Culturally deprived underachiever: learning disabled or mentally retarded?

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THE CULTURALLY DEPRIVED UNDERACHEIVER:
LEARNING DISABLED OR MENTALLY RETARDED?

by
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CHAPTER I

INTRODUCTION

In current pedagogic philosophy, a child's instructional experiences are to be tailored to his educational requirements. When ordinary methods do not seem suited to his needs, various specialized programs through which his instructional requisites can be met are available, although in some cases extremely limited.

In order to determine which of the available programs will be most beneficial for the student, a series of psychological and/or educational instruments are employed. On the basis of information derived from these instruments and from anecdotal records of observations by personnel involved with the child, he is enrolled in a selected program. These programs carry many labels, such as: Trainable Mentally Retarded (TMR), Educable Mentally Retarded (EMR), Educationally Retarded (ER), Emotionally Disturbed (ED), Learning Disabled (LD), or Adjustment Class, depending on the need they fulfill.

Within some systems, there exists a group of children labeled "Culturally Deprived." Due to various factors, the regular educational programs appear unsuitable for many of these children. Based on instrument profiles
and personnel observations, these children are enrolled in an existing program, which may or may not be entirely suited to this child's educational requirements, but which appears to be the best alternative.

**Definitions**

Since several of the terms used throughout this paper are subject to various interpretations, the following entries are given to acquaint the reader with the meanings as used herein.

**Standardized Test (Instrument):** A test constructed of items that are appropriate in difficulty and discriminating power for the intended examinees and that fit the preplanned table of content specification. The test is administered in accordance with explicit directions for uniform administration and is used with a manual that contains reliable norms for the defined reference groups.

**Profile:** A graphic representation of a set of test scores for a single individual in which the test variables are plotted side by side on a set of parallel axes.

**Educable Mentally Retarded:** [a child who], because of subnormal mental development, is unable to profit sufficiently from the program of the regular elementary school, but who is considered to have potentialities for development in three areas: (1) educability in academic subjects of the school at a minimum level, (2) educability in social adjustment to a point where he can get along independently in the community, and (3) minimal occupational adequacies to such a degree that he can later support himself.

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2. Ibid. p. 17.
partially or totally at the adult level.3

Learning Disabled: [those children who] exhibit a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage.4

Culturally Deprived: a general label used to describe any child whose family's status is negative due to nonparticipation in the majority milieu because of race, economic level, or educational background.

Unsuitable Placement: an educational program which minimizes a child's total potential achievement.

Regular Education: the curriculum as presented to the majority of students enrolled in a given system.

Special Education: that area of an educational system designed for those students who can not or are not functioning within the regular curriculum.

Statement of the Problem

Since psychological and/or educational instruments serve as a basis for placement of children within special programs, the following questions were raised:


1. How positive can placement be on the basis of instrument evaluation alone?

2. Which instruments are most reliable in assessing an individual's educational needs?

3. What are the distinguishing characteristics of EMR, LD, and CD children as determined by resulting instrument profiles?

4. Is the category of "Culturally Deprived" an entity in itself, or is it a subsystem of either of the larger categories of Mentally Retarded or Learning Disabled?

Scope of Paper

In this paper the writer has attempted to present a concise review of current research focused on the four questions cited previously. The four areas included: (1) validity of evaluations by instruments alone, (2) reliability of instruments used in educational diagnosis, (3) distinguishing characteristics of EMR, LD, and CD profiles, and (4) singularity of the category "Culturally Deprived."

Summary

In this chapter, the writer has attempted to focus attention on the use of psychological and/or educational instruments to determine placement of children in special programs. Definitions of terms pertinent to the study
were presented. Furthermore, the intent of this paper was stated as a review of current research encompassing the reliability of instruments in evaluation for proper placement, the varying profiles of particular groups of children, and the appropriateness of the category "Culturally Deprived."
CHAPTER II

REVIEW OF CURRENT RESEARCH

Validity of Assessment by Instrument Profile Only

Since Henig's study of the "Predictive Value of a Reading-Readiness Test and of Teachers' Forecasts,"5 the validity of total dependence on instrument evaluation alone has been questioned. Current studies have attempted to substantiate the use of various screening procedures in the assessment of students for special education placement. These studies fall within three categories: (1) those assessing the accuracy of instrument scores per se, (2) those assessing the reliability of teachers' observations, and (3) those assessing the need for additional data.

Accuracy of Instrument Scores

In "Use of Deficits to Identify the Learning Disabled," Salvia and Clark noted that the "concept of a discrepancy" is present in many of the definitions used in diagnosing learning disabilities. This usage, the authors contend, leads to the need for quantification of...
deficits which results in the use of statistically weak measures for educational programming.  

Using the norms presented in the respective manuals, Salvia and Clark compared scores received by fifth grade students on both the California Achievement Test and on the California Test of Mental Maturity by means of the standard error of measurement of the difference between two scores. While the reliability of the original scores ranged from .87 to .97, the reliability of the difference scores ranged from .71 to .84. Noting that the number of false positives obtained will vary, depending on the severity of the deficit, the authors concluded that "the standard error of measurement for deficit scores is sufficiently large to preclude rigid adherence to deficits as a criterion for learning disabilities."  

