

IDENTIFICATION OF LEARNING  
DISABLED CHILDREN: THE  
MANDATES AND THEIR APPLICATION

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Identification of Learning Disabled Children:  
The Mandates and Their Application

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An Abstract  
Presented to  
the Graduate Council of  
Austin Peay State University

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

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by  
Gary L. Kaiser  
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## ABSTRACT

The purpose of this study was to gather the ability and achievement scores of a select learning disabled (LD) population, N=191, and compare these scores to the federally mandated criteria for LD placement involving the absence of mental retardation and the existence of a severe discrepancy between ability and achievement levels. It was found that approximately 80% of this population had low average intelligence or above and more than 50% had less-than-one standard deviation discrepancy between their ability and achievement levels. A discriminant analysis revealed that the WRAT Reading and Arithmetic scores were discriminant factors in recommending the placement of an LD child in remedial reading, spelling, or arithmetic classes. The predictive consistencies of the discriminant factors were 87%, 71%, and 74% for the Reading, Spelling, and Arithmetic groups respectively.

The review of the literature showed considerable confusion and inconsistency among the states and experts in the field of LD. Specifically, the two areas of confusion are the intellectual level required and the amount of discrepancy required between ability and achievement for a child to be classified as LD. Regulations that would be acceptable to all would be difficult to establish,

but standardized regulations or guidelines that would be acceptable to most professionals are needed to alleviate the confusion.

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To the Graduate Council:

I am submitting herewith a Thesis written by Gary L. Kaiser entitled "Identification of Learning Disabled Children: The Mandates and Their Application." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology

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## CHAPTER I

In the past two decades, a new interdisciplinary field has emerged from the studies of handicapped children. This field is learning disabilities (LD).

As with any new discipline, LD has been confronted with a variety of definitions. From various attempts to define LD, Lerner (1976) listed five different aspects of LD which have been accepted by most professionals and are mandated by law as part of the current definition. First, LD is essentially a neurological dysfunction. It is considered that the LD child's problems have organic etiology. Second, the LD child displays an uneven growth pattern. There is a disparity in the development of his psychological processes. Third, the LD child has difficulty with academic tasks, such as reading, writing, or spelling. Fourth, the LD child shows a significant discrepancy between his ability to learn and his actual achievement level. Fifth is the aspect of exclusion. The LD child does not possess other handicapping conditions that are primarily affecting his performance. These five aspects are all part of the current definition noted in the Education of All Handicapped Children Act of 1975, Public Law (P. L.) 94-142.

Part of the criteria established by the United States Commissioner of Education to identify LD children states

that a child must show a "severe discrepancy" between his/her ability and achievement levels, and this discrepancy is not one primarily caused by mental retardation (U. S. Office of Education, 1977). However, this criteria has received diversified and nonstandardized application.

It is generally considered that the study of learning disabilities began in 1947, with the appearance of Psychopathology and Education of the Brain Injured Child, by Alfred A. Strauss and Laura E. Lehitnen (Lerner, 1976). Alfred A. Strauss, a neuropsychiatrist, and Heinz Werner, a psychologist, found a common behavioral or learning pattern among children previously identified as mentally retarded, emotionally disturbed, autistic, behaviorally maladjusted, or aphasic. Strauss attributed the behavioral and learning problems of these children to brain injury. This hypothesis was unique because it oriented the etiology of these children's problems from emotional or psychogenic to neurological.

However, the term "brain-injury" received considerable criticism due to its negative implications. Stevens and Birch (1957) introduced the term "Strauss Syndrome" to relieve some of the obvious negative aspects of the term "brain-injury." Other authors offered various etiologically or behaviorally oriented terms. Clements (1966)

identified 38 different terms being used to describe the condition.

Kirk (1963) was one of the first to suggest the term learning disabilities. He used the term to describe children who had developmental disorders in the areas of language, speech, and reading but who were not suffering from mental retardation. Bateman (1965) defined children with specific learning disabilities as those who "manifest an educationally significant discrepancy between their estimated intellectual potential and actual level of performance" (p. 220). Johnson and Myklebust (1967) defined psychoneurological learning disabilities as a "fact of adequate motor ability, average to high intelligence...together with a deficiency in learning that constitutes the basis for homogeneity" (p. 9).

During the 1950's, parent groups were formed in order to bring the problems of the learning disabled child to the attention of educators and legislators. One product of these groups was the Conference on Exploration into the Problems of the Perceptually Handicapped Child in 1963. The acceptance of the term "learning disabilities" can be traced to this conference. The conference also established the Association for Children with Learning Disabilities, which by 1974 had chapters in 47 states.

The work of these professionals and parent groups led to the establishment of the 1968 National Advisory Committee on Handicapped Children. Learning disabilities was defined by this committee in its report to Congress. This definition is essentially the same as accepted today and is presently noted in P. L. 94-142. Congress did not officially place the current definition in the law books until 1975 under P. L. 94-142. However, on April 13, 1970, P. L. 91-230 was approved which recognized learning disabilities and provided federal monies to institutions of higher learning, state and local educational agencies, and other public and private educational and research agencies. The monies were allocated for the establishment of model centers to research the most appropriate methods for the education of learning disabled children. This law provided \$63,000,000 to be appropriated under grants and contracts between June 30, 1970, and July 1, 1973. Under P. L. 93-380, approved August 21, 1974, Congress appropriated an additional \$50,000,000 to be appropriated to these institutions between June 30, 1974, and June 30, 1977.

On November 29, 1975, P. L. 94-142 was approved by Congress to become effective in October, 1977. This law defined learning disabilities as follows:

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 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.

