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A Comparison of WISC-R and WJ-R vs. CogatAT and ITBS in Defining Severe Discrepancy in the Diagnosis of Learning Disabilities

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A COMPARISON OF WISC-R AND WJ-R VS. CogAT AND ITBS IN DEFINING SEVERE DISCREPANCY IN THE DIAGNOSIS OF LEARNING DISABILITIES

An Abstract of a Thesis

Submitted

In Partial Fulfillment

of the Requirements for the Degree

Specialist in Education

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University of Northern Iowa

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ABSTRACT

A costly component of special education deals with the assessment and diagnosis of learning disabled students. This study considers the feasibility of replacing expensive, time consuming individual assessment procedures with group administered assessment procedures. IQ-achievement discrepancy scores generated by the WISC-R and WJ-R for 26 learning disabled students were compared to discrepancy scores generated by the CogAT and ITBS. Test data were retrieved from school records for third grade students identified as learning disabled within the 1991-1992 or 1992-1993 school years. ITBS scores were recorded for areas recognized by the WISC-R/WJ-R discrepancy scores. Discrepancy scores were generated in each of the recognized areas for each of the CogAT batteries using a regression table. Chi squares were computed to compare similarities in qualification rates and patterns.

Study results indicated that the discrepancy scores generated using each of the CogAT Batteries and ITBS scores were unable to duplicate the incidence rate or area of specific learning disability patterns achieved with the WISC-R and WJ-R for the subjects involved. A method of considering a student qualified if found discrepant using any of the three CogAT battery discrepancy scores did provide an incident rate of 23 of the 26 students. However, this method is discouraged due to the lack of a discernible pattern of identification for each of the CogAT batteries separately and the possibility of overidentification. The performance of this method does raise the question of what patterns might look like with a composite score for the CogAT, if this were to be developed.

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CHAPTER 1

INTRODUCTION

What is a learning disability? Many definitions have been proposed by various researchers, organizations, and government committees (Lerner, 1989; Mercer, Hughes, & Mercer, 1985) with much contention about what characteristics and terminology ought to be included. There does appear to be general agreement on the basic assumption that a learning disability is caused by limitations or differences in psychological processes required for success in academic areas. These limitations are inferred to be due to naturally occurring variations of neurological make-up or brought about through accident or disease (Torgesen, 1986). This is reflected in the most widespread definition currently in use, the following one put forth in Public Law 94-142:

> The term "children with specific learning disabilities" means those children who have a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such disorders include such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or environmental, cultural, or economic disadvantage.

The diagnosis of a learning disability, in terms of the educational setting, is a means of providing access to special services which would otherwise not be available to students for whom quasi-unique educational strategies are presumed to be requisite for appropriate instruction.

Statement of the Problem

An essential component of the diagnosis of a specific learning disability is the quantification of a significant discrepancy between the student's intellectual ability and his/her level of academic performance, with academic performance being below present grade placement and at least one standard deviation below the predicted mean of an achievement distribution based on level of intellectual functioning. The current method of evaluation in Iowa and many other parts of the country for deriving this discrepancy is with the use of individually administered assessment tools such as the Wechsler Intelligence Scale for Children-Revised (WISC-R) and the Woodcock-Johnson Tests of Achievement-Revised (WJ-R). These evaluation procedures can be both expensive and time intensive in their application.

Due to the limited resources currently available for special education and the increasing number of students who are in need of a variety of services, one may question whether there may be other more efficient means of determining a student's achievement discrepancy. The use of group administered intelligence and achievement batteries in the determination of such a discrepancy may offer such a solution. This study examines the feasibility of employing two group administered tests, the Cognitive Abilities Test (CogAT) and the Iowa Tests of Basic Skills (ITBS), with the WISC-R and WJ-R in the generation of discrepancy scores for the purpose of assessing the presence of a learning disability. Because many school districts already routinely administer the CogAT and ITBS to all students, these data are readily available. It is clear that

using this information for the purpose of identification would prove to be far more cost effective. Therefore it is worthwhile to determine if this data would serve the purpose.

