SOME REFLECTIONS
ON THE USE AND INTERPRETATION OF TESTS FOR TEACHERS

Evelyn Deno

If the decade of the sixties gets to be known as the period in which the clients began to roar back at the establishment high priests, then the decade of the seventies may be remarkable for the scramble which ensues as professionals struggle to find new ways. A soul-searching mood is evident everywhere as professional roles and functions are challenged and performance accountability demanded.

Teachers are likely to be caught squarely in the middle of the crunch which is almost certain to develop as challenge to establishment judgment reflects itself in court decisions, street action, and the voting booth. Next to parents, teachers seem to be the class of people toward whom most eyes turn as professionals consider the possibilities of making community caretakers who determine growth conditions the primary objects of their helping services rather than focusing their address mainly on the troubled individual. As attention shifts to how the system can be changed so it will provide a more healthful growth milieu, time and attention become less fixed on helping clients fit the system that prevails.

Testing has heavily governed educational programming decisions and played a heavy role in determining the form of the system. Questions are coming at the schools from every front regarding the establishment's justification for deciding, on the basis of test performance, what learning opportunities should be open to a child. This pressure, together with the reconsideration of many professional roles and functions, is likely to raise critical questions about the teacher's role, what qualifications he has or needs to be given to perform particular functions, and what intervention instruments and responsibility may safely be placed in a teacher's hands.

The products of test developers were taken over enthusiastically by the schools as though essential clues to educational management resided in test-derived data. In many cases enchantment with tests grew to the point that Kaplan's "law of the instrument" (1964) seemed to prevail. The adequacy of a school or clinic's evaluation system seemed to be judged more by the size of the test battery administered than the amount of action—relevant information provided by the procedures used.

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Now the courts and other public advocates of a child's right to equal growth opportunity are requiring schools to defend the relevance of the criteria they use in making specific educational opportunities available to children, an obligation schools should have been publicly defending all along. Too routine application of test data to education decisions has brought a storm of criticism of both schools and tests, which has in some instances led to court actions declaring determination of educational opportunity on the basis of test scores an abridgment of civil rights (Wright, 1967). Alleged misapplication of test findings has led to abandonment of general ability testing in some school systems.

At the same time that use of tests is being challenged, we hear recommendations that children who are at high risk for school failure should be identified early so constructive intervention can be undertaken during the critical early periods of development when special help is most likely to be effective. Early diagnosis is urged to identify need and predict treatment directions. We even hear recommendations that all six-year-olds be given personality tests to determine their potentiality for future criminal behavior (Maynard, 1970). The intent of the testing would be to institute action to help the child and protect society.

Though we may react with dismay to notions that adult criminal tendencies can be predicted from such tests as the Rorschach administered in childhood, or for that matter any age (Meehl, 1970; Roff and Ricks, 1970), these recommendations reflect a very real public concern that problems be identified as early as possible and appropriate treatment measures instituted.

Concern is expressed that intelligence and personality testing, whether routinely undertaken as part of system implementation or executed for research purposes, constitutes an unacceptable invasion of privacy, and a violation of parental right to determine how a child's personality shall be shaped. With test scores recorded on cumulative records and computers capable of storing and retrieving test data on an individual over a life span, possibilities for restriction of freedom of opportunity because of test records assume frightening proportions. Congressional hearings have been held on the question of confidentiality of information derived through research and diagnosis, and the American Psychological Association has published position papers on related issues which educators might profitably read for their relevance to school intervention in the lives of children (A.P.A., 1970).

Many argue that the school's domain should be limited to teaching of academic skills and cognitive development. Moral teaching and personality shaping are viewed primarily as the responsibility of parents or non-school functionaries. Adherents to this point of view see no justification for a school system probing into the affective life of the child, family relations, or social attitudes. In at least one case, the strength of conviction existing on this point generated sufficient political support to bring about delimitation in the range of clientele which a state's special education program could serve (Deno, 1970).

Evidence on the inappropriate use of tests appears everywhere. The dangers of self-fulfilling prophecy triggered by test scores are highlighted by such studies as those of Rosenthal and Jacobson (1968). Teacher/experimenter attitudes must be considered, along with such long-recognized phenomena as halo and Hawthorne effects, as realities to be taken into account in determining how education can proceed most effectively. The role that test scores play in determining attitudes toward children and education is critical in consideration of how such a powerful social instrument as the schools can be least damaging. The first rule in education ought to be the one Florence Nightingale used for nursing: "First do no harm."

Many people, including parents, have become quite wise about the implications of aptitude testing and the possible effects on the child of using test scores to determine what educational opportunities a child should have, including the matter of how he shall be grouped for instructional purposes. Many parents and even some professionals seem ready to say it may be better to kill messengers who bring bad news than to permit the receivers of the news to go on restricting children's opportunities for development on the basis of what they
believe test scores tell them about what children may be expected to achieve.

In other words, use and interpretation of tests involves socio-political issues and socio-personal consequences as well as the teacher's immediate instructional concerns. It would be much easier if teachers could say, "Look, all I want to know is how to help this one child learn how to read better," or whatever the specific instructional goal may be. The day when a teacher can assume such a narrow focus is gone. Someone is sure to ask "Why? Is improvement in his reading skill really the most important thing in his life right now?" Demands on the school's attention are broadening, not narrowing, their scope, however much some may object to this trend. Bruner (1970) contends that any theory of instruction is a political theory.

Anyone selecting and interpreting tests for instructional purposes is involved in making a swarm of assumptions about human nature, how children learn, what our social goals are or ought to be, and what the role of the education agency ought to be in facilitating the learning of children. Unfortunately educators have too often and for much too long used tests without being sufficiently sensitive to the assumptions they were making in their use. Once use of a test is institutionalized, we are prone to stop asking why we use it. It is never safe to stop asking that question. Special educators have extra reason for care (Deno, 1970).

It seems obvious that educators cannot give up testing in some form. To teach is to be judging every moment of every interaction with a child, how we can respond most productively, how we can best manipulate the factors influencing his learning so as to increase the probability of its occurring. Judging requires measuring, in one form or another, against criteria which are relevant to the decision that must be made. Assessment must and will occur, subjectively or objectively. Our commitment should be to make the assessment as worthwhile as we can, in terms of its contribution to improved learning on the part of the child.