This law provided federal monies under entitlements and allocations and also under incentives and grants to assist the states in meeting the educational needs of children identified as learning disabled. In accordance with P. L. 94-142 the Commissioner of Education was to develop the procedures for evaluating children who have specific learning disabilities (SLD).

The initially proposed rules and regulations from the November 29, 1976, Federal Register stated that in order

to be classified as SLD a child must be achieving at a level 50 per cent below his expected level in one or more of the following areas: oral expression, listening comprehension, written expression, basic reading skills, reading comprehension, mathematics calculation, mathematics reasoning or spelling. The 50 per cent discrepancy was to be calculated utilizing the following formula:

$$C. A. \left( \frac{IQ}{300} + 0.17 \right) - 2.5 = \text{severe discrepancy.}$$

The Office of Education held many hearings, meetings and conferences with interested experts, citizens, parents, professionals, and advocate groups concerning the proposed regulation. There was a great deal of opposition to the use of a formula and the 50 per cent discrepancy clause. The amended rules and regulations from the Office of Education, Department of Health, Education and Welfare were published in the Federal Register on December 29, 1977, three months after P. L. 94-142 became effective.

The final rules and regulations omitted two important facets of the proposed identification procedure. The 50 per cent figure for identification of an LD child was removed along with the formula to determine a severe discrepancy. Also, the regulations stated that a child cannot be identified as LD if the discrepancy between achievement and actual ability is primarily the result of mental retardation. The actual verbage concerning these

two important criteria, the lack of mental retardation and a severe discrepancy is as follows.

Criteria are set out for use by the team [M-team] in determining the existence of a specific learning disability. This determination is made based on (1) whether a child does not achieve commensurate with his or her age and ability when provided with appropriate educational experiences, and (2) whether the child has a severe discrepancy between achievement and intellectual ability in one or more of seven areas relating to communication skills and mathematical abilities.

These concepts are to be interpreted on a case by case basis by the qualified evaluation team members. The team must decide that the discrepancy is not primarily the result of (1) visual, hearing, or motor handicaps; (2) mental retardation; (3) emotional disturbance; or (4) environmental, cultural or economic disadvantage.

In this revised regulation spelling was removed as an area of disability, but the other seven areas remained.

With the 50 per cent level of discrepancy removed along with the formula to determine this level, the determination of a severe discrepancy and what is meant by the discrepancy not resulting primarily from mental retardation, emotional disturbances or environmental, cultural or economic disadvantage has been left to the judgement of the personnel involved in the assessment of LD children. This lack of clear, definitive guidelines has created a great deal of inconsistency in the identification of children as learning disabled. Although those who are involved in the identification of LD children have adopted local guidelines to help in the identification process, the lack of a clear-cut definition is troublesome. Tennessee's guidelines as described in the Rules, Regulations and Minimum Standards 1979-1980, are no more definitive than those established by the U. S. Commissioner of Education and include essentially the same terminology for the criteria for placement. The lack of adequate guidelines for identifying LD children has caused and continues to cause concern to those professionals involved in the identification process.

#### REVIEW OF THE LITERATURE

Since federal and state guidelines exclude children from being labeled as LD if their learning problems are

primarily caused by mental retardation, this has been commonly interpreted as meaning that a child must have average intelligence. Although average intelligence is not required by federal laws or regulations in order to identify a child as LD, thus making this interpretation incorrect, a review of the literature shows confusion on the application of IQ scores to determine this misinterpreted criterion of average intelligence. The literature also reveals inconsistencies on the amount of discrepancy between ability and achievement levels, used to determine a "severe discrepancy."

Koppitz (1971) in a five year follow-up study of LD children considered a severe discrepancy as achievement more than one year below a child's mental age.

Heath and Early (1974) studying intramodal and intermodal functioning of normal and LD children, considered a significant deficit in achievement as two grade levels below for children in the 2nd, 3rd, and 4th grades; one grade level below for children in the 1st grade and a score below the 26th percentile on standard readiness tests for children in kindergarten.

Bush and Waugh (1976) reported on the guidelines being used to determine average intelligence in North Carolina, Ohio, and Texas. North Carolina called for an Intelligence Quotient (IQ) score of at least 90, with

occasionally a child having an IQ score between 70-90 meeting the criteria. Ohio considered an IQ score of at least 80 as average intelligence. Texas refrained from using IQ scores but indicated that a child's intellectual functioning must not be more than two standard deviations below the norm. This would be equivalent to a Wechsler Intelligence Scale for Children-Revised (WISC-R) IQ score of 70 or a Revised Stanford-Binet (RSB) IQ score of 68. The WISC-R and RSB are the two major individual measures of intelligence used by most psychologists to assess intellectual functioning.

Phipps (1976) stated that for a child to be labeled as learning disabled they must have average or above average intelligence and two or more years academic retardation.

Mercer, Forgnone and Wolking (1976) reported on the guidelines of Florida and Washington. Florida's guidelines were experimental at the time. In Florida, a child who scored two standard deviations below the mean or above that level on an RSB or WISC intelligence test was not considered mentally retarded. The severe discrepancy, or as the guidelines stated the "academic deficit component," was based on a student's expectancy age which was to be lower than the 10th percentile as measured by standardized achievement tests. The formula to determine a student's

expectancy age of achievement was  $EA = \frac{2MA + CA}{3}$ . Florida also included cut-off scores to determine a process disorder component which was based on a student's expectancy age.