Significance of the Study

If the current population identified as having a specific learning disability based on discrepancy scores derived from the WISC-R and WJ-R can also be identified through a discrepancy based on the CogAT and ITBS, this would obviously influence future identification practices and the nature of educational services. Teacher concerns and referrals could be quickly and efficiently addressed to find children with learning disabilities, simplifying the referral process and providing help to those who need it as early as possible. It would also aid in identifying the needs of those children termed at-risk who do not yet qualify for special services but may in the future. Additionally, the use of group administered tests in the generation of discrepancy scores would save school psychologists and other special education professionals a substantial amount of time. Time that might be better spent in consultation with teachers, administrators, and parents in providing more effective educational opportunities for all students experiencing academic difficulties, not just those who meet a discrepancy cutoff. A thought shared by Clarizio (1992) who states, "The inservice training and consultation could center around the desirability of (a) sound prereferral interventions and (b) greater use of teaching methods related to effective instruction for low achieving students" (p. 34).

Assumptions

1. This study assumes Intelligence is a meaningful construct which is capable of being accurately measured and that the WISC-R and CogAT are valid measures of this construct. The WISC-R provides three IQ scores; a Verbal IQ, a Performance IQ, and a Full Scale (Composite) IQ. The WISC-R's underlying philosophy asserts that intelligence is both global and multifaceted in nature. Wechsler (1974) states, in a brief definition, "Intelligence is the overall capacity of an individual to understand and cope with the world around him" (p. 5). In addition, the WISC-R is seen as one of the most widely accepted and used Instruments in the assessment of intellect currently available. The CogAT provides IQ scores in what are considered three spheres of activity; a Verbal Battery, a Quantitative Battery, and a Nonverbal Battery; no composite IQ score is provided. The basic construct of the CogAT involves relational thinking; intelligence is a general ability flowing through all aspects of the test, with more limited and specialized abilities corresponding to each battery. The test manual states, "An individual's score on the test should reflect primarily his or her ability to discover relationships and show flexibility in reasoning and problem solving" (Thorndike & Hagen, 1986, p. 5). Each battery includes the following item types: classification, analogies, comprehension, and series.

2. The WJ-R and ITBS are valid measures of academic achievement. Both of these instruments are normed on large standardization samples. The ITBS and CogAT were normed on the same standardization sampling. In assessing the validity of either of

these assessment instruments, one would have to compare the item content of the tests with that of the curriculum of each student. The assumption will be made that both tests provide items which are adequate representations of school-based achievement.

3. Due to the archival nature of the data, several school psychologists, educational consultants, and teachers were responsible for evaluations completed on the study's subjects. It is assumed that these individuals are competent in their fields and that the proper directions were followed in administering each of these instruments.

Limitations of the Study

1. The sample size was comparatively small, but the students involved demonstrated scores consistent with learning disabled students in general. Regression tables generated by the state of Iowa Department of Education were used in identifying discrepancies.

2. Many individuals were involved in the administration of the instruments to the subjects. It is possible there may have been differences in the way the instruments were administered that could affect the scores obtained.

CHAPTER 2

REVIEW OF LITERATURE

How many children are classified as learning disabled? According to the Thirteenth Annual Report to Congress on the Implementation of the Individuals With Disabilities Education Act (U.S. Department of Education, 1991) 2,064,892 children between the ages of 6-21 years were classified for the time period 1989-90. This accounts for 48.5% of all children served under special education or approximately 5% of all school aged children. This also represents an alarming increase of 160% since Public Law 94-142, Education for All Handicapped Children Act (now the Individuals with Disabilities Education Act, IDEA) was enacted in 1975. Such a rapid increase in the numbers of learning disabled children has led to economic, political, social, and educational concerns causing some to question the practicality of a learning disability category (Adelman & Taylor, 1991; Algozzine & Ysseldyke, 1986, 1988). A portion of this increase may be due, in part, to the refinement of assessment and diagnostic procedures. This would explain the corresponding decreases in the diagnosis and placement of children in mental disability and emotional disturbance classifications. However, the increase is also suspected to be the result of variations in diagnostic criteria at the state level brought about by the lack of such criteria in the federal definition. Attempts were made to remedy this situation in 1977 when the U.S. Office of Education enacted the following criteria for the determination of a specific learning disability:

> A) A team may determine that a child has a specific learning disability if:
>
> 1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed...(see below)... when provided with learning experiences appropriate for

the child's age and ability levels; and

2) The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas:

(i) Oral expression
(ii) Listening comprehension
(iii) Written expression;
(iv) Basic reading skill;
(v) Reading comprehension;
(vi) Mathematics calculation; or
(vii) Mathematics reasoning.

