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The relationship between a developmental reading disorder and social acceptance

Mittleman, Anne Wein, Ph.D.

City University of New York, 1992

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THE RELATIONSHIP BETWEEN A DEVELOPMENTAL READING DISORDER AND SOCIAL ACCEPTANCE

by

ANNE WEIN MITTLEMAN

A dissertation submitted to the Graduate Faculty in Educational Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

1992

This manuscript has been read and accepted for the Graduate Faculty in Educational Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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Chair of Examining Committee

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Abstract

THE RELATIONSHIP BETWEEN A DEVELOPMENTAL READING DISORDER AND SOCIAL ACCEPTANCE

by

Anne Wein Mittleman

Adviser: Professor Roland Yoshida

Why are some learning disabled children socially accepted by their peers, while others have difficulty establishing satisfactory social relationships? This study is a preliminary attempt to respond to this question.

Two subtypes of the learning disabled were examined: the child who is reading 1 to 1-1/2 years below grade level, and the child who is hyperactive and inattentive. Such children were classified as having a Developmental Reading Disorder (DRD) or an Attention-Deficit Hyperactivity Disorder (ADDH). The classification was determined by meeting the criteria defined by the Diagnostic and Statistical Manual of Mental Disorders Revised (DSM-III-R).

One hundred twenty four children from a low socio-economic area of New York City participated. They were mostly Black and Hispanic and in the third, fourth or fifth grades. The classes targeted for study included at least three children who attended a resource room.

Two sociograms, the Peer Acceptance Scale (PAS) and the Structured Peer Assessment (SPA) were administered to the children.

After six months, teachers completed a Conners rating scale and a questionnaire reflecting inappropriate behaviors. Records were examined and teachers queried as required by criteria for a DRD and an ADDH in the DSM-III-R.

The children were classified into four groups: those with a DRD; those with an ADDH; those with both disorders; and those with neither of these disorders.

Separate 2x2 factorial ANOVAS were performed using two levels (present, absent) of the two independent variables, ADDH and DRD. The dependent variables were the scores achieved on the PAS and the SPA.

There were significant main effects for both the DRD and the ADDH variables. Post hoc Scheffé procedures were then performed. Groups significantly differing ($p<0.5$) were those with <u>both</u> disorders and those free of these disorders.

The results confirmed the hypotheses that the presence or absence of a DRD and/or an ADDH <u>are</u> related to a student's social acceptance. This tends to affirm the importance of academic achievement and social behaviors as indices of peer relationships.

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This research could never have been implemented without the help of the personnel of District 8 of the Bronx, New York: the teachers, principals, and especially Ms. Margaret Curcio, Chairperson of Special Education, and Mr. Jay Popper, Supervisor of Psychologists.

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CHAPTER I

INTRODUCTION

Learning disabled children not only have to bear the burden of academic difficulties, their problems are frequently compounded by social difficulties (Bender, 1987; Bryan, 1974; Milich & Landau, 1984; Silverman & Zigmond, 1983; Wilshesky & Reynolds, 1986). However, despite the handicaps, some members of this group adjust well socially (Wiener, 1987). Wiener suggests that one correlate of the level of peer adjustment may be the psychological processing deficit which characterizes the individual with an academic deficit. However, the literature also suggests that the problem behavior manifested by some of these children may be at the root of their difficulties with social adjustment (Bender, 1987). Bender further proposes that future studies should address both problem behavior and social acceptance directly, with the objective of explaining the variance in social acceptance which can be attributed to problem behavior.

Although much current research is concerned with the subtyping of the learning disabled, when attention is focused on the social adjustment of this population, it is regarded as a homogeneous entity (Bender, 1987; Bryan, 1974; Milich & Landau, 1984; Silverman & Zigmond, 1983; Wilshesky & Reynolds, 1986).

In order to more accurately define the social adjustment problems in the LD child, this study focused on two of the subtypes which comprise the learning disabled. By targeting the specific deficits in their functioning, it is hoped that the resolution of their difficulties will be facilitated.

Both of the groups selected are found within the learning disabled population. Although such classification is based on learning problems in many academic areas, the overwhelming consensus in the literature addresses itself to Specific Learning Disabilities in Reading (SLD/R) (Bannatyne, 1971; Lyon & Watson, 1981; Mattis, 1978; Satz & Morris, 1981).

Thus children with a Developmental Reading Disorder comprised one of the groups included in this study.

There is a substantial overlap between children who have a learning disability, and also have been identified as having an Attention-Deficit Hyperactivity Disorder (ADDH). Research reflects that as much as 40% of the latter group has also been categorized as learning disabled according to strict criteria (La Greca, 1987). More specifically, La Greca offers the view that the failure to separate the Attention-Deficit Hyperactivity Disorder (ADDH) subgroup from other subgroups of the learning disabled leads to conflicting results when examining their interaction with their peers.