Washington's guidelines called for at least near average intelligence. Processing cut-off scores were also used. The achievement deficiency was to be one year or more below a child's potential for first and second graders, two or more below for third and fourth graders, and three years or more below for fifth graders and above. Children who were reading at an eighth grade level were excluded from special education placement.

Foster and Sabatino (1976) considered 85 IQ as the cut-off for normal intelligence. The discrepancy factor was described as, "a score below the 20th percentile on any achievement subtest, in the presence of normal intelligence, is indicative of an academic dysfunction" (p. 108).

Grill (1977) reported on criteria proposed by Wiederholt to identify learning disabled adolescents. The criteria called for an IQ of not less than 85 and academic achievement in any area at or below the second grade.

Ritter (1978) in a follow-up study of mainstreamed LD children described the subjects as, "All children had been previously diagnosed as learning disabled using the operational definition of average or above intelligence,

academic deficit of at least 1 1/2 years in one or more academic areas" (p. 254). The ages for the study group ranged from 8 years, 4 months to 12 years, 8 months.

Fuller (1978), reporting on his research on EEG Alpha rhythms of LD children, used subjects who had a Wechsler Intelligence Scale for Children (WISC) Full Scale score of at least 90 and an academic level two years below on the Reading portion of the Wide Range Achievement Test (WRAT) and one year below on the Arithmetic portion.

Loe (1978) in his study of verbal elaboration and the implications for learning disabilities used subjects whose WISC IQ's ranged from 85 to 114, and who were achieving at least two years below their grade expectancy level.

Hallahan, Gajar, Cohen and Tarver (1978) reporting on a study comparing LD and normal children stated, "The children were in the average range of ability, as measured by the WISC, and were achieving two years or more below grade or chronological age level, or both" (p. 48-49).

The review of the professional journals reveals obvious inconsistencies in the determination of average intelligence and the determination of a severe discrepancy when classifying LD children. However, these inconsistencies are not surprising when considering that Mercer et al. (1976)

reported that out of 42 states, 19% used the National Advisory Committee on Handicapped Children (NACHC) definition to classify LD children, 36% modified the definition, 38% did not use it at all and 5% of the states reported no definition for LD whatsoever.

Most children seem to be identified using a grade level discrepancy. However, Lerner (1976) pointed out a hazard in using grade level discrepancies. A grade level discrepancy of six-months for a first grader is much more severe than a six-month discrepancy for an eleventh grader. Thus a certain grade level discrepancy cannot be applied across the board to all grade and age levels.

Brill (Note 1) cautioned against the use of grade level scores. He pointed out that the WRAT is not a criterion-referenced test of specific instructional objectives, but an age-normed referenced test; that standards of grade level performance vary extensively even in the same school and that grade ratings should never be used to show growth or regression either of individuals or groups. Brill suggested the use of standard scores rather than grade ratings to make direct, meaningful comparisons between groups and individuals.

The examination of the above research has shown the use of an inappropriate score used to determine an ill-defined discrepancy factor that is significantly below

an ill-defined and varying intellectual or ability factor in identifying LD children.

Clearly, there is a need for empirical data reflecting what criteria professionals are actually using. What is the intellectual level of children identified as LD? What is the amount of discrepancy between ability and achievement that has been used to identify a severe discrepancy? What criteria are used to classify children as LD in practice as compared to the mandated definition?

#### PURPOSE

The purpose of this study is to compile and analyze specific data that was used in placement of children in LD classes, specifically in the Clarksville-Montgomery County School System, Clarksville, Tennessee. The study will answer the following questions pertaining to this select group: (1) What was the average IQ score of children classified as LD? (2) What amount of discrepancy was used to determine a severe discrepancy? (3) What variables were used as the discriminating factors in recommending the academic area in which an LD child needed remediation? (4) What was the predictive consistency of these discriminant factors in recommending a child for placement in a remedial area?

## CHAPTER II

### METHOD

#### Subjects

Tentative subjects for the study were all the children who had been placed in LD programs in the Clarksville-Montgomery County School System (CMCSS), Clarksville, Tennessee, between January, 1973, and December, 1979. The CMCSS has a total school population of 14,302 and according to the February, 1980 census, an LD population of 427.

Permission to review the files of the LD population was received from the Assistant Director of Schools, CMCSS, through the lead school psychologist.

The names of the subjects were taken from a computer print-out dated December, 1979, prepared by the Tennessee Department of Education which listed children placed in LD programs. A school administrator noted that the print-out was not to be considered as fully inclusive of all children placed in special education as LD. Some subjects listed were identified early in 1973 and were no longer in the program. The Director of Special Education also provided classroom rosters from each individual LD teacher identifying each child currently receiving special education services as LD. Although there were duplications on the

two lists, no subject was included more than once in the sample. The records for each subject on each list were examined to determine if he/she met the criteria for inclusion in the sample. Only those placed in LD classes utilizing scores from the WISC or the WISC-R and the WRAT were included in the sample. Any child placed using solely other IQ measures such as the Slossen Intelligence Test (SIT) or the Revised Stanford-Binet, L-M (RSB) were excluded. Any child placed using solely other achievement measures such as the Peabody Individual Achievement Test (PIAT) or the Key Math were also excluded. Since the WISC or WISC-R cannot be used with children under five or six years of age respectively, or over sixteen or sixteen years, eleven months respectively, children outside those age perimeters were also excluded from the sample population. The number of student files that were available for examination was 395. The number of children who were placed using these two measures and included in the sample was 191. Several subjects' files included both initial and reevaluations. Only those scores from tests administered at the time of initial placement were collected. Scores from reevaluations were not used.