B) The team may not identify a child as having a specific learning disability if the severe discrepancy between ability and achievement is primarily the result of:

1) A visual, hearing, or motor handicap;
2) Mental retardation;
3) Emotional disturbance; or
4) Environmental, cultural, or economic disadvantage.

(Federal Register, p. 65083)

The issue of concentrating on a discrepancy has become a cornerstone in assessment and identification. This criterion, while an improvement in the definition proposed in PL 94-142, does not specify the magnitude of ability-achievement discrepancy required or the procedures for how such a discrepancy would be obtained. A formula was initially proposed but was withdrawn due to criticism from researchers over it's statistical properties. Individual states were allowed to determine the method of calculation and level of significance needed for classification.

Thorndike (1963) states in his book, The Concepts of Over and Underachievement,

> In much of the work on prediction of academic achievement, educators (and psychologists) have suffered from a kind of single-minded obsession with intelligence or scholastic aptitude tests as predictors. These tests have at times been virtually deified as an exemplification of exact and absolute truth. (p. 3)

In the absence of a unifying theory constituting commonly accepted attributes of the nature of learning disabilities, discrepancy between ability and achievement has become a fundamental driving force in learning disabilities (Algozzine & Ysseldyke, 1988; Ysseldyke, Algozzine, Shinn, & McGue, 1982). It has assumed this prominence by virtue of being a readily quantifiable means upon which legislators could determine budget allocations and practitioners in the field could base the difficult decision of who should or should not receive special educational placement.

Reliance on the use of a discrepancy score for identification purposes presents problems, in both research and practice. First, there is the lack of a set point on the normal curve which serves to define what constitutes a severe discrepancy. This point is left up to the state or district to decide based on the number of children who can be accommodated within the financial structure of the educational system (Algozzine & Ysseldyke, 1988). The decision regarding the significance of the discrepancy is therefore largely arbitrary.

This situation is compounded by the use of various types of statistical methods such as deviation from grade, expectancy formula, standard score comparison, regression analysis (Mercer et al., 1985). Consequently, economics and politics play a role in determining eligibility for services. A child may qualify for services in one district or state and not in another. Aside from the obvious practical implications for the individual child, research based on existing populations of students with learning disabilities is to some unknown degree confounded. This makes advancement in the theoretical definition of true learning disabilities difficult if not impossible (Torgesen, 1986). Adelman and Taylor (1991) present the following assertion, "At the root of this problem is

the fact that too little attention has been devoted to the theoretical problem of developing a classification scheme that delineates the phenomena defining the field" (p. 22). The field of learning disabilities lacks a concise theoretical framework from which a differential diagnostic process can be developed to reliably delimit learning disabilities from low achievement and/or aptitude. Some researchers have argued that the use of discrepancy scores, while differentiating between low achievement and learning disabled populations at the group level fail to effectively make this distinction on an individual basis. In a study conducted by Ysseldyke et al. (1982), 82% to 100% of the individuals in two groups scored within a common range on 49 different psychometric measures. This resulted in the misclassification of approximately 40% of the students under the federal definition. They concluded that the use of an ability-achievement discrepancy would lead to considerable misclassification in the identification of learning disabled students, needlessly classifying some while unfairly denying service to others.

An additional problem in making discrepancy scores the primary criterion for identification is the type of assessment mandated. Gutkin and Conoley point out,

> Although school psychologists have the requisite knowledge to contribute in significant and unique ways to the psychological and educational well-being of our nation's children, school psychological services often have little real impact beyond the assignment of diagnostic labels and special class placements for a limited range of handicapped students. (p. 203)

The information gained and interventions proposed during traditional assessment are often seen by the classroom teacher as unrelated or lacking in utility for curriculum and instructional practices. Such assessment practices,

accounting for 50% to 60% of a school psychologist's time, also restrict the amount of time available for consultative and direct/indirect intervention activities (Gutkin & Conoley, 1990; Hutton, Dubes, & Muir, 1992) thus hindering educational enhancement opportunities on a class and system level.