In addition to the use of deficit scores, educators often rely on the use of intelligence test scores to determine learning rates. This dependency on IQ scores, particularly in the case of minority groups, is questioned in a study by Mercer.


7Ibid., 308.

Working with the entire population of Riverside, California, Mercer attempted to demonstrate the difference between the two-dimensional criteria of mental retardation, subnormality of intelligence and of adaptive behavior, as noted in the AAMD definition and the one-dimensional, intelligence, evaluation used in Riverside. With the content of the Vineland Social Maturity Scale and the Gesell Developmental Scales as a basis, a field model of an adaptive behavior scale was developed. Using this instrument to determine normality or subnormality of each individual, Mercer found that

socioeconomic status plus physical disability plus ethnic group account for only 4.1% of the variance in adaptive behavior...[while] ethnic group plus socioeconomic level account for 30.3% of the variance in IQ.9

The conclusion reached by Mercer in her study was that

the present one-dimensional diagnosis used by clinicians in which only IQ is evaluated may be relatively effective for Anglos....However, a one-dimensional diagnosis is not equitable for persons from non-Anglo backgrounds.10

The above studies have questioned the use of two of the basic steps in educational diagnosis. If these two steps are not sufficient, what are the alternatives?

Reliability of Teachers' Observations

Citing the need for early identification of

9Ibid. 10Ibid., 32.
potentially learning disabled children, the uncertainty of the predictive value of visual-motor instruments, and the practical considerations involved in the process of educational diagnosis, Keogh and Smith conducted a study to determine "the predictive accuracy of the Bender Gestalt and teachers' ratings for early identification of educationally high potential and high risk children." Their subjects were 49 students from four schools in a predominantly white, middle class school district in Southern California. Data for the study included Bender protocols and teacher ratings obtained at the kindergarten level and profiles obtained from the Stanford Reading Test (SAT) and the California Achievement Test (CAT) administered in grades two through five. In determining the reliability of the kindergarten predictive measures as related to future school achievement, the authors found that teachers' ratings had consistently significant correlations with achievement measures. [However], relationships between the Bender at kindergarten and later school achievement were generally lower and for the most part non-significant, especially for girls.\textsuperscript{11}

In addition, they found that when the two variables were combined to predict future achievement the use of the multiple coefficient of correlation increased the strength of relationship between the

predictive and criterion measures, the major contribution to the relationship coming from teachers' ratings. 12

While drawing no definite conclusions from this study, Keogh and Smith made two noteworthy observations:

1. Preoccupation with findings of deficiency, common in psychoeducational diagnosis, may be less valid for school prediction than is specification of competencies, ... [and]
2. Specification of characteristics which teachers view as important may provide clues to understanding the complexities of school readiness. 13

A concurrent study by Ferinden, Jacobson, and Linden supported the findings of Keogh and Smith. The subjects of this study varied from the previous one in that a high percentage of culturally deprived children were included in the sampling. In this study, initial screening of high risk and high potential students was accomplished by means of teacher referrals. After the initial selection, a diagnostic team administered a test battery consisting of the Wide Range Achievement Test (WRAT), the Evanston Early Identification Scale (EEIS), the Bender Gestalt Visual Motor Test, and the Metropolitan Reading Readiness Test Form R. The entire battery was readministered after the subjects had completed four months in the first grade. 14

12 Ibid.
13 Ibid.
The results of the study indicate that

1. Experienced kindergarten teachers can select with extreme accuracy those children who will experience difficulty at the first-grade level.
2. a high-risk drawing, with a cut-off point of 8 or above [on the EEIS], correctly identified 99 percent of those children who experienced poor success in reading at the first-grade level.
3. the Wide Range Achievement Tests [italics mine] depict a 93 percent accuracy in correctly identifying those youngsters who will experience poor success in reading at the first-grade level.
4. the results of the Metropolitan [sic] Readiness Test [italics mine]...sugge that when utilizing the total percentage score the only effective predictor for screening potential problems in reading at the first-grade level is a score which falls below the 30th percentile.
5. because of the maturational factor the Bender Gestalt [italics mine] is not a valid test for predicting first-grade success in reading. However, the higher correlation between the Bender Test and first-grade reading ability would suggest that the instrument is a better predictor if administered at the first-grade level.15

The authors concluded that "the teacher has a key role in the early identification of children with learning disabilities."16

Although the question of the accuracy of teachers' predictions is still not settled,17 the role of the teacher within the diagnostic team is gradually expanding. One phase of this expanding role was explored in a study conducted by Lesiak involving the development of a

15Ibid.
16Ibid.
A representative random sample of 22 teachers and their respective classrooms, totaling 545 children, from six school districts served as subjects. The teachers were informed of the study and their role in it by means of a one day inservice training session. The battery utilized included:

1. Cognitive Abilities Test (CAT)
2. Group Draw-a-Man Test (GDAMT)
3. Teacher Nomination Scale of "Slow Learning" Children (TNS)
4. Slosson Intelligence Test (SIT)
5. Devereux Elementary School Behavior Rating Scale (DESB)
6. Teacher Nominations of Classroom Adjustment (TNCA)
7. Teacher Ratings of Classroom Behavior (TRCB)
8. Group Rutgers Drawing Test (GRDT)
9. Group Bender Visual Motor Gestalt Test (GBGT)
10. Individual Bender Visual Motor Gestalt Tests
11. Gross Motor Screening Inventory (GMST)
12. Group Auditory Discrimination Test (GADT)
13. Individual Auditory Discrimination Tests
14. Teacher Vision Checklist (TVC)

15. **Teacher Hearing Checklist (THC)**

The screening period covered two weeks, with the bulk of the material administered by the teachers: the SIT and the Wepman Auditory Discrimination Test being administered by selected aides.\(^{19}\)

Since the battery evaluated five major areas, the data were analyzed according to those divisions. In regards to teachers' diagnostic ability, the author found that the "teachers' accuracy in the nomination of 'slow learning' children (TNS) was 68% correct compared to CAT scores." When evaluating classroom behavior "teachers' initial global judgments were quite consistent with later behavior ratings that utilized systematic behavioral data." In the area of visual motor functioning, the group screening was found to be satisfactory, while the gross motor inventory was doubtful. The GADT was also found to be unsatisfactory, as were the hearing and vision checklists.\(^{20}\)

Lesiak concluded:

> The results of the present study and the implications for data usage suggest that a screening battery [sic] administered by classroom teachers and augmented by aides may constitute a procedure whereby a school psychologist could initially identify and gather relevant data about primary-grade children who manifest handicaps that may interfere with present and future educational functioning.\(^{21}\)

\(^{19}\)Ibid.  
\(^{20}\)Ibid.  
\(^{21}\)Ibid.
Another phase, that of rating scales, was studied through the analysis of kindergarten reports. The records of 37 boys "certified as 'perceptually handicapped' by the Massachusetts State Department of Education" and of 37 "'normal'" boys from the same kindergarten classes as the handicapped boys were rated as to the presence or absence of given traits and characteristics as noted by the teacher completing the report. The results indicated that trait lists and general behavioral scales, when they are derived from behaviors important to teachers and are comprehensive, can be successful in predicting future learning disabilities.22

With the teacher gradually being accepted as an integral part of the diagnostic team, another role within the team, the parents', is being reviewed.

**Obtaining Additional Data**

Having become acutely aware of the need for early identification and remediation of factors related to learning disabilities, educators are turning to the primary source of information concerning the child's initial development: the parents.

In Strag's study, conducted in Cedar Falls, Iowa, parents of children previously identified as normal, learning disabled, or severely mentally retarded were requested to complete a 30 item, 5-point forced choice

rating scale which included "items indicating behavioral or emotional disturbance; items indicating possible neurological dysfunction; and items with little or no diagnostic function." With the completion of statistical analysis of the compiled data, ten variables proved significant at the .05 level. These included:

Quarrelsome (item 1), Consideration for Others (item 10), Upset when Left by Mother (item 12), Jealousy (item 13), Ability to Receive Affection (item 24), Clingingness (item 27), Tendencies to be Rigid (item 18), General Negativism (item 25), Physical Coordination (item 26), and Fatigability (item 30).

When data from the individual parent groups were compared, patterns of behavior found to be significant at the .05 level were indicated. When comparing the responses of the parents of the learning disabled group with the responses of the parents of the normal learners, items 10, 18, 24, 25, 26, 27, and 30 were depressed. In the comparison of reports from parents of mentally retarded children and from parents of normal children, items 10, 13, 18, 20, 26, and 29 formed the distinguishing pattern. When the reference groups were those involving mentally retarded children and learning disabled children, items 13, 20, 24, and 27 were significant statistically.

From these data and the corresponding analysis, Strag concluded:


24Ibid.
parents would appear to be of valuable assistance in screening their children for behavioral disorders when using a rating scale similar to the one employed in this study. Using the "known-group" technique, substantial evidence was found to support the hypothesis that parents are sensitive to the behaviors of their children.25

In summary, the validity of assessment by instrument profile alone as assessed by the research cited has been questioned due to both the validity and the reliability of instruments used. Furthermore, the research shows that the inclusion of data gained from teachers' observations and from parents' ratings can provide assistance in the diagnosis of educational difficulties.

Instrument Reliability

Although the foregoing research questioned the validity of the singular use of instrument profiles for educational diagnosis, it did not negate their function as part of the diagnostic procedure. Hence, the question arises: Which instruments should be included in the formation of a battery?

Various research studies have been undertaken to determine which instruments would constitute an effective placement battery. These studies are roughly divisible into two categories: (1) those involving the appropriateness of a single instrument for differential diagnosis, and (2) those evaluating the accuracy of a given battery

25Ibid.
in identifying candidates for placement within special education programs.