TEST WHAT?

Literally translated, the word diagnosis means to "know between." Diagnosis is intended to bridge a gap between two knowns. Teachers need to ask themselves two related questions in using tests: (1) between "what" and "what" is it that they want to "know," and (2) given that, to what extent can tests contribute to the specific knowledge goal? Who should give what tests is a second-order question growing out of the necessity to divide the labor of life in such a way as to secure the best problem solutions with the most economical expenditure of resources.

Tests are commonly developed to serve three major purposes in pursuit of educational goals: (1) to increase through research our understanding of the variables of which learning is a function, (2) to provide systematic, generalizable data to help make broad program-related decisions, and (3) to uncover variables of which learning is a critical function in the individual case so that treatment decisions can be optimal in that instance.

Unfortunately we have not always been clear about why we want to test. We have selected and used tests without an adequate theory base. We have not been careful enough in selecting and using tests for the purposes which they were designed to serve or are capable of serving. And we have too often tried to place on the instruments of problem assessment full responsibility for what can only be social value judgments for which we must assume responsibility ourselves.

There is little reason to explore extensively in a paper directed to testing by teachers the design, administration, or interpretation of measuring devices developed and used for research purposes. The researcher is accountable for whatever errors or unwarranted assumptions he makes in design and interpretation of his research instruments. However, a word may be said about the dismaying frequency with which educators have taken over tests which an investigator designed for specific research or theory building purposes and put them to practical instructional uses before the limits of the tests' validity or reliability were established. Sometimes this occurs as the test developer stands helplessly by in despair at the monstrously inappropriate conclusions drawn from devices which he never regarded as ready for practical application, or it takes place after he is no longer in position to protest.

In developing what later came to be known as an "intelligence test" Binet was keenly aware of his purposes and the assumptions he was making in trying to develop an instrument which would help him achieve them. His immediate goal was to improve prediction of which children were likely to succeed in the Paris schools and which ones not, under the prevalent educational practices. He took as his basis of prediction what the child had already learned how to do in curriculum areas. The test was a systematic sampling of achievement in critical school tasks as defined by those teachers. Only later did others hypothesize that what had already been learned compared to what most children of that age had learned might indicate what a child was ultimately capable of learning under any circumstances.

Motivated by concern for a daughter who was not an
apt learner under the prevailing instructional approach, Binet's real goal went much beyond the immediate problem of predicting children's school success under the prevailing system. He was trying to build a theory about the factors governing learning so he could help her and other inept learners do better. His writings clearly reflect that he did not assume he was devising a measure of achievement limits nor did he assume that a child's intellectual functioning was somehow biologically determined in such ways that possibilities for improvement of intellectual functioning through teaching were severely limited. Unfortunately, a brilliantly conceived instrument of inquiry was put to use by too many people who did not understand the limits of its power. Its use has roused a storm of controversy (Jensen, 1969; Kagan et al., 1969).

How many ways must a child or an educational problem be characterized before educators can achieve the most effective educational decisions? With the emergence of psychometrics and the educational testing movement the answer seemed to be "the more ways the better." Stimulated by the excitement generated by Binet's apparently successful invention and encouraged by Thorndike's optimistic hypothesis that anything which exists exists in some amount and can be measured, development of test construction technology advanced rapidly. Test scores quickly became the accepted means of defining and describing individual differences. The potentiality and the precedent were there for description of the individual to trigger prediction of probable achievement without adequate regard for how learning opportunity might affect achievement. All too quickly test-based prediction influenced school organization and tailoring of curriculum opportunities to preconceived achievement expectancies. The seeds of self-fulfilling prophecy were planted unwittingly, not with calculated intent.

Having identified individual differences by tests and made assumptions from them about aptitude for learning, school people began to try to reduce the problem posed by the existence of individual differences in classrooms devoted to group instruction by trying to reduce the range of differences with which the teacher had to deal in the classroom. So tracking began, with curriculum demand within the tracks supposedly scaled to learning aptitude as reflected by test scores. It quickly became apparent to any who were willing to look carefully at the evidence that instructional homogeneity is an unattainable mirage. Unfortunately too few were willing to look, so the testing and sorting movement grew.

Following the movement of the times, educators of handicapped children latched onto psychometric devices as a means of moving from the doctor's medical diagnosis which defined a child in physical or mental pathology terms to classification which would hopefully open the door to rehabilitation opportunity. Test scores became potent criteria in determining eligibility for special education service—especially placement in special classes which were, in effect, an extension of the tracking system. In the education of handicapped children, diagnosis has traditionally emphasized establishment of etiology, the root cause of the malfunctioning. Special education's diagnostic-treatment model aped the approach of medicine which logically sought to discover the disease agent producing the symptoms of illness so treatment could be directed to eradication of the source of the symptoms (Sharma, 1970). This seemed natural given the fact that special education's clientele was primarily a medically defined population.

Carryover of the medical model into special education practice led to grouping children according to handicap categories on the assumption that similarity in underlying disease process produced similarity in learning-related symptoms. Having discovered in both regular and special education practice that the problem of individual differences in learning styles is not likely to be resolved by sorting to match group members for one particular characteristic, the use of tests for educational classification and achievement prediction has become highly suspect. The goals were sincere and laudable but the instruments too weak to bear the burden. Some other way of formulating the universes to be known through diagnosing was—and still is—needed.

In special education this thinking led to strenuous efforts to link test responses to underlying physiological conditions so the gap between physical state and instructional methods could be bridged. Assuming that this provided direction for the teaching task, the training of special education teachers included a considerable amount of course work devoted to understanding the underlying physical pathology presumed to be governing the teachability of the handicapped child. Fortunately or unfortunately, psychometricians discovered doctors increasingly using psychometric and behavioral evidence in making their own "medical" diagnoses. The teacher began to say to the diagnostic specialists, both physicians and psychologists, "Look, you have just taken the child's behavior symptoms as I described them to you in the referral and put them in other words—the verbal code of your discipline instead of the language of mine. What has your diagnostic study told me that I didn't already know or that I can do something about? What have you told me that will help me determine how to teach the child more
effectively?” Good questions.