It is little wonder then, given the lack of utility of discrepancy scores in accurately differentiating the nature of students with learning disabilities as a unique subgroup of students (i.e., those having specific processing difficulties) and their inability to produce viable interventions and instructional strategies within the classroom, that some researchers and organizations have called for the abandonment or phasing out of the use of discrepancy scores for the determination of special services eligibility (Algozzine & Ysseldyke, 1988; Clarizio & Phillips, 1989; Council for Learning Disabilities, 1987). Algozzine and Ysseldyke (1988) sum up this viewpoint well stating,

> . . . There is nothing to support the use of discrepancies to determine the need for special education. This method is probably as bad as any other for achieving this noble goal. Similarly, we believe it is wrong to argue that discrepancies are the best and only way of determining which low achievers should be eligible for special education. We think discrepancies have become a popular tool in the process of limiting the number of students who receive special education because, through numbers, they facilitate in seductive and sophisticated ways otherwise difficult decisions. (p. 315)

It is not, however, the intent of this researcher to advocate the discontinuation of discrepancy scores as a criterion for learning disability classification. Such an action at this time poses two risks. First and foremost, to eliminate the use of discrepancy scores without providing some equivalent or more effective means of diagnosis poses a threat to school psychologists' ethical and legal responsibilities to ensure appropriate treatment. That is, what

we do (or fail to do) must result in more benefit than harm to the child. Secondly, and more fundamentally, if education is to progress as a science, it is necessary to develop a foundation from which to work. It is counterproductive in the long run to abandon current methods seen as inadequate only to adopt new methods that lack a sufficient research foundation built upon empirical fact. Such practices impede the development of new methodologies and often lead to the reintroduction of old ideas as new.

With this in mind, it is perhaps more appropriate to begin the search for an alternative means of deriving a discrepancy score which is less time and resource consuming. This study examines the possibility of using group-administered achievement (Iowa Tests of Basic Skills) and ability test (Cognitive Abilities Test) scores as substitutes for currently used individually administered test (Weschler Intelligence Scale for Children-Revised, Woodcock-Johnson Tests of Achievement-Revised) scores in the derivation of a discrepancy score.

CHAPTER 3

DESIGN OF THE STUDY

Subjects

There were no subjects tested for the purpose of gathering data for this study. Data were compiled from the records of 26 students diagnosed as having a specific learning disability during their third grade year and who are currently receiving special education services. Two Iowa school districts, one rural and one suburban, supplied the subjects used for this study. Subjects were also pooled from the 1991-1992 and 1992-1993 school years to increase the number of subjects available. Due to confidentiality considerations, no data concerning race or socioeconomic status were obtained and no names were used to label any testing information.

Procedure

Information was obtained through the inspection of comprehensive and psychological records of students currently receiving services under the diagnosis of a specific learning disability. Only subjects evaluated during their third grade academic school year and having the required IQ-achievement discrepancy (while also meeting other LD criteria) were selected as subjects. Discrepancy scores were calculated by subtracting the standard scores of the WJ-R achievement subtests and Broad Range scores from the WISC-R Full Scale IQ (see Appendix A for subject WISC-R Full Scale and CogAT battery scores). These discrepancies were then compared to the discrepancy level needed to qualify for a learning disability based on the State of Iowa Department of Education's Regression Formula. A table implementing this formula was developed at Heartland AEA 11, (J. Stumme & R. Tucker, personal

communication, 1990; see Appendix B). The table can be used to calculate the needed discrepancy for various combinations of tests by inputting each test's reliability coefficient. Subtests of the ITBS chosen were those corresponding to areas of the WJ-R that were found to have the necessary magnitude of discrepancy to qualify under the traditional method. Calculations were made separately for each of the CogAT's three batteries due to the lack of a composite score. The same method of subtracting the achievement standard scores from the IQ score and then comparing the discrepancy to that needed based on the regression table. Tables were generated using a binary system (1 = qualified; 2 = did not qualify) to indicate which areas were found to be sufficiently discrepant for each student using the group assessment results.

CHAPTER 4

RESULTS AND DISCUSSION

Discrepancy scores were computed using each test's reliability coefficient and the regression table in Appendix B for the standard score differences between the WISC-R Full Scale IQ and the Broad Reading, Computation, Broad Math, and Broad Written Language standard scores of the WJ-R.