Instruments

Due, perhaps, to their longevity, two of the most well-known and widely used instruments in the field of education are the Wechsler Intelligence Scale for Children (WISC) and the Stanford-Binet (SB). These scales have served as the source of crucial criteria for special education placement. Only recently has their authority been questioned when related to assessment of preschool children. In response to the differing needs, the Wechsler Preschool and Primary Scale of Intelligence (WPPSI) was developed. 26

Citing the need for further validity studies of the WPPSI, Oakland, King, White, and Eckman undertook companion studies comparing the data from the WPPSI with that obtained from SB and WISC protocols. In the first study, the subjects were 24 Negro students enrolled in a Head Start program. Subjects for the second study included 24 Caucasian kindergarten students. In each case, the three instruments were administered over a two-week period. 27

In each study, correlations of the results obtained on each of the three instruments were significant at the


27 Ibid.
18

.01 level. In the first study, however, it was noted that all of the mean IQ scores were "approximately one standard deviation below the norms." The authors concluded:

The WPPSI was thought to be more appropriate for testing Negro preschool children because its standardization sample included non-whites as well as a more equitable proportion of Ss of lower SES. However,...the present estimates of concurrent validity suggest that the SB and WISC are more appropriate than the WPPSI for assessing IQs of lower SES Negro children. However, estimates of predictive validity are needed to determine the relationships between performance on these three tests and later academic achievement.28

A study by Hagin, Silver, and Corwin did attempt to determine the predictive ability of the WPPSI. In analyzing data obtained from the WPPSI protocols of 82 children aged 5-8 to 7-8, selected from varied ethnic and socioeconomic backgrounds, they drew two sets of conclusions, one based on the entire population of the sample, and the other based on matched groups within the sample.29

Regarding data obtained from those children in the normal-progress group and the intervention group (high risk children), the authors concluded:

1. Means for the normal-progress group exceed those of the intervention group on all IQ measures and subtest scores.
2. No consistent pattern of verbal versus performance functioning is found for either group...

28Ibid.

3. The intervention group appears to be more variable as judged from the coefficient of variation and from percentages of subjects who deviated three scaled score points from the mean of their scaled scores.

4. No consistent subtest pattern was found to characterize the intervention group...

After subgroup analysis, the authors found:

1. The WPPSI produced rich clinical material which was best understood when it was related to diagnostic subgroups...

2. The qualitative and quantitative material elicited by the WPPSI was useful in the selection and diagnostic processes, particularly in planning appropriate strategies of intervention.

3. It appears inadvisable to assume that learning disability is a homogeneous condition manifesting itself in any characteristic cognitive pattern in first grade.30

The predictive validity of another intelligence test, the Lorge-Thorndike Intelligence Test, was questioned in research undertaken by Mendels. He compiled data on 79 children from the Lorge-Thorndike Intelligence Tests (LTIT), subtests of the Metropolitan Achievement Tests (MAT), teachers' ratings and student reading levels. After factor analysis, "correlations between the LTIT and the academic criteria ranged from .46 to .62." Mendels concluded:

the correlations between the LTIT and the academic criteria may be regarded as highly satisfactory... While the addition of the other four predictor variables, school ability rating, age, sex, and father's occupation, did increase the power of prediction somewhat, the LTIT alone appears to be a valid instrument for assessing the intellectual abilities of kindergarten Ss.31

30Ibid.

The need for early identification of high risk children has precipitated a search for an inexpensive yet efficient screening device. One such device may be the Slossen Intelligence Test (SIT).

Swanson and Jacobson screened 64 second grade children referred for learning disability evaluation using the SIT and the WISC. School psychologists administered the WISCs and trained diagnostic teachers administered the SITs. Upon analysis of the data,

the correlation coefficient between the verbal I.Q. and performance I.Q. was .53. The correlation coefficient of the verbal I.Q. and performance I.Q. with the full scale I.Q. were .88 and .91 respectively. The correlation coefficient obtained between the SIT I.Q. and the WISC verbal I.Q. was .64 [with a] coefficient of .10 between the SIT I.Q. and the WISC performance I.Q. [and a] coefficient of .44 between the SIT I.Q. and the WISC full scale I.Q. 

All of the intercorrelations were of significant magnitude beyond the .01 level except for the correlation between the SIT I.Q. and the WISC performance I.Q. 

In a similar study of the SIT by Lessler and Galinsky, 97 Negro and 38 Caucasian children 7 years old to 18 years old served as subjects. Data consisted of scores obtained on the SIT and on the WISC. "The data were evaluated in racial breakdowns because of the expectation that information yielded by the study might be 

differentially useful in work with different racial
groups."

Data analysis indicated that

The correlations between WISC and SIT scores were
as follows: for Negro Ss, SIT and Full Scale, .65,
and Verbal, .66, and Performance, .50; for white Ss,
SIT and Full Scale, .50, and Verbal, .49, and Per­
formance, .40; for all Ss, SIT and Full Scale, .67,
and Verbal, .68, and Performance, .57. In all in­
stances, there was a significant positive relation­ship...
between WISC Full-Scale, Verbal, and Per­
formance scores and the SIT.34

The authors concluded: "the data derived from the
present study suggest that the SIT should not be used for
placement in special-education classes when the IQ derived
from the test is over 60."35

While the above studies have focused on instruments
which evaluate global performance, others have examined
instruments which are geared to specific types of per­
formance. Studies cited below center on such instruments.