Research indicates that the presumed linkages between underlying physical conditions and learning behavior are highly speculative, fragile, and variable. New technological capabilities may help to advance research so these relationships can be better understood, so that knowing the physical condition provides better guidance for instructional planning. However, extensive research must be completed before meaningful knowing between underlying physiological states and what bestriding these states may have on teaching can be established. And this kind of inquiry goes much beyond what the teacher can hope to accomplish alone.

Seeing the difficulties, workers have begun to explore for approaches to educational diagnosis which would give teachers better help in meeting their instructional charge: Many special educators and psychologists sought to develop diagnostic instruments capable of leading teachers more directly to the remedial procedures to be applied without detouring through diagnosis of physical status. The Illinois Test of Psycholinguistic Abilities is an example. Those who pursue this direction hope that the “what” of test-reflected behavior can be matched carefully to the “what” of instructional materials and methods to produce optimum teaching. This direction has been pursued more vigorously in the cognitive development and school-skill-acquisition spheres than in affective development realms.

Recently efforts have been made to reduce the amount of assessment noise introduced by irrelevant information generated through unproved, intermediate assumptions in formulating what we need to “know between.” One way this is approached is by using the learning task to be imposed as the assessment instrument. The criterion to which assessment is related in this approach is the specific skill to be taught. It is hoped that by reducing the learning task to its hierarchic elements it will be possible to determine which steps in the task sequence the child is not able to perform so instruction can be directed to those areas in a carefully controlled manner, and the performance criterion achieved more efficiently.

Basically, the teacher teaches the test under this system of task analysis. The intervening universe of inference is substantially reduced under this approach—provided one is able to adequately define the task’s demand and the learning sequence as it exists for the individual case. Some people seriously question whether prediction of learning sequence in the individual instance is possible (Hart, 1969).

Bátman (1967) provides a convenient summary of the similarities and contrasts in three approaches to diagnosis: the etiologic, the diagnostic-remedial, and task analysis. A paper by Ensinger which appeared in the February 1970 issue of Focus on Exceptional Children describes in detail how some of these approaches may be applied, and some of the problems inherent in their use. These are recommended readings so their content needs no summary here.

All we can say with certainty is that we are finding it hard to move from description of child characteristics to educational decisions. We have been led to this juncture by tests which tell us more about groups and individuals in reference to group averages than they tell us about how an individual functions as a human being. The educational utility of this conventional, norm-referenced approach to assessment of individual learning needs is open to serious question. Teaching calls for more refined assessment which relates directly to treatment alternatives.

Within the field of psychology, professionals took two different routes to trying to understand and predict human behavior. The “psychonomy” approached the problem through study of individual differences using psychometric (test) approaches. The experimentalists approached the problem through tightly controlled laboratory procedures, often using lower order animals as subjects in order to control the range of characteristics present in subjects and allow freer manipulation of treatment conditions. Cronbach (1957) describes this history and its effects on practice. Development of psychometrics contributed heavily to correlational studies applied in the schools in ways which tended to maintain social class differences and confirm expectations.

Under the experimental approach it was possible to gain insight about the effects of varying treatment conditions on the behavior of organisms of identified characteristics. This is the kind of information a teacher needs to have at her command to predict how the child’s learning is likely to be affected if she varies external conditions in particular ways. Unfortunately, until recently the work of the experimentalists has had less effect on education than has the work of the psychonomes. More recently experimentalists’ findings are entering school practice through the behavior modification door. The possibilities are richer than many yet see because the application of principles has been too narrowly centered on behavior control.

It is many years since Cronbach (1957) pointed out that our available methods of testing tell us too little about what to expect from the interaction between learner aptitudes and treatment. If interaction of treatment with learner characteristics is what teaching is all about, this is the essence of the domain we hope to become knowledge-
able about when we diagnose. However, there are few, if any, tests extant which lead us directly to this payoff. We cannot approach the degree of prediction which has been attained in medicine where specific disease-producing agents have been precisely identified and the treatment which eliminates them has been identified with equal precision. The "causes" involved in learning are seldom singular. They are almost always complex and multiple. Learner "aptitudes" tend to be unstable, and what contributes heavily to causation in one case may have much less bearing in another.

Educators are forced to map the route to their goal by making a series of relatively unproved assumptions, making many inferences from incomplete data, hoping all the while that these hunches are correct, and relying upon instructional outcomes to indicate whether they have guessed poorly or well. This guessing is necessary, given the present state of our knowledge, but it frequently does little to reveal whether the approach succeeded or failed for the reasons assumed. The procedure seldom indicates whether the instruction helped, whether the learning would have occurred with greater ease if it had been approached otherwise, or whether the child would have learned better if the teacher had not intervened at all. Such guessing militates against refinement of instructional theories unless we control conditions in specifiable ways and continuously evaluate. Few classroom situations, teacher skills, or teacher time allow control of all of the conditions which need to be controlled to establish generalizable proof. The question of how we can structure the classroom situation and support the teacher so as to make possible essential inquiry which involves continuous assessment of both children and the learning circumstance is another good question.

Reynolds (1966) suggests that a teacher's decisions must be more like personnel decisions, as described by Cronbach (1965). He argues that the teacher has to make a decision of what instructional system she should assign the child to just as a personnel man seeks to make the best possible match between individual worker characteristics and job demands.

While the personnel decision analogy may be pertinent and move us beyond the relatively useless broad band classifications deplored by Engelman (1967) and others (Dunn, 1968; Reynolds, 1966) there is a problem in the analogy. We hope that teachers will manipulate the factors in the learning environment (i.e., the instructional system) to fit children's learning possibilities rather than considering the instructional alternatives to be a predictable stable system. We have too long been fitting children to systems rather than the reverse. Reynolds' intent is clearly achievement of more effective individualized instruction so the problem may be more semantic than real. However, the distinction is too important to allow its loss in reasoning by analogy. Industry and the armed services have developed more stable job slots (systems) to which to predict.

What we wish to diagnose and predict, then, is the interaction between child characteristics of sufficient stability and established relevance to warrant their consideration and the constructive intervention options it is possible for educators to devise. Recognizing that what a child learns is determined by interaction between his organismically integrated characteristics and environmental variables, we can no longer look simplistically for narrowly defined "causes" within "the little black box" that is the child. We must look to the outside factors conditioning his growth as well. It may be the instructional systems which are a primary "cause," not inner gremlins.

