simultaneous processing and sequential processing. Kaufman and Kaufman (1982) have studied the effect of the K-ABC on Hispanic children, and have found the assessment to be more accurate than results obtained from the WISC-R. Whereas, the K-ABC Achievement Scale uses a predominantly visual approach, the WISC-R Verbal Scale by comparison places unfair emphasis on language skills. The flexibility in interpretation of the K-ABC also helps the tester to derive richer information with which to design effective posttest intervention strategies. In fact, the tester can clearly determine the characteristics of the testee's cognitive performance and verbal achievement.

Discussion

It seems, on the basis of the preliminary research results, that both the LPAD and the K-ABC are more appropriate assessment devices for testing minority children than the WISC-R and SOMPA. In certain ways, Feuerstein's method might be considered more dynamic than Kaufman's, but both share similar areas of emphasis and styles. Both methods deemphasize factual information and general learned content, and instead concentrate on problem-solving tasks of a nonverbal and culture-fair nature. Both

approaches incorporate a training component to help the testee who doesn't understand the tasks involved in the assessment. The Feuerstein approach trains the testee in order to measure learning potential, while the Kaufman method does the same thing so that more reliable scores can be obtained.

As a whole, the innovative approaches to mental ability assessment have shifted the focus away from quantitative product scores to qualitative observations and interpretations of the process of mental ability functioning. Dynamic assessment is based on the assumption that intelligence is a multifaceted, multidimensional, and fluid construct that continually undergoes change. This approach attempts to determine not only the characteristics of the various components of intelligence but also how they function. One way of doing this is to use the verbalizations of testees as a vehicle to tap the underlying cognitive processes as they work through various problems.

In recent years psychologists have experimented with the use of writing to assess individual cognitive abilities, learning style, conceptual knowledge, and problem-solving skills. Because writing reflects a person's skills in planning, sequencing, labeling, organizing, hypothesis-testing, and other forms of representational thought, the assessor can use analogies to examine the writer's comparative thinking and categorization skills. Observations on how testees assemble, expand, and regroup ideas through writing to represent feelings and experiences can yield insight into how they order their world. As Glaser and Pellegrino (1982) indicate, this assessment approach links learning abilities to concepts in cognitive development in order to identify a person's intellectual strengths and weaknesses.

When the assessment turns to the areas of planning and sequencing, time no longer is a factor. The tests then become directed towards students' intellectual power rather than their speed in completing tasks. The interactions between the testers and the students may now take many forms: verbal, visual, representational, and compositional, just to name a few. Moreover, the contents of the interaction may be analyzed during the initiation process or recorded for later detailed scrutiny and future comparisons. Students can be asked to express themselves from a first person's or a third person's point of view, thus providing information about their ability for subjective and objective analysis. A piece of writing can be assessed in terms of language skills, thought organization, and cognitive closure, all of which reflect the writer's level of cognitive development. In order to ensure reliability in measurement, the expressive performance of a person, whether oral or written, should be assessed over a period of time, requiring different modes of expression and responses to varying situations. The tester seeks to examine both the consistency in performance and the quality of expression as the basis for assessment.

It is evident that the assessment of minority students requires new and innovative ways of appraising behaviour. Above all, there is the need for intercultural understanding and sensitivity. By exploring new paradigms and by experimenting with new instruments, teachers and psychologists can best meet the needs of students who veer markedly from the mainstream within a culturally diverse society.

When viewed in the context of cultural diversity, the innovations described in this article provide the hope that nondiscriminatory assessment can be achieved. Clearly, teachers need to become more aware that standardized norm-referenced tests are irrelevant and inappropriate if they are to achieve the ideals of educational equity in the assessment and placement of students who veer from the mainstream by virtue of cultural, linguistic, and/or socioeconomic circumstances. Dynamic assessment and the approaches suggested by such writers as Sternberg, Budoff, Feuerstein, and Kaufman are opening up new avenues that could enhance and bolster a fairer system of coping with an increasingly complex population of students in the schools of North America.

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John Lewis, Assistant Professor at McGill University in the Department of Educational Psychology and Counselling, received his graduate training at Queen's University and Syracuse University. He has published articles dealing with intercultural counselling and assessment issues. His research interests are focussed on the training of counsellors and psychotherapists working within a multicultural milieu.

Ronald J. Samuda has produced seven books and numerous chapters and articles in the area of intercultural counselling and assessment. He was born in Jamaica and was educated in England and Canada. His graduate studies were done at the University of Ottawa and Stanford University. At present he is Professor Emeritus at Queen's University, a fellow of the Canadian Psychological Association, and North American delegate for the International Association of Cross-Cultural Psychology.

John Lewis, professeur adjoint au département de psychopédagogie et de counseling de l'université McGill, a fait ses études de 2^e/3^e cycle à l'Université Queen's et à l'Université de Syracuse. Il a publié des articles dans le domaine du counseling et de l'évaluation interculturelle. Ses recherches sont axées sur la formation des conseillers et des psychothérapeutes qui travaillent en milieu multiculturel.

Ronald J. Samuda a publié sept ouvrages et de nombreux chapitres de livres et articles de journaux sur le thème du counseling et de l'évaluation interculturelle. Il est né en Jamaïque et a fait sa scolarité en Angleterre et au Canada. Il a fait ses études de maîtrise et doctorat à l'Université d'Ottawa et à l'Université Stanford. Pour l'heure, il est professeur émérite à l'Université Queen's, membre de l'Association canadienne de psychologie et délégué nord-américain auprès de l'Association internationale de psychologie transculturelle.