#### Procedure

From the files of the 191 subjects that met the

criteria for inclusion in this study, the following data were collected and analyzed: (a) gender, (b) race, (c) WISC or WISC-R Full Scale, Verbal and Performance IQ scores, (d) WRAT Reading, Spelling, and Arithmetic scores, and (e) designated area of remediation, either reading, spelling and/or arithmetic. The area in which a child was to receive remediation was noted on the Individualized Education Programs (IEP). However, several inconsistencies were noted among the IEP's, psychological reports, and parent response forms of which area was to be remediated. If the need for remediation was indicated by the subject's psychological examiner on any one of these forms, the child was included in the sample as needing remediation in that area.

Other data that were collected for demographic purposes and to safe-guard against duplication of collected data were: (a) name, (b) age identified, (c) level of education when identified, i.e., elementary, junior high, or secondary, (d) birthdate, year and month only, (e) existence of an additional handicap, and (f) visual-motor perceptual test administered. Data that were not significant to the purpose of this study, but may be of interest to the reader is reported in Appendix A.

Data utilized were analyzed using the Statistical Package for the Social Sciences (SPSS) run on the VAX 11/780

computer.

### Instruments

The WISC or WISC-R and WRAT scores were selected for utilization in this study for these reasons:

- (1) Both of these instruments have a mean of 100 and a standard deviation of 15.
- (2) The WRAT was constructed as an achievement supplement to the WISC (Jastak, Note 2).
- (3) Both of these instruments are widely used and accepted by psychologists in evaluations of the ability and achievement levels of school-age children.
- (4) Both of these instruments have reported high reliability and validity coefficients.

Jastak and Jastak (1978) reported split-half reliability coefficients for Level I and Level II of .94 to .98 for the WRAT. They also noted a 1962 study by Wagner, who reported a .78 correlation between teacher's ratings and WRAT reading scores and a .88 correlation, significant beyond the .01 level, between mid-term grades and the WRAT scores.

Wechsler (1974) reported average reliability coefficients of .94, .90, and .96 for the Verbal, Performance and Full Scale portions of the WISC-R, respectively. He also reported validity correlation coefficients of .71, .60, and .73 for the Verbal,

Performance and Full Scale portions of the WISC-R, respectively with the RSB (Form L-M, 1972 Norms).

- (5) The WISC or WISC-R and the WRAT were the most widely used IQ and achievement measures in the CMCSS, according to the lead school psychologist.

### Limitations

It is recognized that these two measures of ability and achievement are not used as the sole criteria for placement of children within LD classes. In all 191 cases, each child was administered a test to assess their visual or auditory perceptual abilities or their motor processing abilities. A test of visual-motor perception was the most predominant type of perceptual test administered, 88% of the 191 cases. Thus, placement into an LD class often may have been made primarily on the basis of the scores received on measures of perceptual ability rather than analysis of the discrepancy between ability and achievement levels. However, even though there appears to be a significant deficit in perceptual functioning, current federal and state regulations do not mandate that money be appropriated for special education unless a perceptual difficulty is severely affecting a child's academic achievement level. Thus, although other criteria may have been used to place children in this sample in an LD remedial class, this would not adversely affect or limit

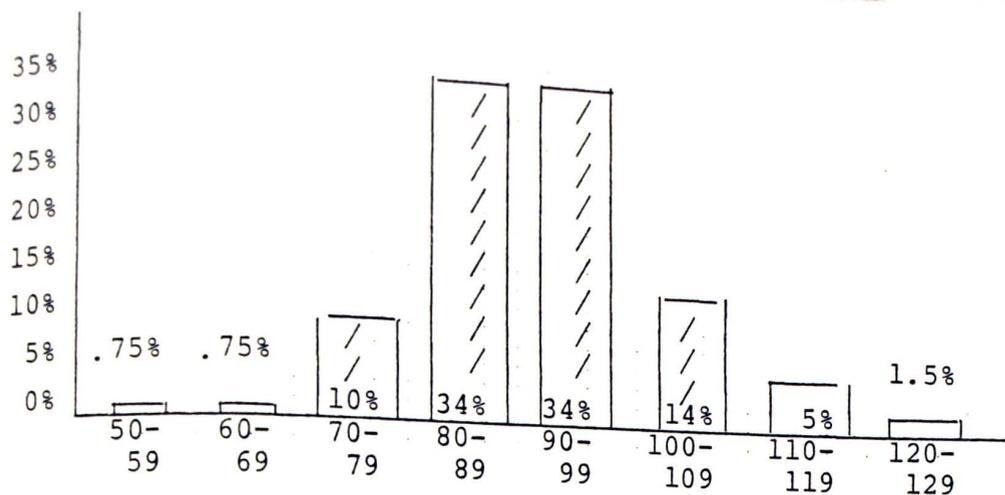
the purpose of this study.

It is recognized that the WRAT was not the sole achievement measure used when evaluating these subjects. The actual grade level at which a child was achieving in the classroom was the determining factor in some placements. State and federal regulations require that no single procedure be used as the sole criterion for placement (Tennessee State Department of Education, 1979; U. S. Office of Education, 1977). There was no consistent way of determining the discrepancy between the child's grade placement and his/her actual achievement level in the classroom when this criterion was used for placement. Therefore, this study was limited to an examination of the scores on the WRAT as the measure of achievement and the determination of the discrepancy in standard deviation units between the WISC or WISC-R and the WRAT standard scores.