The concept of instructional systems must include the teacher who is the system for manipulating instructional variables, the setting which enables or prevents manipulation of learning factors in productive ways, and the materials used to stimulate and reinforce child behavior. We have very few tests for diagnosing these system characteristics whose interacting influence we hope to predict and manipulate. Being disenchanted by the incompleteness of what we have accomplished so far, we can only stand still for a moment and re-examine our assumptions. With entry of new objectives, many traditional test devices become open to question.

WHAT SHOULD THE TEACHER'S ROLE BE?

Tradition has prescribed a role for the teacher which underestimates his potential for understanding and modifying child behavior. Back in the days when problem causes were thought to reside in a realm in which only medical people or possibly psychologists were equipped by training to intervene, teachers were socialized to great humility about the limits of their ability to "diagnose," "understand," and "treat" developmental deviations. However skillful a teacher might be in identifying factors contributing heavily to a child's maladjustment and manipulating as many factors as she could control to the child's benefit, she was careful to make no claim that what she was doing might be considered "diagnosis" or "therapy."

Teachers were expected to spot problems or even behaviors that suggested the possibility of future problems if none existed as yet. But their responsibility was generally to alert the principal so he could decide whether
referral for study was in order. Full study generally, but not always, meant examination by an interdisciplinary team. Once the team had completed its diagnosis a report was returned, usually to the principal where all too often the communication chain ended. Sometimes this happened because the administrator's priority goal of efficiency led to quick and neat filing away of the report without sharing of its contents. Sometimes school system policies assumed that some more highly trained specialist would have to interpret the report to the teacher. With strict regard for their confidentiality responsibilities, social workers or psychologists might deliberately keep teachers from knowing that a child was struggling to cope with the impending divorce of his parents not realizing that at the same time he was having to leap the "third grade hurdle" imposed by the curriculum standards of his school system.

Being in the discipline that developed most of the measurement instruments psychologists quickly came to be viewed as specialists in testing. There have never been enough psychologists to assume responsibility for all of the different kinds of testing which go on in schools. Certain other personnel commonly employed in school settings have been allowed responsibility for administration of certain kinds of tests, particularly group tests such as reading readiness, academic achievement, vocational interests, college aptitude, etc. The "right" to administer individual intelligence tests has traditionally been reserved for psychologists in spite of the fact that school counselors, remedial reading teachers and others may have taken the same testing courses psychologists have had. This restriction of use was commonly justified on the grounds that only the psychologist had sufficient training background to safeguard interpretation of results. So, just as the physician came to be identified by his little black bag, the school psychologist came to be identified by his test kit.

As development of special education services advanced in the schools and psychological test results began to play a heavier role than medical diagnosis in establishment of a child's eligibility for special education service, the psychologist became a primary agent in sorting out and classifying children for assignment to the kinds of organizational units thought appropriate for handicapped children of various types. The special education teacher was conceived as one who took over after the diagnosis had been made—i.e. the specialist who presumably knew how to treat a particular kind of "disease." Her credentials reflected the assumption. She was trained and credentialed as a "teacher of the mentally retarded," "teacher of the hearing impaired," etc.

The manner in which many professions played their roles had to change as treatment for the mentally ill moved out of the hospital clinic into community settings. "All or none" views on who is considered qualified and should be licensed to practice began to be openly questioned, and who should do what came up for critical re-examination (Bennis, 1970). In part, but only in part, new service delivery forms were forced into being by the fact that too few specialists existed to reach all who needed help via the traditional clinical model. The important relationship between manpower requirements and conceptual models did not go unnoticed (Albee, 1968; Bandura, 1960; Bennis, 1970; Dumont, 1970; Miller, 1969).

Movement to in situ treatment contributed to an expansion of interest in the schools as one of society's instruments of social growth-promotion having contact with more children for more hours than any other agency. Since teachers are the primary systems through which the educational system's mission is implemented they are primary targets of advice coming from many disciplines. Teachers are expected to integrate or synthesize this many-faceted advice through the manner in which they teach so that it fosters the total growth of the child.

It seems plausible that teaching effectiveness should be enhanced if the insights achieved by a variety of professional disciplines can be fed into the decision-making process in a productive way. Unfortunately, the much-vaunted team approach has seldom provided information which comes together in a well-integrated manner through an over-arching instructional theory. The team effort has usually stopped at the point that each profession did its own thing according to its own treatment theory and contributed its section to a composite report. The teacher was then expected to digest this mélange and convert it into a healing learning experience for the child.

Too little recognition was given in the past to the width of the chasm which the teacher had to try to bridge in making this conversion from the theoretical set of the various disciplines to the stuff of which her intervention potential was made. Teachers recognized this when they argued that psychologists were not being very helpful when they merely gave tests, established a child's eligibility for service, and affirmed the existence of unresolved personality problems in the child. The teacher's cry was for somebody to help make the leap from child description to selection of appropriate materials and methods and rehabilitative management of the child.

Since teachers were asking a valid question in this case and the child's learning history has come to be recognized as a factor of transcending importance in determination
of what form a child's coping takes, the teacher's challenge has not gone unheeded. Not only is the need to redesign the function of various professionals recognized, but the teacher is becoming a central figure in on-going, continuous diagnosis and evaluation.

Teaching requires continuous evaluation. This conception of evaluation involves more than administration and interpretation of formal tests, and it may not need to involve testing at all. The Claser teaching model illustrated in Figure I indicates the steps involved in the kind of evaluation which seem appropriate for teacher implementation.

Figure I

A BASIC TEACHING MODEL*

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A | B | C | D
Instructional Objectives ↔ Entering Behavior ↔ Instructional Procedures ↔ Assessment
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*After Claser, 1962, p. 6

Complete analysis of the implications of this kind of teaching role for who assesses what and the training of teachers goes beyond the possibilities of this paper. Suffice to say, the implications are profound and reach deeply into the question of "Why teach?" which must be answered to some level of sufficiency before there can be any answer to the question of why test or how test. It also reaches deeply into the question of who does what in the school systems' division of labor.

WHY TEACH?

To assume the mantle of teacher implies belief that a child can achieve something better with pedagogic intervention than he can without it. What the teacher hopes to help the child become is a first order factor in test selection and interpretation.