Consequently, the objective of this research is to explore two factors which present a risk of peer rejection: the academic deficit which characterizes the child with a Developmental Reading Disorder, and the maladaptive behavior exhibited by a child with an Attention-Deficit Hyperactivity Disorder. A consideration of these disorders would be incomplete without further examination of the term which includes these groups, namely, the subject of Learning Disabilities (LD).

Historical and Theoretical Background

By definition, children with learning disabilities are at a constant disadvantage in terms of their inability to progress adequately within the academic sphere. Studies demonstrate that some groups of children, despite intact visual, hearing and motor functioning, without evidence of any major emotional disturbance, or environmental deprivation, continue to fall behind their peers academically. Hinshelwood (1917) was among the earliest to attribute reading difficulties to what he termed "word blindness." Orton (1928) related learning dysfunctions to problems of cerebral dominance which were reflected in difficulties with laterality. Other evidence was noted in "twisted symbols," or mirror imaging. A child thus handicapped might reverse symbols, such as writing "d" for "b" or "E" for "3." Orton referred to this condition as "strephosmybolia." Subsequently, Kirk (1963) coined the

label of "learning disabled" and was influential in the formation of the Association for Children with Learning Disabilities (ACLD).

In addition, a large percentage of this population suffers from difficulties with social adjustment (Bryan, 1974; Bender, 1987; Cook, 1979). Investigators have yet to determine whether the social problems cause the learning disability, whether the learning disability hampers the establishment of good social relationships, or whether both conditions reflect other underlying causes. In any case, it has been demonstrated empirically that while some LD students do have problems in establishing satisfactory relationships with their peers, there are many learning disabled children who have no difficulty in making friends and getting along well socially (Bender, Wyne, Stuck & Bailey, 1984).

Definition

Since the term "learning disabilities" was introduced in 1963, there has been much disagreement in finding a definition for this classification which will include all of the sub-groups it contains. It is interesting to note that originally three groups were merged under this label (Lerner, 1985), the perceptually handicapped, the brain injured and the neurologically impaired. Thus, the classification of learning disabled was heterogeneous in character from its origins, yet we are now engaged in a

controversy which has to justify its division into subgroups in order to address the needs of its population (Fisk & Rourke, 1983; Kavale & Forness, 1987; Lyon & Watson, 1981; McKinney, 1984).

Despite the difficulty involved in formulating a satisfactory definition, any discussion of the subject of learning disabilities must be prefaced by an acknowledgment of the definitions which have been most widely accepted. The first is the one which has been incorporated into the Public Law 94-142. It reads as follows:

> "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The 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 of environmental, cultural or economic disadvantage (Lerner, 1985).

A second part of this law is more specific; it defines a learning disability in more operational terms (Lerner,

1985). Children are considered as learning disabled if they do not perform academically as expected for their age level. This is based on the assumption that they had been adequately exposed to an appropriate instructional experience. In addition, there is a severe discrepancy between their potential and achievement levels in reading, listening, comprehension, math, writing and/or oral expression.

Another significant definition was formulated by the National Joint Committee on Learning Disabilities in 1981. It reads as follows:

> Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g. sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g. cultural differences or inappropriate instruction, psycholinguistic factors), it is not the direct result of those conditions or influences (Lerner, 1985, p. 7).

According to this definition, there is greater

acknowledgment of the heterogeneous nature of a learning disability. It recognizes that the cause is more intrinsic to the individual than to external factors; it also agrees that other handicapping conditions, such as an emotional disorder, may be present in addition to the learning problem.

Other terms used to describe learning disabled children as those with an "attention deficit disorder," are supported by research (Elliot, Halliday & Calloway, 1978; Symmes & Rappaport, 1983). This perspective, as well as other minority views will be addressed in another section of this study which deals with the etiology of learning disabilities.

Regardless of the perspective one espouses, the above mentioned definitions are the most broadly accepted and researched (Bannatyne, 1971; Geschwind, 1962; Mattis, 1978; Myklebust, 1968, Satz & Morris, 1981). According to these definitions, learning disabled children have the following characteristics in common: they have some degree of neurological dysfunction, either biologically or genetically based; there is evidence of difficulty in performing academic tasks; there is discrepancy between one's potential and one's performance; and external causes are excluded. This study is in agreement with these basic concepts, and accepts such definitions as most representative of the consensus of research referred to above.

Theories Which Address the Etiology

There are two broad perspectives from which the etiology of learning disabilities may be viewed.