Noting the subjectivity present in the scoring of a
Bender-Gestalt, Fidel and Ray designed a study "to test the
efficacy of an objective scoring system for the visual-per­
ceptual aspects of the B-G with a childhood population."
Their subjects included 100 children divided into three
groups: (1) nonorganic, (2) minimally organic, and (3)
grossly organic. The Revised Objective Perceptual Test

33Ken Lessler and M. David Galinsky, "Relationship
Between Slosson Intelligence Test and WISC Scores in Spe­
cial Education Candidates," Psychology in the Schools,

34Ibid. 35Ibid.
(OPT) and the Bender-Gestalt were administered and scored for each subject. The authors reported the following results:

The first hypothesis, that the Revised OPT can differentiate nonorganic from organic children, was strongly supported...

The second hypothesis, that nonorganic children can be differentiated from minimally organic children on the basis of the Revised OPT, was supported....

The third hypothesis, that the Revised OPT can differentiate children more effectively than the B-G scored according to Koppitz's (1964) Developmental Scoring System, was strongly supported...

The fourth hypothesis, that the Revised OPT scores increase as a function of increasing age groups, was confirmed.

The fifth hypothesis, that the average reaction time to the Revised OPT is faster for organic children than for nonorganic children, was strongly supported in the 5½- to 7½-year-old level, not supported in the 7½- to 8½-year-old level, and weakly supported in the 8½- to 9½-year-old level.

The sixth hypothesis, that more accurate differentiation between minimally organic and nonorganic children can be achieved by considering both the B-G drawings and the Revised OPT score, was also confirmed.36

Another study to determine the predictive ability of the Bender-Gestalt as a group administered instrument was undertaken by Norfleet. Subjects were first grade students, N = 311, for whom Bender-Gestalt protocols obtained at the beginning of the school year and Gates-MacGinitie Reading Tests protocols obtained at the end of the school year were available. Using a cut-off score of

plus or minus one standard deviation from the mean, the authors concluded:

it was possible to identify the first grade reading achievement of extreme BGT groups with some accuracy, particularly the reading achievement associated with good BGT performance. But...the BGT should be supplemented with other measures for individual prediction, particularly in those screening programs which are primarily interested in identifying potentially poor readers.37

Citing the joint use of the Wechsler Intelligence Scale for Children (WISC) and the Illinois Test of Psycho-linguistic Abilities (ITPA) in the assessment of learning disabled pupils, Leton undertook a factor analysis of the two instruments. His data were derived from the cumulative files of 92 pupils in the Honolulu School District's special education program.38

Factor analysis of the 20 intercorrelated subtests revealed seven factors: (1) "Verbal Association," (2) "Visual Analysis and Motor Association," (3) "Comprehension of Similarities and Differences," (4) "Auditory Memory," (5) "Visual Sequencing," (6) "Logical Reasoning," and (7) "Verbal-Educative factor." Leton noted, "this analysis should extend to the interpretive value of both instruments...[The analyses] provide evidence of their


The Illinois Test of Psycholinguistic Abilities was also the focus of a study conducted by Burns and Watson. The stated purpose of this research was to "gain evidence regarding the degree of concordance between the subtests and the model on which the test is based." Subjects included 90 children referred for assessment of learning difficulties. Ability and academic achievement levels were determined through the use of the Stanford-Binet, Wechsler Intelligence Scale for Children, Wechsler Preschool and Primary Scale of Intelligence, Peabody Picture Vocabulary Test, Wide Range Achievement Tests, and the Durrell Analysis of Reading Difficulty. The Revised ITPA was administered to all subjects for the purpose of the study.40

Five factors emerged from the "principal components factor analysis of the intercorrelation matrix." They were: (1) "general auditory language ability," (2) "visual language ability," (3) "expressive language ability," (4) "a general language ability with emphasis on auditory-vocal language and closure skills," and (5) "memory and expressive language ability." The authors suggested:

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39 Ibid.

"that remediation programs based on individual profiles of nine or ten distinct psycholinguistic abilities may be inappropriate."41

Batteries

When initiating a Learning Disabilities Program within its system, District 68 of Skokie, Illinois, developed it in three phases: (1) Screening, (2) Diagnosis and Prescription, and (3) Treatments.42

The screening phase was accomplished in two segments: (1) a mass screening, using the Otis Quick Mental Ability Test, Alpha Form; the SAT; and teachers' ratings; and (2) a selective screening, using the WISC, the Bender-Gestalt, the Metropolitan Achievement Tests, the Gates-MacGinitie Reading Tests, and the Picture Story Language Test. Only those students showing a discrepancy between ability and expected achievement as established in the first segment were routed through the second segment of the screening.43

At the end of the three-year project, several conclusions had been reached. Among them were:

1. The Otis Quick Mental Ability Test [italics

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41Ibid.