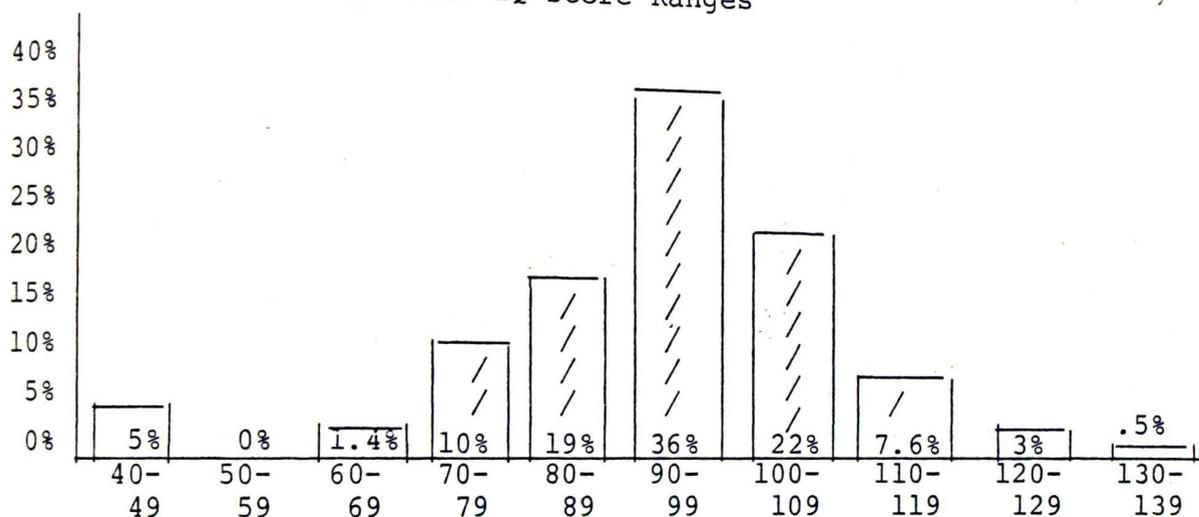
## RESULTS

What was the average IQ score of children classified as LD?

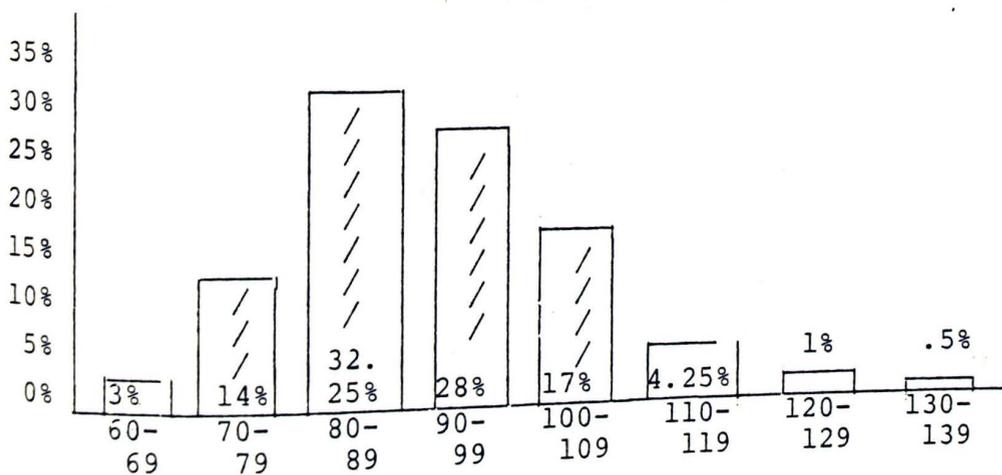
The mean IQ scores for the total group, N=191, were 91, 90, and 94 for the Full Scale, Verbal and Performance IQ scores respectively. Thus, on the average, the LD subjects in this sample had IQ's that were in the average range of intellectual functioning (Wechsler, 1974). However, averages can be misleading. There can be considerable differences among several groups on the mode and range of IQ scores with the same mean IQ score. An analysis of the frequency of the IQ scores showed that 88% of the Full Scale scores, 88% of the Performance scores, and 83% of the Verbal scores were in the low average, average, or above average range of intellectual functioning based on the presently established WISC-R criteria (Wechsler, 1974). Of the remaining subjects, approximately 1% of the Full, 2% of the Performance and 3% of the Verbal Scaled scores were in the mentally deficient range and approximately 11% of the Full, 10% of the Performance, and 14% of the Verbal Scaled Scores were in the borderline range. Figure 1 graphically depicts the percentage of LD children from this sample that fell in various ranges



Full Scale IQ Score Ranges



Performance IQ Score Ranges



Verbal IQ Score Ranges

1. Percentage of children scoring in various IQ ranges.

from the three WISC and WISC-R IQ scores.

The total group was also categorized into six groups. Three groups included those LD subjects who were recommended for remediation in reading, spelling, or arithmetic and three groups included those LD subjects who were not recommended for remediation in reading, spelling, or arithmetic. These groups are designated as the Reading-Remediation, Spelling-Remediation, and Arithmetic-Remediation Group or the Reading-No-Remediation, Spelling-No-Remediation, and Arithmetic-No-Remediation Group. This categorization was based on the practice that a child might be recommended for remediation in only one, in two, or in all three of the areas. The mean IQ scores from these six groups also fell into the average range with one exception. The exception was the Arithmetic-No-Remediation Group whose average Verbal IQ score was 89. All other mean IQ scores from the six categorized groups ranged between 90 and 94. When considering that the average standard error of measurement for the Full Scale, Verbal, and Performance scores are 3, 4, and 5 respectively (Wechsler, 1974), these mean IQ scores indicate little IQ variation of children recommended for placement in different remedial areas.