Whether the teacher assumes she is trying to help her pupils achieve maximum self-realization or whether her primary focus is on preparing them to fill prevailing socially-sanctioned roles will determine how she goes about teaching. Her approach to teaching governs the usefulness of one kind of test as opposed to the value of another.

All teachers are likely to say that they are trying to help each child achieve his maximum potential—a laudable, much verbalized, humanistic goal. In spite of the wide acceptance of the validity of this goal, the educational effort has primarily served managerial ends—i.e. schools have served as a way to find the most suitable candidates for a wide range of socially defined roles (mainly work roles) and shape students through education to fit more comfortably and acceptably into what is (Green, 1968).

A first-order problem in setting maximum realization of potential as an educational goal is that we don't know what the limits of human potential may be. Our assessments have mainly been directed to what is. In the case of children, this is what most children of a given age can do. We gear instruction to what is rather than what it is possible for humans to be. Dr. Abraham Maslow (1969) to whom we owe so much insight into the possible roots of human motivation provides a thoughtful discussion of this problem.

Concern about what humans are capable of being is not confined to biologists, philosophers, anthropologists, or behavior scientists. The current human potential movement attempts to explore the possibilities of man's unawakened resources. Interest in this movement has spread to the extent that popular magazines consider it a question of sufficient public interest to invest considerable space to its discussion (Time, 1970). Erikson (1968) sees some of the current behavior of the young as an extension into a public, more widely acknowledged guest of what was in the past a more secret, individual search for identity which typically mounted to crisis proportions in adolescence.

Possibly the mounting interest in this country in the British Infant School, open classroom, and Summerhillian approaches to education is fed by this general surge of concern about what our past emphasis on becoming a good worker in terms defined by the socio-economic order has done to human integrity. Whatever the roots may be, a teacher is forced to recognize that norm-referenced goal-setting and test interpretation is likely to require defense within a framework of how deviation from what is typical may interfere with optimal human development.

In a provocative paper entitled "What are Boys and Girls For" Krippner (1970) suggests some of the ways school practices might change if individual differences and the long-verbalized goal of maximum self-realization were taken seriously in instruction. One thing is certain—the range of variability in performance would almost certainly increase and judgment would focus more centrally on comparison of individuals with their own past performance than on their achievements in comparison to a test-derived mean.

Though educators may be willing to entertain self-actualization as a primary instructional goal, parents and the school's tax-supporting public are likely for some time to demand documentation of performance in terms of standardized achievement test scores. As with such working constructs as "intelligence," self-actualization is not
likely to be taken seriously until means are developed to document its accomplishment on some numerically calibrated scale. At that point, the construct may share the disaster of being refied as an entity which explains child performance, as has already happened to tested IQ.

HOW TEST?

The accountability demands on our time will require schools and teachers to state more clearly what they expect to accomplish in terms of changes in pupil behavior they hope to produce. There will be demand for more acceptable evidence that children are moving toward the goals specified. This will require that teachers know how to use evaluation measures capable of reflecting changes in child behavior. Very few, if any, of our commercially published psychometric devices are capable of providing such data.

Instruments such as the Stanford-Binet, the WIPS, WISC, WAIS, the Bender Visual-Motor Gestalt Test (BVMGT), etc. are at best no more than gross screening tests which reflect a child’s current achievements as he expresses them under conditions prescribed for the test’s administration. The child’s response to the test items can give us important clues about what realms it may be profitable to explore further if we analyze item or subtest responses instead of just looking at overall score. But if we want to change the child’s behavior in specified directions we have to ask questions which it is very likely that such tests can’t answer. Teachers need to ask such questions as the following:

Are there characteristics of the educational setting which contribute significantly to the problem?

a. If a child is a behavior management problem in the classroom is this in part because schools in this country are generally too obsessed with need to control behavior? Is it really appropriate that we always assume that any child who resists conforming and working hard without asking why (as our Puritan ethic emphasis in the school demands) must be regarded as “sick” so we are justified in looking for causes that will make his behavior control a medical responsibility? Ladd’s (1970) recent article, “Pills for Classroom Peace,” provides an excellent discussion of some of the issues involved in the whole question of classroom control.

b. Is our standard school day the most advantageous period of formal instruction for children, all children? Are the reasons for our length of school day—primarily social—to keep children off the streets, to keep them off the labor market, out of their homes, to take care of them while their parents work, or for administrative convenience (transportation, etc.) rather than because the hours prescribed are the best time of day from the standpoint of achieving specified learning goals? If these social reasons prevail as well as learning ones, should we not organize and staff our schools differently so the teacher can achieve better control of the factors which need to be controlled to facilitate desirable learning?

c. Are the instructional approaches recommended by the curriculum supervisors of the school system involved more likely to create one kind of pupil fallout than another? For instance, where along some continuum of phonics emphasis does the school system’s basal reading system fall? How much of the school day is invested in direct reading-related instruction in the kindergarten, first, and second grades? Is a highly structured approach used or is there more emphasis on letting the child be the guide to his own rate and sequencing of experiences? To what degree are the characteristics of fallout children governed by the characteristics of the mainstream curriculum?

Studies by Shove (1970) and Johnson (1970) give us indications of which tests among those commonly used for identification of children who get to be labeled “learning disabled” or “disturbed” are most effective in discriminating these children from those considered “normal” learners when particular programming criteria are in operation. In these studies the BVMGT proved to be a better discriminator than the Erostig or ITPA tests. But what help does this give the teacher in her instructional decisions? It tells psychologists working in the state program involved that they will do better to use the BVMGT, which takes much less time to administer and applies over a larger age range than the ITPA, if their responsibility is merely to certify a child’s eligibility for special education service or predict those children likely to be referred for such service. The teacher must ask further questions such as:

1. If tests indicate deviation in perceptual functioning should I provide instruction that will improve pupil performance on the BVMGT? Whether my pupils perform well on the BVMGT is not what the public
is going to be asking me. If I improve my pupils' performance on the BVMGT will whatever led to that improvement operate to improve their reading performance as well—which is what my principal and the public are going to ask me about? Would I do better to teach directly to the skills which are my specified instructional objective and weave into that instruction whatever help the child needs to learn to attend, meet task requirements involving visual-motor coordination, crossing the body midline etc. as Bateman (1967), Cohen (1969), Haring (1969), Lovitt (1967), and others contend? Or should I proceed on the assumption that some kind of basic problem-solving ability can be improved by training aimed at raising performance levels in these kinds of test-identified areas, even thought I know that: (a) the label which identifies a set of items that seems to hang together either through construct validity or factor analysis may not be an accurate descriptor of a discrete, basic, underlying ability essential to a wide range of problem-solving behaviors, and (b) the history of transfer of training experiments suggests that wide generalization is difficult to achieve from training in highly specific elements? (Mann, 1970).