43Ibid.
mine], when used in screen one, was satisfactory. In screen two it would be unsatisfactory as a good indicator of intellectual potential with LD children.

2. The WISC is at present indispensable in a LD identification program as a reliable estimate of intelligence, because it measures verbal and non-verbal skills separately, and is valuable diagnostically in pinpointing specific disabilities of LD children.

3. Since most children underachieving in written language were also underachieving in other subjects, it was found that the PSLT would be most efficiently used in diagnostic testing.

4. The objective group testing program as demonstrated was efficient and effective as a screening device for the identification of underachievers who were finally identified as children with LD from second through fourth grade.

Since screening programs such as that cited above are expensive, some school systems have been investigating the feasibility of a battery administered within a given school by the staff of that school (i.e., teachers, nurses, social workers, etc.). Such a study involving the use of the Columbia Mental Maturity Scale (CMMS), the Peabody Picture Vocabulary Test (PPVT), the Raven Coloured Progressive Matrices (RCPM), and the Slosson Intelligence Test for Children and Adults (SIT), was undertaken by Nicholson.

The study involved 64 children thought to be retarded. The WISC was administered by a psychologist, and

44Ibid. p. 44-46.

the CMMS, the PPVT, the RCPM, and the SIT were administered by school personnel. The results of the study indicated:

While any one of the four screening instruments can be somewhat effective in identifying students who are mentally retarded from those who have other learning disabilities, the use of all four in combination can be very effective... The effectiveness of identifying those children who were retarded from those who had other learning disabilities is as follows: RCPM alone; combination RCPM and SIT; combination of RCPM, SIT, and PPVT. The addition of the CMMS to any previous combinations did not seem to raise significantly the discrimination power of the combination. 46

A study undertaken in Vancouver, British Columbia, attempted to develop such a battery. Children from 12 kindergarten classes, N = 228, were screened through the use of the Predictive Index, the Draw-A-Person Test, and Name Printing. Of this group, 25 matched pairs (one "normal child" and one high risk child) underwent additional neurological and psychological examination. Included in this second screen were: the Beery Test of Visual-Motor Integration, the WPSSI, the ITPA, and the Kephart Motor Survey. Ten months later the initial screening procedure was repeated with the matched pairs. 47

From the study it was concluded that the initial screening procedure "clearly distinguishes a group of children who appear on the basis of clinical experience to be

46 Ibid.

'high risk' children for school failure." 48

The University City School District of Missouri attempted to develop a modified screening battery using the Peabody Picture Vocabulary Test, the Illinois Test of Psycholinguistic Abilities, the Developmental Test of Visual-Motor Integration, the Behavior Rating Scale, the Three-Dimensional Auditory Discrimination Scale, and Gross Motor Observation Scales as a base. This 90-minute battery was modified to a 30-minute screen by using only four subtests of the ITPA in addition to those cited. Because of additional study, a final battery was not listed within the report. 49

Attempting to construct a battery which considered not only instrument related data, but also situational data, Satz and Friel undertook a study involving 497 white male kindergarten pupils (95.6% of the total population) in the Alachua County, Florida, public school system. Data were derived from a factor analysis of 20 "predictor variables" which included: (1) day of testing, (2) age, (3) handedness, (4) finger tapping, (5) PPVT, (6) recognition-discrimination, (7) embedded figures, (8) verbal fluency, (9) VMI, (10) similarities, (11) alphabet, (12)

48 Ibid.

right-left discrimination, (13) finger localization, (14) auditory-discrimination, (15) dichotic-listening, (16) auditory-visual task, (17) Behavioral Checklist, (18) socio-economic status, (19) maturity, and (20) activity level. 50

In analysis, four factors emerged. Factor 1 "consisted primarily of tests involving sensory and perceptual-motor functions and mnemonic abilities." Factor 2 centered on the teacher rated variables. Factor 3 "was comprised of three essentially verbal and conceptual tests." Factor 4 "represented motor measures and handedness." The "percent of common variance accounted for" by Factors 1, 2, 3, and 4 were 30.7, 16.0, 13.4, and 7.7, respectively. Satz and Friel suggested, therefore, "that a substantial number of High Risk children can be correctly identified during the early phases of kindergarten before formal reading instruction is begun." 51

In summary, the above studies have illustrated that various instruments, particularly the Bender-Gestalt, the Wechsler Intelligence Scale for Children, the Illinois Test of Psycholinguistic Ability, and the Raven Coloured Progressive Matrices, when used singularly or in combination can effectively identify "high risk" children. This

50 Paul Satz and Janett Friel, Some Predictive Antecedents of Specific Learning Disability: A Preliminary One Year Follow-Up, (Gainesville: Florida University, 1972) 7-13.

51 Ibid.
leads to the question, "What is the basis of the 'high risk'?"

**Characteristic Profiles**

Research having indicated that identification of "high risk" children is possible, the question is raised: Can a specific type of disability be identified through analysis of instrument profiles? Thus, profile variations have been the basis of several studies.