Discrepancy scores were computed using the same method for the standard score differences between the Verbal, Quantitative, Nonverbal battery standard scores of the CogAT and the Reading, Vocabulary, Computation, Total Math, Total Language standard scores of the ITBS corresponding to the areas identified by the WISC-R /WJ-R discrepancy scores for each subject. Significantly discrepant scores were assigned a value of 1 and nonsignificant scores were assigned the value 0, tables were generated for each set of discrepancy scores generated.

As shown in Table 1, all 26 subjects were discrepant in at least one area of achievement using the discrepancy scores generated by the WISC-R/WJ-R. Twelve subjects were identified as having a significant discrepancy in Broad Reading, 2 in Computation, 12 in Broad Math, and 16 in Broad Written Language. Nine subjects were found to be significantly discrepant in more than one area of achievement.

Table 1

Achievement Areas Identified as Discrepant Using the WISC-R and WJ-R

	WJ-R SUBSCORES			
CASE NUMBER	BROAD READING	COMPUTATION	BROAD MATH	BROAD WRITTEN LANG.
1	1	1	0	1
2	1	0	1	0
3	0	0	0	1
4	0	1	0	0
5	0	0	1	0
6	1	0	0	1
7	1	0	1	1
8	0	0	0	1
9	0	0	0	1
10	1	0	1	1
11	1	0	0	0
12	1	0	1	1
13	1	0	1	1
14	0	0	1	0
15	0	0	0	1
16	1	0	1	1
17	0	0	1	0
18	1	0	1	1
19	0	0	1	0
20	0	0	0	1
21	0	0	0	1
22	0	0	1	0
23	0	0	0	1
24	1	0	0	0
25	0	0	0	1
26	1	0	0	0
TOTAL	12	2	12	16

Note. The number 1 indicates areas of significant discrepancy. The number 0 indicates areas in which the discrepancy was nonsignificant.

As noted in Table 2, discrepancy scores generated using the Verbal Battery of the CogAT and ITBS identified 17 of the 26 subjects. Six subjects were identified in Reading, 4 in Vocabulary, 3 in Computation, 6 in Total Math, and 10 in Total Language. Six subjects were identified as discrepant in more than one achievement area. The discrepancy scores generated using the Verbal battery of the CogAT and ITBS did not obtain an acceptable level of significance, using a Chi Square analysis, in determining a severe IQ-achievement discrepancy for a specific learning disability,

$X^2(1, \underline{N} = 26) = 2.46, \underline{p} > .05$.

Table 3 reveals that the discrepancy scores generated, using the Quantitative Battery of the CogAT and ITBS, identified 16 of the 26 subjects. Five subjects were identified in Reading, 5 in Vocabulary, 5 in Computation, 6 in Total Math, and 6 in Total Language. Eight subjects were identified as discrepant in more than one achievement area. The discrepancy scores generated using the Quantitative battery of the CogAT and ITBS did not obtain an acceptable level of significance, using a Chi Square analysis, in determining a severe IQ-achievement discrepancy for a specific learning disability,

$X^2(1, \underline{N} = 26) = 1.38, \underline{p} > .05$.

Table 2

Achievement Areas Identified as Discrepant Using the CogAT Verbal Battery and ITBS

	ITBS SUBSCORES				
CASE NUMBER	READING	VOCABULARY	COMPUTATION	TOTAL MATH	TOTAL LANGUAGE
1	0	0	1	0	1
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	1	0	0
5	0	0	0	1	0
6	0	0	0	0	0
7	0	0	0	0	1
8	0	0	0	0	1
9	0	0	0	0	1
10	1	1	0	0	1
11	1	1	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	1	0
15	1	1	0	0	1
16	0	0	0	0	0
17	0	0	0	1	0
18	1	1	0	1	1
19	0	0	0	0	0
20	0	0	0	0	0
21	0	0	0	0	1
22	0	0	0	1	0
23	1	0	0	0	0
24	1	0	1	1	1
25	0	0	0	0	1
26	0	0	0	0	0
TOTAL	6	4	3	6	10

Note. The number 1 indicates areas of significant discrepancy. The number 0 indicates areas in which the discrepancy was nonsignificant.