2. Compensatory education programs such as Headstart have had a hard time showing striking long-term advantages in later classroom performance of children who had received special training. Was the training inadequate or is it possible, as Zigler (1966) suggests, that cognitive ability is a less malleable function and a teacher might do better to work on the affective, conative elements which influence how effectively cognitive ability is employed in basic problem-solving? Should the heart of my curriculum be teaching learners how to learn? Can this be done? (Bruner, 1970).

Teachers will need to ask the psychologist what tests exist to help answer such questions; the honest psychologist will have to answer that there are very few. The psychologist may be inclined to say that the teacher and psychologist will need to sit down together and figure out (1) how to develop the best possible performance objectives, given the end goals of instruction adopted by the school system they are serving, (2) how to determine child learning needs with reference to the performance criteria specified, (3) how to manipulate the learning conditions (select stimulus materials, organize the setting, reinforce desired behaviors, etc.) so as to maximize the probability that the desired learning will occur, (4) how to assess whether the child's behavior is changing in the direction desired, and (5) how to readjust elements in the cycle in the light of the outcome evidence achieved.

Few psychologists know enough about curriculum, instructional methods, and materials to translate a child's cognitive, affective and conative characteristics into a teaching prescription. Few teachers presently at work know enough about child development to pinpoint the aspects of developmental deviation which may interfere with the child's performance of the task demands which, her instructional practices impose. Further, since she herself is one of the factors conditioning the process, it is difficult for her to stand outside herself to see what she is contributing to the child's success or failure.

The formal tests we now have can't answer these large questions, they can only help if skillfully used. In many places a new breed of professional, described variously as "educational diagnosticians," "learning disability specialists," etc. are being trained. In at least one state such personnel are required by law to be members of child study teams. Usually these people have more training and experience as teachers (i.e., knowledge of curriculum, materials, and methods) than most psychologists have and more knowledge of children's developmental characteristics and assessment procedures than most teachers have. At the same time psychologists are seeking ways to give away their knowledge to those in the best position to apply it (Miller, 1969).

However the "know between" gap is bridged, it is evident that knowing how to teach and assess with reference to specific learning outcomes are at the heart of the matter, that common sense as well as our limitations of resources dictates that we go as directly to the nut of the problem as possible. The hours spent giving formal tests often don't yield as good action payoff as more direct action criterion-referenced assessment procedures. We urge teachers to invest time in learning how to be systematic observers of child behavior once they have given serious thought to the legitimacy of the classroom performance criteria against which they will judge this behavior.

We urgently need to reconsider what constitutes valid educational "tests." We can't do this until we have admitted the gravity of our present crisis in education and explicitly asked for and taken a position on what education should do for children. Nor can we select tests appropriately until we have carefully formulated an instructional theory to guide our choices. It remains true that there is still nothing as practical as a good theory (Bruner, 1966; Gagne, 1965).
REFERENCES


INDIVIDUAL ACADEMIC EVALUATION

Pauline M. Lane

There are many evaluative instruments and teams available to schools which are interested in the evaluation of their physical plant, their personnel, and even their school program. None of these evaluations take into account what happens, or fails to happen, to a student in a seemingly ideal situation. It is the feeling of this writer that certain desirable behaviors must have taken place.

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in the student before any aspect of a program could be labeled adequate. Hence, student evaluation is of prime importance for any program to be considered workable. This paper is concerned with academic evaluation and the curriculum content which produces this achievement.

Perhaps the most widely used test for measuring academic growth in the area of mental retardation is the *Wide Range Achievement Test*. This test, along with other standardized tests, has inappropriate norms for the retarded population and is based on "grade" placement. Because standardized tests were constructed to show the range of performance within a designated group rather than to be used for individual performance or even grade placement, their intent is being misused. Also, they were standardized using the "normal" population, thus giving inappropriate norms for use with the retardate. The failure of standardized tests to show either strengths or weaknesses is confusing to teachers who are desperate for some instrument that will give some recognition of having made progress on the line continuum of a learning task.

According to some of the best qualified reviewers in Buros' *Mental Measurements Yearbook*, usually standardized tests will have common discrepancies such as those noted by:

Verner M. Sims—Professor of Psychology, University of Alabama—describing the WRA7:

The fact is, the author does not actually claim it measures school achievement except by name and through inference. He does propose it, however, as a valid measure of ability in the fields of reading, arithmetic, and spelling. In view of the evidence at hand, the reviewer is not willing to accept even this assumption; certainly not in the cases of arithmetic and reading... with any wide-range test, the measurement is bound to be relatively crude. 3:21

Henry S. Dyer—Vice President, Educational Testing Service, Princeton, New Jersey—reviews *Metropolitan Achievement Test* by saying:

It is high time that test publishers ceased perpetuating the myth that the so called "grade equivalent scale" has any useful normative meaning. 6:15

The above statements were made about the "normal" population. If they are true for them, how much more it applies to the EMR segment of our school population.

It is generally accepted that an academic program for the EMR functions best using the ungraded system of pupil placement. Hence, testing to determine grade level is ambiguous and serves no instructional purpose.

Many articles published in professional magazines and journals during the last two or three years have stated specific areas where evaluation is of prime importance. Maynard C. Reynolds, in a paper presented at the 44th Annual CEC Convention, Toronto, April, 1966, described the "Crisis in Evaluation." His main concern was for evaluation of Federally-supported programs being carried on all over the nation. Other points of emphasis more directly related to the individual school's curriculum were:

The most important requirement of an evaluation is that it reveal as objectively and as fully as possible what is happening as a result of the project. It should show the specific abilities or other attributes that are developing among students, the extent of such developments, and the interactions among pupil characteristics and other variables as the project proceeds. (p. 586)

He summarizes by saying, "Strong effort should be made to develop techniques and instruments of measurement which are useful in special education." (p. 590)

Many other statements are to be found in current literature; but unfortunately, little specific help is available to the classroom teacher who is charged with the task of reporting to parents and administrators what a certain student has accomplished, or failed to accomplish, in a certain time segment. For teachers who are fortunate enough to be associated with school systems that offer diagnostic and/or prescriptive teaching, there are now some very fine instruments for student evaluation.