For many years it was assumed that there was some unique, unitary deficit in a child who, despite normal intelligence, hearing and vision, could not progress academically. This was labeled the "single" or "unitary deficit" theory (Ames, 1968; Elliot, Halliday, & Calloway, 1978; Hinshelwood, 1917; Orton, 1928; Symmes & Rappaport, 1983).

Although some of the current investigators still cling tenaciously to this position (Vellutino, 1985), a growing number are shifting to the acceptance of the theory that not all learning disabled (LD) children present precisely the same pattern of symptoms. Such syndromes of deficits are now referred to as subtypes of the learning disabled, and reflect distinct homogeneous patterns of deficits (Boder, 1973; Doehring & Hoshko, 1977; Fisk & Rourke, 1983; Mattis, 1981; Speece, 1987).

Single Deficit Theory

The work of some of the researchers who support the thinking that a learning disability is a result of a dysfunction in a specific area will be examined in this section. Deficits in the following domains of functioning will be explored: visual-perceptual, left or right cerebral

dominance, developmental, linguistic processing, auditory processing of language and attention and concentration.

One of the first theories which evolved was that a deficit in visual-perceptual functioning reflected the core of the problem. Hinshelwood (1917), an ophthalmologist, discovered that despite the ability of some of his patients to see normally, they could not read. After observing a member of a second generation who was so afflicted, he concluded that the disorder, which he called "congenital word blindness," could be inherited.

Although he confirmed the visual-perceptual deficit as a cause of reading difficulties, Orton (1928) did not agree that the condition was congenital. He studied cerebral dominance and concluded that the problem originated in confused cerebral dominance, rather than in a defect of vision. A symptom of this confusion was in seeing twisted symbols, or what is referred to as "reversals" of numbers or letters.

Another school of thought, the developmental point of view, attributes learning disabilities to the slower maturation of the central nervous symptom in some children. Ames (1968) reflects this position and suggests that children designated as learning disabled, have been erroneously promoted into grades beyond their ability level; that if necessary, they should be retained in a grade until their bodies mature and they can handle the instruction.

Ames (1968) further suggests that one way of overcoming such problems is to test children individually in order to determine the optimum level at which they can function. In summary, she does not recognize that there are "learning disabled" children, only that there are children who have not yet matured to the point where they are "ready" to handle the instruction presented to them.

Vellutino and Scanlon (1985) have adhered to the principle that some deficit in the linguistic process has deterred the LD population from succeeding in reading. They have written and explored extensively many aspects of this process in an effort to isolate the source of the breakdown. The role of verbal memory associated with verbal coding deficits, the speed of interhemispheric learning, and the speed of hemispheric transmission are some of the areas which they have explored. One limitation of Vellutino and Scanlon's study (1985) on verbal memory is that the sample included exclusively "severely impaired readers," and thus cannot be generalized to the "learning disabled" population.

Any dysfunction in auditory language processing may also be a source of difficulty which hampers learning. Myklebust (1983) explored the association between LD children and their ability to understand the spoken word. He found that many children 13 years of age who had reading difficulties were also limited in aural comprehension to the level of 9 year olds. In addition, the performance of 13

year old LD children was three or four years behind that of a control group in expressive language. Thus, Myklebust (1983) concluded that children who had difficulty in the auditory component of language acquisition, also had difficulties in all other areas of language development.

Hyperactivity and the lack of the ability to focus and sustain attention, an "attention deficit disorder," (ADD), is viewed by some researchers as another possible cause of a learning disability. Elliot, Halliday and Calloway (1978) explored the effects of methylphenidate (Ritalin) on the behavior of this population. The rationale for the drug treatment is based on the theory that there exists some deficit in the part of the brain which inhibits impulsive and distractible behavior. When a stimulant, such as Ritalin, is administered to a child diagnosed as hyperactive, it "arouses" this inhibitory center, and results in subdued behavior, more appropriate for learning. The findings of their study suggest that although behavior, as rated by teachers, improves dramatically as the dosage is increased, the ability to perform tasks efficiently peaks at a lower dosage, and <u>decreases</u> when the dosage is too high. Thus there is an optimum dose level for task performance (differing according to individuals) which is lower than the one which achieves a more ideal behavior pattern.

A study by Symmes and Rappaport (1983) explored the ADD population from a different perspective. They administered

three sub-tests of the WISC which tapped children's ability to focus and sustain concentration. The children who could not score well on these subtests, the Digit Span, coding and Arithmetic, were then presumed to have an ADD. The results accurately predicted that this ADD group would later have difficulty in reading. Thus the authors concluded that the inability to focus and sustain concentration which is characteristic of hyperactive children, was a deficit which contributed heavily to later reading difficulties.

Although each of the above mentioned deficits may be present in varying degrees in the LD population, no single unitary deficit is present in all members of this group. Thus, it is apparent that the causes have become increasingly complex as a function of this great variability. Consequently, in terms of identifying specific patterns characteristic of children who have difficulty in learning, we have to view the problem from another perspective.