Table 3

Achievement Areas Identified as Discrepant Using the CogAT Quantitative Battery and ITBS

	ITBS SUBSCORES				
CASE NUMBER	READING	VOCABULARY	COMPUTATION	TOTAL MATH	TOTAL LANGUAGE
1	0	0	0	1	0
2	0	1	0	1	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	1	1	0
7	1	1	0	0	1
8	0	0	0	0	1
9	0	0	0	0	0
10	1	1	0	0	1
11	1	1	0	0	0
12	0	0	0	0	0
13	1	0	1	0	0
14	0	0	0	1	0
15	0	0	0	0	1
16	0	0	0	0	0
17	0	0	0	1	0
18	0	0	1	0	0
19	0	1	1	0	0
20	0	0	0	0	0
21	0	0	0	0	0
22	0	0	0	0	0
23	1	0	0	0	0
24	0	0	1	1	1
25	0	0	0	0	1
26	0	0	0	0	0
TOTAL	5	5	5	6	6

Note. The number 1 indicates areas of significant discrepancy. The number 0 indicates areas in which the discrepancy was nonsignificant.

Table 4 indicates that the discrepancy scores generated, using the Nonverbal Battery of the CogAT and ITBS, identified 17 of the 26 subjects. Seven subjects were identified in Reading, 5 in Vocabulary, 3 in Computation, 7 in Total Math, and 8 in Total Language. Seven subjects were identified as discrepant in more than one achievement area. The discrepancy scores generated using the Nonverbal battery of the CogAT and ITBS did not obtain an acceptable level of significance, using a Chi Square analysis, in determining a severe IQ-achievement discrepancy for a specific learning disability, $X^2(1, \underline{N} = 26) = 2.46, \underline{p} > .05$.

Counting a subject if they qualified on any of the batteries of the CogAT separately and ITBS identified 23 of the 26 subjects. This comparison, while not equivalent to a composite score, was an attempt at comparing the effect of the test as a whole. The discrepancy scores generated using all batteries of the CogAT and ITBS did obtain an acceptable level of significance, using a Chi Square analysis, in determining a severe IQ-achievement discrepancy for a specific learning disability, $X^2(1, \underline{N} = 26) = 15.38, \underline{p} < .01$. Table 5 presents a summary of qualification by case for each of the intelligence scores used in calculating a discrepancy score.

Table 4

Achievement Areas Identified as Discrepant Using the CogAT Nonverbal Battery and ITBS

	ITBS SUBSCORES				
CASE NUMBER	READING	VOCABULARY	COMPUTATION	TOTAL MATH	TOTAL LANGUAGE
1	0	0	0	1	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	1	0
6	0	0	0	0	0
7	1	1	0	1	1
8	0	0	0	0	1
9	0	0	0	0	1
10	1	1	0	0	1
11	1	1	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	1	0
15	1	1	0	0	1
16	0	0	1	0	0
17	0	0	0	1	0
18	0	0	1	0	0
19	0	0	0	0	0
20	0	0	0	0	0
21	0	0	0	0	0
22	0	0	0	1	0
23	1	0	0	0	1
24	1	0	1	1	1
25	0	0	0	0	1
26	1	1	0	0	0
TOTAL	7	5	3	7	8

Note. The number 1 indicates areas of significant discrepancy. The number 0 indicates areas in which the discrepancy was nonsignificant.

Table 5

Summary of Identification Patterns for Each Test by Case

CASE NUMBER	WISC-R FULL SCALE	CogAT VERBAL	CogAT QUANT.	CogAT NONVERBAL	CogAT SUMMARY
1	1	1	1	1	1
2	1	0	1	0	1
3	1	0	0	0	0
4	1	1	0	0	1
5	1	1	0	1	1
6	1	0	1	0	1
7	1	1	1	1	1
8	1	1	1	1	1
9	1	1	0	1	1
10	1	1	1	1	1
11	1	1	1	1	1
12	1	0	0	0	0
13	1	0	1	0	1
14	1	1	1	1	1
15	1	1	1	1	1
16	1	0	0	1	1
17	1	1	1	1	1
18	1	1	1	1	1
19	1	0	1	0	1
20	1	0	0	0	0
21	1	1	0	0	1
22	1	1	0	1	1
23	1	1	1	1	1
24	1	1	1	1	1
25	1	1	1	1	1
26	1	0	0	1	1
TOTAL	26	17	16	17	23

Note. The number 1 indicates areas of significant discrepancy. The number 0 indicates areas in which the discrepancy was nonsignificant. The CogAT Summary category above indicates whether a student qualified using one or more of the CogAT batteries.