Immediate analysis of these results seem to indicate that "average" intelligence is a common prerequisite for a child to be classified as LD within the CMCSS. However,

there must be a severe discrepancy between a child's ability and achievement levels in order to be classified as LD. As a child's IQ score decreases, so are the chances of there being a severe discrepancy between his/her ability and achievement levels. Thus, a near average IQ is a forced-factor when considering LD placement and not a required-factor as is inferred from the review of the literature and these results. With this consideration, average or near average IQ scores of an LD group would be an expected, but not necessarily required factor.

What amount of discrepancy was used to determine a severe discrepancy?

In Table 1, each of the three Remediation groups and in Table 2, each of the three No-Remediation groups were categorized dependent upon the amount of discrepancy that was shown between their measured ability and achievement levels. Four categories of two, one and one-half, one, and less-than-one standard deviation discrepancy between the standard scores on the intelligence measures and achievement measures were constructed. A fifth category was also established to show achievement levels greater than ability levels.

In reviewing these tables, the reader should be cautioned against drawing hurried conclusions. It will be noticed that many children who were recommended to

Table 1  
Remediation Groups'  
Discrepancy Between Ability and Achievement Levels

Ability - Achievement	Ability > Achievement				Ability < Achievement
	Two Standard Deviations	One-Half Standard Deviations	One Standard Deviation	Less-Than One Standard Deviation	All Levels
Reading-Remediation-Group					
F - Reading	2.8% (5)	14.7% (26)	14.1% (25)	52.6% <sup>e</sup> (93)	15.8% (28)
V - Reading	3.4% (6)	12.4% (22)	17% (30)	47.4% <sup>f</sup> (84)	19.8% (35)
P - Reading	12.4% (22)	13.6% (24)	19.8% (35)	35% (62)	19.2% (34)
Spelling-Remediation-Group					
F - Spelling	7.9% (13)	15.9% (26)	16.4% (27)	45.2% <sup>c</sup> (74)	14.6% (24)
V - Spelling	6.7% (11)	16.5% (27)	17% (28)	42.7% <sup>d</sup> (70)	17.1% (28)
P - Spelling	15.2% (25)	17.1% (28)	22% (36)	30.5% <sup>b</sup> (50)	15.2% (25)
Arithmetic-Remediation-Group					
F - Arithmetic	5.2% (6)	10.3% (12)	12.1% (14)	53.4% <sup>c</sup> (62)	19% (22)
V - Arithmetic	3.4% (4)	12.1% (14)	13.8% (16)	44.8% <sup>c</sup> (52)	25.9% (30)
P - Arithmetic	6.9% (8)	13.8% (16)	23.3% (27)	37% <sup>a</sup> (43)	19% (22)

Note. F indicates Full Scaled Score, V indicates Verbal Scaled Score, and P indicates Performance Scaled Score.

Note. Numbers in parenthesis are the actual number in each group.

- <sup>a</sup> one child in this group showed no discrepancy between ability and achievement
- <sup>b</sup> two children in this group showed no discrepancy between ability and achievement
- <sup>c</sup> three children in this group showed no discrepancy between ability and achievement
- <sup>d</sup> four children in this group showed no discrepancy between ability and achievement
- <sup>e</sup> five children in this group showed no discrepancy between ability and achievement
- <sup>f</sup> seven children in this group showed no discrepancy between ability and achievement

Table 2  
No-Remediation Groups'  
Discrepancy Between Ability and Achievement Levels

Ability - Achievement	Ability > Achievement				Ability < Achievement	
	Two Standard Deviations	One One-Half Standard Deviations	One Standard Deviation	Less-Than One Standard Deviation	All Levels	
Reading-No-Remediation-Group						
F - Reading	0% (0)	0% (0)	0% (0)	35.7% (5)	64.3% (9)	
V - Reading	0% (0)	0% (0)	0% (0)	35.7% (5)	64.3% (9)	
P - Reading	0% (0)	7.1% (1)	0% (0)	28.6% (4)	64.3% (9)	
Spelling-No-Remediation-Group						
F - Spelling	7.4% (2)	7.4% (2)	7.4% (2)	51.9% (14)	25.9% (7)	
V - Spelling	3.7% (1)	7.4% (2)	18.5% (5)	48.2% <sup>a</sup> (13)	22.2% (6)	
P - Spelling	7.4% (2)	14.7% (4)	18.5% (5)	29.7% (8)	29.7% (8)	
Arithmetic-No-Remediation-Group						
F - Arithmetic	0% (0)	2.7% (2)	6.6% (5)	48% <sup>a</sup> (36)	42.7% (32)	
V - Arithmetic	0% (0)	1.3% (1)	4% (3)	46.7% <sup>b</sup> (35)	48% (36)	
P - Arithmetic	1.3% (1)	5.4% (4)	17.3% (13)	40% <sup>a</sup> (30)	36% (27)	

Note. F indicates Full Scaled Score, V indicates Verbal Scaled Score, and P indicates Performance Scaled Score.

Note. Numbers in parenthesis are the actual number in each group.

<sup>a</sup>one child in this group showed no discrepancy between ability and achievement

<sup>b</sup>four children in this group showed no discrepancy between ability and achievement

receive remediation in an LD class had achievement levels above their ability levels and vice versa. As noted earlier many times a child may have been performing at a much lower level in the classroom as compared to their performance on the WRAT and this was the criterion used for determining a severe discrepancy. This criterion was not included in the study because of the difficulty of translating to standard deviation differences.

It should also be noted that although both of the instruments utilized in this study have high reliability and validity coefficients, situation induced error may have often affected the test results and caused some of the inconsistencies.