Using 400 WISC protocols randomly selected from the files of the Special Education Department of Kalamazoo Public Schools, Tava subjected derived data to t-test analysis. A characteristic pattern in the protocols of children functioning within the retarded range emerged. Scores on the Picture Completion, Object Assembly, and Similarities subtests of the WISC were significantly above the mean while the scores on the Vocabulary, Arithmetic, and Information subtests fell below the mean. Thus, Tava concluded that a characteristic profile was evident.52

WISC profiles also served as the data source in a study of learning disabled boys by Ackerman, Peters, and Dykman. Reviewing the WISC protocols of 116 boys, 82 of whom were previously cited as learning disabled and 34 of

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52 Edward G. Tava, "The Use of the Wechsler Intelligence Scale for Children in Differentiating Between the Endogenous and Exogenous Mental Defective" (paper presented at the Annual Meeting of the California Educational Research Association, San Diego, California, April, 1971), p. 4-8.
whom were cited as normal, the authors concluded:

1. Compared with the controls, CLD [children with specific learning disabilities] as a heterogeneous group were significantly inferior in verbal ability as measured by the WISC (mean Verbal IQs of 114 for controls, 103 for CLD).

2. When controls and CLD were paired (N=29) for chronological age and mental age, as estimated from Full Scale IQs, the CLD were superior to the controls on the performance scale of the WISC but still inferior to controls on the verbal scale.

3. By analysis of variance, children with learning disabilities were reliably lower than controls on four WISC subtests: Information, Arithmetic, Similarities, and Digit Span. Arithmetic best separated the groups.

4. Using a discriminant function, five selected WISC subtests could be used as reliably as 10 to separate adequate students from CLD (76% accuracy): Information, Comprehension, Arithmetic, Digit Span, and Block Design.

Citing the complexity of man's perceptual structure and the assumption by some educators that "intersensory transducing of information is operating efficiently and effectively" in learning disabled children, McGrady and Olson proposed the need for an "improved method for the appraisal of intra and intersensory perception" in the evaluation of such children.\(^5\)

Having developed a "psychosensory communications unit" which consisted of a vertical screen for the


presentation of visual stimuli, binaural headphones for
the presentation of auditory stimuli, and a control panel
for the presentation and recording of subjects' responses,
McGrady and Olson proceeded to select 99 children from a
pool of children participating in another study at North­
western University. Of the 99 subjects, 68 served as con­
trols. A 30 minute automated test battery was administered
to each subject.\textsuperscript{55}

In reviewing the data, the authors attempted to de­
termine the nature of the differences as shown by re­
sulting patterns. They found that

children with learning disabilities tended to per­
form more poorly on tasks which utilized verbal stim­
uli, regardless of the psychosensory modality. Their
problems manifested themselves to a greater extent in
comprehension of language stimuli, rather than percep­
tion of nonverbal stimuli.... The major parameter of
significance was the distinction between verbal and
nonverbal stimuli.\textsuperscript{56}

Specifying the need for normative data on types of
children other than the "average child," Cicirelli,
Granger, and Schemmel undertook a study of disadvantaged
primary-grade children's performance on the ITPA. Their
study population consisted of 746 white, 538 black, and
153 Mexican-American "graduates" of headstart programs
from nine geographic regions of the United States.\textsuperscript{57}

\textsuperscript{55}Ibid. \hspace{2cm} \textsuperscript{56}Ibid.

\textsuperscript{57}Victor G. Cicirelli, Robert Granger, and Denny
Schemmel, "Performance of Disadvantaged Primary-Grade Chil­
dren on the Revised Illinois Test of Psycholinguistic Abil­
Although the group as a whole had lower means and larger standard deviations than the normative group used in the standardization of the Revised ITPA, the authors stated that "most interesting of all are the distinguishing characteristics of the profiles of the three groups." The auditory sequential memory and the visual sequential memory subtest scores provided the greatest contrast with blacks scoring very high, whites medium, and Mexican-Americans very low on the former and Mexican-Americans scoring high, whites medium, and blacks low on the latter. 58

In a similar study, Stephenson and Gay analyzed the effect of socioeconomic status (SES) on the psycholinguistic abilities of black and white children of varying socioeconomic levels. They administered the Revised ITPA to 80 black and 80 white first grade children. Examining the scores by means of "an analysis of variance design followed by t-tests when significance was found," they concluded:

SES has a significant effect on level and pattern of performance on the ITPA. The effect for white children is more on the level of performance, whereas the effect for black children is on the pattern of performance.

Performance on the subtests measuring mode of reception and expression did not confirm research stating that the lower class is visual-motor oriented and the middle class is auditory-vocal oriented.

58 Ibid.
Only with black children of SES level 2 did Visual Reception subtest scores surpass Auditory Reception scores. Manual Expression scores surpassed Verbal Expression scores at all levels. Visual Motor Association scores surpassed Auditory Vocal Association scores for the two lower SES levels for white children and black children of SES 2. No difference was noted for the middle SES levels. The performance of black children from SES 1 and 2 revealed difficulties with the automatic language patterns measured on the ITPA. Performance on the Auditory Sequential Memory subtest was high for all black children with the level of performance being unaffected by SES. 59

In summary, studies cited above have focused on emerging patterns of variance within instrument protocols as displayed by mentally retarded, learning disabled, or culturally deprived children when compared to their non-disabled counterparts. The question is now raised: What variance occurs when these groups are compared to each other?