As a requirement for inclusion in the study, all subjects qualified using discrepancy scores generated with the WISC-R. The study's purpose was to compare CogAT/ITBS rates and patterns of qualification against the standard set by the WISC-R/WJ-R. The Verbal, Quantitative, and Nonverbal batteries of the CogAT used separately were unable to approximate the qualification rate of the WISC-R. Only 12 of the 26 subjects qualified on each and every one of the CogAT batteries, three subjects did not qualify. The remaining 11 subjects qualified using one or two of the CogAT batteries. A comparison of the IQ scores of the three subjects who failed to qualify using CogAT/ITBS discrepancy scores revealed no significant variations. The subjects' failed to qualify on the basis of their ITBS scores, which were higher than corresponding WJ-R scores in the area of discrepancy.

Based on analysis of the academic areas identified as discrepant using the WISC-R/WJ-R, there were no discernible qualification patterns among the CogAT batteries. The rates of identification for learning disabilities in reading, computation, math, and written language were randomly distributed across the Verbal, Quantitative, and Nonverbal batteries of the CogAT.

CHAPTER 5

SUMMARY

In these times of limited resources and what appears to be an ever expanding number of students in need of help, it is imperative that special education and the educational field as a whole look closely at the methods used to address the needs of children. One of the more costly components of special education deals with the diagnosis and placement of students. Students diagnosed as having specific learning disabilities comprise the largest portion of students referred for assessment. Given the lack of a concise theoretical framework from which to operate, students are currently diagnosed learning disabled based primarily on an IQ-achievement discrepancy and the lack of several exclusionary factors.

In attempting to find alternate methods of classification which are less costly and time consuming, it is also necessary to ensure the accuracy of assessment methods. Altering the current methods of diagnosis without first studying any corresponding changes in the makeup of the LD population identified could be both injurious to students in need of help and to researchers attempting to find a true learning disabled population. While there are limitations in employing discrepancy scores in the differentiation of slow learners from the truly learning disabled and although many researchers have called for an end to the use of discrepancy scores in the determination of learning disabilities, there is a basis for not abandoning their use until a more effective means of identifying learning disabilities has been established. Under the current system, this appears unlikely to happen. Effective system change will not occur without an operational definition of what constitutes a learning

disability, rather than what does not. At the same time, progress towards this goal is difficult, if not impossible, to achieve due to the lack of a verified LD population from which to conduct research. A means of transition is needed which will allow researchers and practioners in the field access to all students experiencing academic difficulties without negatively impacting special education services to those who already qualify under the current system. Since it is unlikely that large amounts of additional resources will be allocated for this purpose, it is necessary to make more efficient use of the resources available.

This study looked at the possibility of replacing the WISC-R and WJ-R with the CogAT and ITBS in the derivation of IQ-achievement discrepancy scores. Results indicated that the Verbal, Quantitative, and Nonverbal batteries of the CogAT, used separately with the ITBS, were unable to accurately duplicate the discrepancy pattern of the WISC-R and WJ-R. Somewhat disconcerting was the lack of any recognizable pattern between batteries in the types of learning disabilities identified. It might have been expected that the results would show a significantly higher percentage of identifications of reading disabilities using the Verbal battery, a higher percentage of computation and math identifications using the Quantitative or Nonverbal batteries, and a higher incidence of written language identifications using the Nonverbal battery.

While combining each battery's qualifying cases, stating if a student qualified on any of the batteries they qualified overall, produced an acceptable rate of identification, the lack of distinct patterns of identification among the batteries makes this method suspect at best. This method allows the

introduction of added variability, and thus, measurement error by essentially choosing to use the highest score available from among the three batteries of the CogAT. The use of such a method may be unacceptable both financially and theoretically due to the possibility of overidentification of students. A preferable alternative would be the generation of a composite score from which discrepancy scores could be generated.