There are many non-specialist teachers still searching for a vehicle of measurement that will reflect a modicum of learning, which is the usual rate of learning for the retardate.

Among leaders in the field, there are disagreements as to the best method for evaluating academic growth for the EMR. Slaughter says, "... the teacher's judgement must be relied upon... The record which best helps both teacher and pupils to evaluate progress made should be selected for use..." (p. 154-6), while Carton feels that a narrative description is the best way to indicate change. According to Conner, "Evaluations must be made on each detail of the Curriculum Guide. This might be done on a line continuum." (p. 299) Englemann is forthright in saying:

For educational objectives to be acceptable, they must be stated in terms of specific tasks that children should be able to handle after training. These objectives articulate subskills and serve as the basis for testing children. (p. 28-9)

The relationship between development of specific curriculum content and the evaluation of the individual student's progress now becomes evident. The teacher must know the exact goal toward which he is striving. Only then will he be able to establish a curriculum to meet that goal. Specific evaluation will then be possible.

This writer is not presuming to say that the method
now being used in the academic area of ACC is the ultimate solution to the interrelated problems of curriculum content and evaluation. This method is offered to the non-specialist teacher as a partial solution to the problems.

The process of compiling specific curriculum content begins with the determination of the ultimate educational goal and the corresponding skill-level necessary to achieve that goal. The skills and performance levels that are prerequisite are arranged in order from the most basic to the most difficult. The continuum of performance, as this writer chooses to call it, is established according to the manner in which most people acquire a given skill to accomplish a given task. It is incumbent on the teacher to make sure that his organization of the continuum of performance reflects as nearly as possible the "normal" learning sequence. The various subskill should be arranged in a stair step progression where each new one incorporates all previously acquired subskills.

With curriculum content and the sequential order of presentation fairly well established, the teacher presents and develops the facts and/or concepts for a stated, or chosen, time. A test constructed to cover this material gives an objective evaluation of student performance for this small segment of learning at the test interval. This type of evaluation is applicable to the academic and performance areas. If a task can be stated, it can be evaluated.

To be specific, the stated objective is to tell time (Item #7 on Profile):

1. by the minute (VII)
2. to the quarter-hour (VI)
3. to the half-hour (V) and
4. to the hour (IV)

These tasks are stated in sequence from the most difficult to the easiest, but the corresponding subskills are listed in the natural learning sequence. These tasks are:

1. the ability to count to and recognize numbers to 12,
2. count to and recognize 10 by 1's, 5's, and 10's,
3. count to and recognize 45 by 1's, 5's, and 10's,
4. count to and recognize 60 by 1's, 5's, and 10's.

By the fourth stage, the retardate should see a relation of \(\frac{1}{4}, \frac{1}{2}\), and the whole hour.

In a completely ungraded situation, arithmetic should include only the functional aspects that would enable an adult to function more adequately as a worker and a member of society. It is felt by those concerned with the curriculum content that these areas are:

1. the ability to count, rote and rational
2. to read numbers
3. to write numbers
4. to add
5. to subtract
6. to use functional measurements
7. the handling of money
8. to read a clock
9. to read a calendar, and
10. to use quantitative and qualitative terms.

The ability of the student to perform the sequential learning tasks in each of the above areas will determine his arithmetical profile. A student may function in Phase VI of addition, Phase III of Money, Phase V of Clock, and Phase VII of Calendar. "Phase" is the word chosen to describe a segment of learning, or a particular subskill on the continuum of performance. This is an arbitrary performance level, dictated by what is expected to be accomplished in a chosen time. The teacher and curriculum coordinator must determine the needs of the student, delineate the subskills and give an approximate time needed to acquire those skills. Thus, the arithmetical profile provides a specific curriculum toward a stated objective and a timely method of evaluation.

The following is the arithmetical performance profile. It consists of the ten functional aspects of arithmetic previously listed. Each task lists seven groups of subskills on the continuum of performance, but only the last five in each are listed.

Each phased task is small enough so that a modicum of learning will show up as progress. This could not be shown on a report card and would be very difficult to describe in a narrative form. This Performance Profile is very effective in showing parents and teachers the exact progress of the pupil, as well as indicating the next learning task to be undertaken.

By using this minute delineation of learning tasks, it might appear to other disciplines that everything is taught in isolation. Isolation of the learning tasks is done only for the purpose of identification and drill. Teachers who use a "learning plan" (unit) find it possible to incorporate the tool subjects into a Social Learning situation so that the student sees the relation and use of everything being presented to him.

The following example is one of many instances showing how the Arithmetic Profile has helped with student placement:

Marsha, a new resident at the Arkansas Children's Colony, could tell time by the hour; by the half-hour, saying 6:30 and/or half-after 6:00; counted money by saying two quarters make a half-dollar; and did simple addition. This information was given through another discipline so that Marsha was scheduled into a group whose general level of performance was in this range. In a very short time, the teacher discovered Marsha's ability to add to the sum of ten (10). When the Profile was run on Marsha, it was revealed that she could not count beyond eleven (11). This indicated no real understanding or concept of time and money, just rote learning. When the teacher started instruction at her level of understanding, she was soon able to count to thirty (30) in a rational manner and time began to have meaning to her. In like manner, addition was soon accomplished to the point of being able to add with carrying.

CONCLUSION

Teachers who have worked with and contributed to the Performance Profiles in Arithmetic, Reading, Sewing, Homemaking, and Shop agree that—in the absence of a completely structured program—they do have scope, direction and sequence for presenting learning tasks. This allows them freedom in selecting methods and materials to achieve a definitely stated, attainable goal. A four-year period of use has revealed many facets of learning not easily discernible with an inadequate evaluation system.