Profile Variances Among Subgroups of High Risk Children

Highlighting the current concern for functional analysis of performance, Keogh, Wetter, McGinty, and Donlon analyzed the WISC scores of mentally retarded, learning disabled, and hyperactive learning disabled children in "terms of three categories of subtests hypothesized to reflect process or functional aspects of intellectual performance." The categories included: (1) Verbal-Comprehension, composed of Information, Vocabulary, and Comprehension subtests, (2) Analytic-Field-Approach, composed

of Object Assembly, Block Design, and Picture Completion subtests, and (3) Attentional-Concentration, composed of Arithmetic, Digit Span, and Coding subtests.\(^{60}\)

Their sample population was drawn from three independent sources. Educable mentally retarded (EMR) boys, learning disabled children (LD), and hyperactive learning disabled boys (LD-HA) were selected from public school classes, private schools, and Learning Disability Clinic referrals, respectively. Totally, 76 children participated in the study.\(^{61}\)

When analyzed, categorical patterns did emerge. The EMR group's performance was characterized by low scores in the Verbal-Comprehension category and high scores in the Analytic subtests while the LD group's and the LD-HA group's performances were characterized by adequate scores in the Verbal and Analytic categories and low scores in the Attention-Concentration category.\(^{62}\)

In Nicholson's study, cited earlier, differentiating patterns among subgroups of high risk children were also evident. After analyzing data from the Peabody Picture Vocabulary Test, the Columbia Mental Maturity Scale (CMMS), the Raven Coloured Progressive Matrices (RCPM),


\(^{61}\)Ibid. \(^{62}\)Ibid.
and the Slosson Intelligence Test for Children and Adults (SIT), Nicholson cited the following patterns:

1. PPVT low, RCPM high, with a definite diagonal on the RCPM; SIT and CMMS tended to be low--this pattern tended to reflect cultural, environmental, and educational deprivation.

2. Four screening instruments with considerable scatter, no diagonal on the RCPM--this pattern tended to reflect a learning disability which needed much further investigation.

3. All screening instruments low, definite diagonal on the RCPM--this pattern tended definitely to identify mentally retarded children.63

Noting that learning disabled and culturally disadvantaged children, though members of two heterogeneous subgroups of educationally handicapped students, display similar deficits in intelligence and in language skills, Leton undertook a discriminant analysis of WISC scores received by 127 matched pairs of learning disabled and culturally disadvantaged children.64

Completing "a stepwise discriminant analysis...to determine the sequence and significance levels at which the subtest variables entered the discriminant equation," Leton found that:

...there were only two subtests, Comprehension and Picture Completion, on which the performance of the LD group exceeded that of the CD group...

...The Information and Arithmetic subtests are the subtests that most effectively differentiated the CD and LD profiles. The Vocabulary subtest was next in the order of selection on the basis of the stepwise


criterion of correlation with group membership.\textsuperscript{65}

He concluded: "Discriminant classification of CD and LD pupils on the basis of WISC and other test profiles could be used to reduce the number of LD clinic referrals and to minimize the over-referral of non-LD cases."\textsuperscript{66}

In summary, the above studies have indicated that profile variations exist which distinguish one subgroup from another when comparisons of instrument protocols are undertaken.

\textsuperscript{65}\textit{Ibid.} \textsuperscript{66}\textit{Ibid.}
CHAPTER III

SUMMARY

Discussion

In Chapter I, the writer attempted to focus attention on the use of psychological and/or educational instruments to determine placement of children in special programs. Definitions of terms pertinent to the study were presented. Furthermore, the intent of the paper was presented as a review of current research encompassing the reliability of instruments in evaluation of proper placement, the varying profiles of particular groups of children, and the appropriateness of the category "Culturally Deprived."

In Chapter II, research relevant to the four questions cited in the first chapter was presented. With regard to the reliability of instruments in the evaluation of proper placement, research cited showed that the use of instruments, when combined with data obtained from additional sources such as teacher observations and parent surveys, was effective in the identification of high risk children. Furthermore, it was shown that although several instruments are currently widely used in differential diagnosis of high risk children, further investigation of
profile implications is necessary. A lack of research dealing with profile variations among subgroups, however, left the question of the uniqueness of the category "Culturally Deprived" unanswered.

Conclusions

The use of psychological and/or educational instruments, as well as the use of teacher ratings and parent behavior inventories, are effective when used within a program of identification of high risk students for placement within special educational programs. Additional research, however, is necessary before characteristic variations of subcategories of mentally retarded, learning disabled, and culturally deprived as evidenced on instrument profiles can be established which will permit accurate identification of each group for educational purposes.
BIBLIOGRAPHY


Henig, Max S. "Predictive Value of a Reading-Readiness Test and of Teachers' Forecasts." Elementary School Journal, L (September, 1949), 41-6.