Several reasons may account for the results found in this study. First, it may be that a sample size of 26 cases is simply too small to give an accurate representation of existing incidence patterns. Identification patterns for specific areas of learning disability may be present for each of the CogAT batteries in the distribution of a large sample. Second, greater levels of student performance variability associated with group administered instruments may result in their inability to make the fine distinctions needed. This issue needs to be addressed separately for each instrument. In this study, the three subjects that did not qualify, did not based on the strength of their ITBS scores. Further studies of this nature might benefit from substituting only one test at a time. For example, looking at discrepancy rates derived from the WISC-R/WJ-R and CogAT/WJ-R. Lastly, it is possible that testing of a random population of all students on the CogAT and ITBS would result in identification of a different population of learning disabled students than those identified by the WISC-R and WJ-R.

Due to the limited scope of this study, further investigation on the use of the CogAT and ITBS in the assessment of learning disabilities is warranted, along with investigation of other alternative forms of assessment. Further replications of this study may need to address the above concerns if meaningful

results are to be obtained. As a school psychologist currently active in the field, I fervently hope and expect that new methods will be developed which will allow school psychologists the opportunity to redirect their field away from an emphasis on the diagnosis of learning disabilities for the purpose of special education placement and towards an emphasis on meeting the academic needs of all children who struggle in school. My greatest job dissatisfaction revolves around the times I must explain to a parent, that although I can readily see their child is struggling and unhappy in school, he is not yet eligible for services at this time because he is not far enough behind. The recommendation that we test again next year always feels like an indictment of failure.

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APPENDIX A

SUMMARY OF INTELLIGENCE TEST SCORES BY CASE

CASE NUMBER	WISC-R FS	C. VERBAL	C. QUANT.	C. NONVERBAL
1	115	107	72	67
2	113	108	117	96
3	100	110	91	95
4	105	110	96	108
5	91	96	83	88
6	100	98	73	98
7	102	88	96	98
8	102	115	89	105
9	85	94	92	104
10	108	105	108	111
11	110	109	103	111
12	91	87	90	87
13	107	92	72	91
14	112	106	98	112
15	103	107	100	109
16	99	85	85	76
17	115	114	118	116
18	99	85	73	75
19	91	86	81	90
20	96	98	95	102
21	103	103	90	91
22	117	110	106	117
23	103	100	98	103
24	86	76	74	77
25	90	102	90	93
26	97	94	91	106
MEAN	101.54	99.42	91.58	97.15
ST. DEV.	9.07	10.44	12.91	13.34

APPENDIX B

CRITERION VALUES FOR STANDARD ERROR OF DIFFERENCE PROCEDURE

RELIABILITY OF INTELLIGENCE TEST

RELIABILITY OF ACHIEVEMENT TEST	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84
0.98	6	7	8	10	11	11	12	13
0.96	7	8	10	11	11	12	13	14
0.94	8	10	11	11	12	13	14	14
0.92	10	11	11	12	13	14	14	15
0.90	11	11	12	13	14	14	15	15
0.88	11	12	13	14	14	15	15	16
0.86	12	13	14	14	15	15	16	17
0.84	13	14	14	15	15	16	17	17
0.82	14	14	15	15	16	17	17	17
0.80	14	15	15	16	17	17	17	18
0.78	15	15	16	17	17	17	18	19
0.76	15	16	17	17	17	18	19	19
0.74	16	17	17	17	18	19	19	20
0.72	17	17	17	18	19	19	20	20
0.70	17	17	18	19	19	20	20	20
0.68	17	18	19	19	20	20	20	21
0.66	18	19	19	20	20	20	21	21
0.64	19	19	20	20	20	21	21	22
0.62	19	20	20	20	21	21	22	22
0.60	20	20	20	21	21	22	22	23
0.58	20	20	21	21	22	22	23	23
0.56	20	21	21	22	22	23	23	23
0.54	21	21	22	22	23	23	23	24
0.52	21	22	22	23	23	23	24	24
0.50	22	22	23	23	23	24	24	24

Note. Adapted from " Regressed Standard Score Tables for the Woodcock-Johnson Psycho-Educational Battery-Revised" by James Stumme and Richard Tucker, 1990, Heartland Area Education Agency 11.