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WASHINGTON REPORT

The role of the federal government in education for the handicapped is shaped by the fact that limited funds must be used to serve a large population. The Bureau of Education for the Handicapped (BHE), in trying to make the most efficient use of federal monies to provide adequate services for handicapped children, recently formulated six objectives which it will concentrate on accomplishing during the next five years. These objectives, which support the Bureau’s primary goal of improving education for the handicapped, are listed below.

1. By 1976, assure that at least 60% of the handicapped children are adequately served by educational agencies.

2. By 1973, develop programs and models, and in other ways assist in the prevention of disabling handicaps through relevant early education for 25% of all potentially handicapped pre-school age children.

3. By 1976, develop and promote the installation or adaptation of relevant vocational education models leading to adequate career training and job opportunities for all handicapped youth.

4. By 1976, provide systems and resources so that significant and relevant educational materials are readily available to all teachers of the handicapped, so that at least 60% of the handicapped children will be served.

5. By 1976, in cooperation with the Bureau of Education Professions Development, increase the number of trained personnel (subprofessional and professional) so that 60% of the handicapped children have adequate instructional and supportive services.

6. By 1973, develop programs and practices that demonstrably change the attitudes of education professional, lay personnel, and employers towards greater acceptance and increased realization of the potentials of handicapped children and youth.

If these objectives are fulfilled a large number of handicapped children not currently being served would be reached and helped. There could be no wiser use of federal resources than such an investment to develop the potential of the individual—to improve the quality of a child’s life so that he might be enhanced and the nation enriched through the utilization of a unique and valuable human resource.

RESOURCE MATERIALS

By Avarit Wedemeyer and Joyce Cejka, Resource Consultants

Helping Young Children Develop Language—A Book of Activities by Merle B. Karnes, 1968. This book was originally developed to be used with disadvantaged preschool children; however, activities can be adapted for use with older children. Each chapter is devoted to a skill area measured by one of the subtests of the Illinois Test of Psycholinguistic Abilities. The five major processes involved are: (a) understanding (decoding), (b) determining relationships (association), (c) closure (integration), (d) expressing ideas (encoding), and (e) memory. Various instructional techniques are described as well as commercial games and devices.

The book may be obtained from Council for Exceptional Children, 1201 Sixteenth St., N.W., Washington, D.C. 20036. It is priced at $2.75 per copy.

Application of Pupil Assessment Information, by Bill R. Gearheart and Ernest P. Willenberg. This new book describes the types, purposes, and appropriateness of various testing and evaluative tools and techniques. It is available for $2.95 from Love Publishing Co., Dept. EC-8, 6635 E. Villanova Pl, Denver, Colo. 80222.

Aids to Psycholinguistic Teaching by Wilma Jo Bush and Marion Taylor was published in 1969. This is a compilation of remediation techniques for the subtests of the Illinois Test of Psycholinguistic Abilities.

Areas covered in the book are: auditory and visual association, verbal and manual expression, grammatical closure, auditory and visual sequential memory. Each chapter has a brief explanation of the skill area along with general suggestions for the remediation of the skill. Specific techniques are given for each grade level starting with grade one and continuing through grade eight. There is a chapter on perceptual-motor activities and one on remedial recreation. Visual, auditory, tactile, and kinesthetic techniques are covered in the final chapter.

This book is available for $10.00 from Charles E. Merrill Publishing Company, Columbus, Ohio.

FOCUS ON EXCEPTIONAL CHILDREN back issues are available. Single copies 80¢, 2-9 copies 70¢, and 10 or more copies 50¢ each.
PROBLEM 5

A new boy is placed in your intermediate level classroom. He is from a wealthy family which has both overindulged and sheltered him. The boys in the class, most of whom are from lower socioeconomic homes, have subjected the new arrival to considerable hazing. The new boy has reacted immaturity to their hazing with verbal boasts and name-calling. These tactics have resulted in many recent fights in which the new arrival comes out second best.

What should the teacher’s role be in this situation?

It is the teacher’s responsibility to predict potential problems and structure events and relationships in such a manner that positive situations are likely to emerge. Thus, a teacher must be much more than a skilled conveyor of pedagogy; she must also possess the competencies of a strategist, a mediator, and a counselor. Let us apply this positive approach to the problem described above.

Time will solve many aspects of this problem without the teacher’s intervention. A new member to almost any group is subjected to a certain amount of testing and hazing. Thus, it would appear that the major problem is not class behavior, but rather the boy’s lack of a behavior repertoire that will cope with the situation. The teacher who would rush to shelter this child does him no good and would probably injure her relationship with the class. This situation requires careful consideration and skill, not an emotional response.

Assuming the class possessed a reasonable degree of harmony before the arrival of the newcomer, an analysis must begin with him. The teacher must seek answers to the following kinds of questions:

1. What aspects of the boy’s behavior initially triggered the class hostility?
2. What changes must take place in his behavior before he will be accepted by the group?
3. What assets does the child possess which might be positively perceived by the class?
4. Will this child be receptive to counseling, and if so, in what fashion?
5. Do I have the cooperation of the child’s parents? (This may be particularly necessary if it is decided to let the child learn through his mistakes.)

Answers to these questions must be very specific. For instance, to simply identify that the youngster’s behavior is immature is not enough. The teacher must determine what about the child’s behavior is immature and under what conditions such behavior is exhibited. Following an analysis of the newcomer, the teacher must analyze her class. She must seek answers to the following kinds of questions:

1. What members in the class are initiating the hazing and is it for personal recognition?
2. Where is this hazing taking place and under what conditions?
3. Which members of the class have the greatest potential for making a positive contribution in this situation?
4. What procedures are most likely to be effective with the class in this matter?

Armed with answers to these questions the teacher is now in a position to exert positive leadership and make this a learning situation for all concerned. Such a performance will earn her respect not only from the class, but also from herself.

PROBLEM 7

My junior high class for the educable mentally retarded has expressed interest in taking another field trip. The class has taken two previous field trips this year and both were very poor. What techniques can I employ to ensure that another field trip would be a meaningful learning experience?

All readers are invited to send their solution and tell how they would handle Problem 7. The March 1971 issue will summarize contributions by readers. Focus on Exceptional Children will award complimentary subscriptions each month for the best solution. Send your response to the Editorial Offices, Focus on Exceptional Children, 6635 East Villanova Place, Denver, Colorado 80222.