All three of the Remediation groups consisted of a predominantly large group of subjects with less-than-one standard deviation discrepancy between their ability and achievement levels. As indicated by the footnotes, some of the children had no discrepancy between their ability and achievement levels and were included in the less-than-one standard deviation category. All three Remediation groups had less than 8% of the subjects with two standard deviations, 16% with one and one-half standard deviations, and 17% with one standard deviation discrepancy between their IQ Full Scale scores and WRAT scores.

The larger discrepancies were predominantly between the IQ Performance scores and the three different achievement scores. However, the average IQ Performance scores were consistently higher among the total group, the three Remediation groups and the three No-Remediation groups. Thus a larger discrepancy would be expected. There is a possible explanation for the greater discrepancy between the Performance score and the achievement measure than between the Verbal and Full Scale scores. If a child has a disability, there is often a clinical judgement made that the Verbal and consequently the Full Scale score may have been lowered because of the presence of a learning disability. Assessment specialists commonly use the scaled scores on individual subtests to draw conclusions about the estimated potential intellectual functioning of a child. If the lower scores are on the subtests which require formal reading or arithmetic achievement, the disability is seen as having lowered these subtests scores and consequently the Verbal and Full Scaled scores. The presence of higher scores on the subtests which are not as dependent on reading or arithmetic achievement, in conjunction with Performance scores and data from other instruments are then sometimes used to estimate a higher potential ability than is reflected by the Verbal and Full Scaled scores earned by the child. Although this judgement may

have been included in the body of the psychological report, only the actual earned scores were utilized for this study.

These results show, with regard to this select group and using only these two instruments, that a substantially large percentage of LD children show a "severe discrepancy" factor of less-than-one standard deviation difference between their measured ability and achievement levels.

The No-Remediation group showed a considerably lower percentage of children with two, one and one-half, or one standard deviation discrepancy between ability and achievement levels. This finding was more evident in the reading group. A much larger percentage of the No-Remediation group also showed achievement levels higher than ability levels. Thus, it does appear that some children are not classified as needing remediation because of the lack of a discrepancy between their measured ability and achievement levels.

What variables were used as the discriminating factors in recommending the academic area in which an LD child needed remediation?

A discriminant analysis was computed using the seven independent variables of: gender, race, IQ Full Scale, Verbal, and Performance scores, and the WRAT Reading, Spelling, and Arithmetic scores. Table 3 lists the

discriminant factors for each group. This analysis identified those variables that loaded on the discriminant function in each remedial area. Since the gathered data were not compared to a normal population, these factors cannot be considered as discriminating factors for LD placement in general, but distinguishes the discriminating factors used for placement of LD children in the remedial areas of reading, spelling, and/or arithmetic.

Table 3  
Discriminating Factors for Each Group

Reading	Spelling	Arithmetic
Gender	WRAT Reading	Verbal IQ
Race	WRAT Spelling	WRAT Reading
Verbal IQ	WRAT Arithmetic	WRAT Arithmetic
WRAT Reading		
WRAT Arithmetic		

Note. Gender and Race were dummy coded for computer input as 1 for whites and males and 0 for blacks and females.

What was the predictive consistency of these discriminant factors in recommending the placement of a child in a remedial area?

Table 4 depicts the actual number of LD students recommended for remediation in each area and the predicted number recommended with regard to the function of the discriminant factors alone.

Although several factors are taken into account for placement in LD classes that have not been considered in this study, 87% of the Reading Group would have been recommended with consideration to the factors of race, gender, Verbal IQ score and WRAT Reading and Arithmetic scores alone; 71% of the Spelling Group would have been recommended with consideration to the WRAT scores alone, and 74% of the Arithmetic Group would have been recommended with consideration to the Verbal IQ score and WRAT Reading and Arithmetic scores alone. This shows a high degree of reliance on the function of the discriminating factors in recommending LD students for placement in the three remedial areas.

Table 4

Actual Number Placed  
with  
Predicted Number Placed

Reading Group			
Actual Number Placed		Predicted Number Placed	
Group	Number of Cases	No-Remediation	Remediation
No-Remediation	14	12	2
Remediation	177	25	154

\*87% classified consistent with discriminant factors

#### Spelling Group

Actual Number Placed		Predicted Number Placed	
Group	Number of Cases	No-Remediation	Remediation
No-Remediation	27	17	10
Remediation	164	45	119

\*71% classified consistent with discriminant factors

#### Arithmetic Group

Actual Number Placed		Predicted Number Placed	
Group	Number of Cases	No-Remediation	Remediation
No-Remediation	75	55	20
Remediation	116	30	86

\*74% classified consistent with discriminant factors

## CHAPTER IV

### DISCUSSION

The purpose of this study was to examine the measured ability and achievement levels of a group of children identified as LD and relate these levels to the mandated criteria for LD placement.

The results show that a majority of children identified as LD had average intelligence and that at least 80% had low average intelligence or above. The review of the literature suggested that average intelligence is being considered as an absolute criteria for LD identification in many instances and that there is considerable confusion about the level of intellectual functioning that is considered average. Different states and experts in the field of LD recommend and use various IQ scores, beginning with 70, to identify average intelligence. However, current federal mandates do not require that a child possess average intelligence to be identified as LD, but only that the discrepancy between ability and achievement is not primarily caused by mental retardation.

It is suggested that average intelligence is a forced-factor for LD placement rather than a required-factor, when considering the mandated criteria of the severe discrepancy that is required between a child's ability and

achievement levels.

The empirical findings relating to the severe discrepancy factor showed that more than 50% of LD children had less-than-one standard deviation discrepancy between their ability and achievement levels. Eight percent or less showed two standard deviations, 16% showed one and one-half standard deviations, and 17% had one standard deviation discrepancy between their IQ Full Scale scores and WRAT scores.

The requirement is only that a child not be achieving at a level commensurate with his/her age and ability when provided with appropriate educational experiences and the presence of a severe discrepancy between intellectual ability and achievement in one or more of seven areas relating to communication or mathematical skills. The results of this study reflect the presence of uncertainty on the amount of discrepancy which is considered severe in this sample of LD children. The research literature indicates the same uncertainty is present throughout the country.

The discriminant factor analysis showed that achievement scores weighed heavily on placement into a certain remedial area. The high predictive consistency of these factors indicates that a large majority of children placed in certain remedial areas would have been placed with

consideration to these discriminant factors alone.

The review of the literature and the results of this study indicate the need for definitive guidelines that would clarify and standardize the classification of children as LD. There is little question that a child may be classified or fail to be classified as LD depending on the state in which he/she resides or the school system in which he/she is enrolled.

## CHAPTER V

### SUMMARY AND RECOMMENDATIONS

The primary purpose of this study was to examine the ability and achievement levels of a sample of children identified as LD and relate these levels to the mandated criteria for LD identification. The sample included 191 subjects classified as LD and receiving services in the Clarksville-Montgomery County School System in Clarksville, Tennessee.

Criteria for LD placement requires that a child's achievement level is not commensurate with his ability level, that there is a severe discrepancy between ability and achievement and that this discrepancy is not primarily caused by mental retardation. A review of the literature shows that this criteria has been incorrectly interpreted to mean that a child must possess average intelligence in order to be identified as LD. Of the children included in this study, 50% did have average intelligence or above and at least 30% possessed low average intelligence. However, as a child's measured intellectual ability is decreased so are the chances of there being a severe discrepancy between his measured ability and achievement levels. Thus, as long as a severe discrepancy is required between a child's ability and achievement levels in order

to be identified as LD, near average intelligence is viewed as a forced-factor rather than a required-factor for LD classification.

The determination of a severe discrepancy between a child's ability and achievement levels has been left to the judgement of the personnel involved in the assessment of children. The originally proposed federal regulation which stipulated that a formula be used to define a severe discrepancy met considerable opposition and consequently was omitted from the final guidelines. However, a review of the literature shows considerable inconsistency and confusion in defining a severe discrepancy. This review of the literature also reveals that grade rating are predominantly used to measure a severe discrepancy even though experts in the field of LD and measurement warn of the inappropriateness of using grade ratings (Lerner, 1978; Brill, Note 1). Therefore, the data examined in the present study compared the standard scores earned on tests of intellectual ability and achievement. It was found that over 50% of LD children have less-than-one standard deviation discrepancy between their measured ability and achievement levels and that 8% or less have two standard deviations, 16% have one and one-half standard deviations, and 17% have one standard deviation discrepancy between their IQ Full Scale scores and WRAT scores.

A discriminant analysis was computed to determine the discriminating factors in three remedial areas. It was found that WRAT Reading and Arithmetic scores were consistent discriminant factors in the three remedial areas of reading, spelling and arithmetic. The consistency of the application of the discriminant factors of 87%, 71% and 74% respectively, for the Reading, Spelling, and Arithmetic groups showed a high predictive consistency in recommending the placement of children in these three remedial areas, when considering the discriminant factors alone.

It is recommended that further research be conducted comparing this population of LD children to a similar normal population. This research would aid in defining the discriminant factors identifying LD children in general.

Further research using other standardized ability and achievement tests would aid in supporting or disputing these results. Little research was found relating to the application of federal laws and regulations. Studies relating to these would aid in bridging the apparent gap between what is practiced and what is mandated by the law.

Although it is recognized that it would be difficult to establish guidelines that would be acceptable to all, the present regulations appear to be leading to great confusion and considerable inconsistency across the nation

in the identification of LD children. More definitive regulations or guidelines and/or stricter adherence to the current ones would probably aid in alleviating much of the present confusion.

APPENDIX A

IDENTIFICATION DATA  
FOR  
TOTAL GROUP

MALES . . . . .	84%
FEMALES . . . . .	16%
WHITES . . . . .	78%
BLACKS . . . . .	22%
MEAN AGE . . . . .	9-8
REMEDICATION PART-TIME . . . . .	94%
MEAN YEAR BORN . . . . .	1967
MEAN MONTH BORN . . . . .	July
ADDITIONAL HANDICAPPING CONDITION . . . . .	5%
IQ FULL SCALE SCORE . . . . .	91
IQ PERFORMANCE SCORE . . . . .	94
IQ VERBAL SCORE . . . . .	90
WRAT READING SCORE . . . . .	82
WRAT SPELLING SCORE . . . . .	80
WRAT ARITHMETIC SCORE . . . . .	86
RECOMMENDED FOR READING REMEDIATION . . . . .	93%
RECOMMENDED FOR SPELLING REMEDIATION . . . . .	86%
RECOMMENDED FOR ARITHMETIC REMEDIATION . . . . .	61%
VISUAL-MOTOR PERCEPTUAL TEST ADMINISTERED . . . . .	88%

Not all of the above data collected was relevant to this studies purpose but was gathered for demographic reasons.

The total group consisted of either blacks or whites. One subject that met this studies criteria for inclusion was of an Hispanic origin, but was not included due to the lack of statistical significance of an N of 1.

The per cent of blacks and whites in this sample was equivalent to the estimated per cent of blacks and whites in the entire school system according to a school official.

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