Multi-Faceted Deficits Theory (Subtyping)

An effort to uncover some of the patterns of variability in the dysfunctions of the target population is reflected in the recent literature (Boder, 1973; Doehring & Hoshko, 1977; Fisk & Rourke, 1983; Mattis, 1981; Speece, 1987).

The underlying assumption of the multi-faceted approach is that there are patterns of deficits displayed by learning

disabled children which will emerge from the research. These patterns will then enable the investigators to classify the groupings or clusters according to their specific characteristics. The homogeneous subgroups thus derived are generally referred to as "subtypes" of the learning disabled population.

The pursuit of the study of subtypes can be approached from at least two different perspectives; by a clinical or a statistical method. The superiority of one method over the other has long been a source of controversy within the discipline of psychological research (Meehl, 1954). While both methods utilize results from tests administered to individuals, the clinical method adds data from the history, as well as impressions and observations gained from personal interviews.

Two methods of multivariate classification techniques have evolved by which the data from measures are collected, and then analyzed according to either the Q-factor analysis technique or the cluster analysis technique. The former "analyzes correlation within subjects rather than among tests" thus providing factors describing groups of subjects rather than groups of tests. The latter, cluster analysis, "matches subjects based on their responses, across an array of variables. It attempts to increase group homogeneity while decreasing group overlap" (Kavale & Forness, 1987, p. 375). The integration of the combined information then

leads the clinician to formulate a hypothesis. From this hypothesis the predictions are made. The application of statistical methods to the research of subtypes will be discussed in the subsequent section.

Q-Factor Analysis Studies.

While Q-Factor and Cluster analysis techniques are both numerical approaches to taxonomy, about one-third of the studies of subtypes of learning disabled have used the Q-factor technique (Kavale & Forness, 1987). Doehring and Hashko (1977) were among the first to use this method. Children were grouped together who showed similar patterns of performance and were classified according to achievement variables. The measures used were oral reading tests and tests designed to measure visual and auditory-visual matching of letters and numbers. There were two broad groups of children selected, one group called "R," were those children whose problems were limited to reading difficulties. The second group, labeled "M," was comprised of children who had mixed problems: the mentally retarded, the learning disabled and also those children who had some type of language disorder, including reading. Thirty-one tests of reading related skills were administered to all the children. The Q-factor analysis was applied to the results of both groups. Type I for both groups R and M revealed poor performance on oral tests; thus, this group was labeled as having a "linguistic deficit." The authors compared this

to the group described by Mattis (1975). In both R and M groups, the Type II category revealed deficits in auditory-visual tests which required associating printed letters with spoken letters. They called this a phonological deficit since it appeared to them that the primary deficit was in the auditory aspect, similar to the deficit which was described by Myklebust (1968). Type III in the R group differed from Type III in the M group. In the former, the third category was labeled as deficient in "intersensory integration," while the third type in the M group was deficient in the "visual-perceptual area." One of the shortcomings of this study is that while slightly different terms have been applied to the categories described, almost all refer to some aspect of a language disorder. In addition, they did not attempt to validate the findings against some external criterion that was not part of the classification procedure. As with other studies mentioned, this research was weakened by the fact that there was no comparison group of normal readers. Another limitation is the statistical Q-technique itself which does not provide for how to classify those children who have multiple loadings on different factors. By this is meant that the children reflect deficits not only in one area, but in two or more basic competencies requisite for effective learning.

Rourke (1978) independently, and then with his

associates, (Petrouskas & Rourke, 1979) used the Q-factor type of analysis, but from a neuropsychological perspective. Twenty different tests tapping cognitive, tactile, and motor skills were administered to a group of 160 children including normal readers and retarded readers. Normal readers were defined as those who achieved a percentile score of 50 or above on the reading subtest of the Metropolitan Achievement Test (MAT), and a score of 60 or above on either the Word Knowledge or Word Discrimination subtest of MAT. Those in the retarded reading group all had a percentile score of 20 or below on the reading subtest of the MAT, and 35 or below on either the Word Knowledge or the Word Discrimination subtest. All subjects in both groups had a full scale IQ of between 80 and 120 on the WISC. Those outside this range were excluded in order to limit the variables. A methodological strength, not found in all studies, was that the total number of subjects were divided randomly into two groups of 80 children each. Another strength was the manner in which reliability was increased by applying the statistical technique to each half of the sample, and then to the total group.

Three subtypes emerged from the analysis. One group was typified by a language disorder, a second group by difficulty in sequencing information, and a third group by deficits in articulation and grapho-motor tasks. These deficits were said to be related to disorders in specific

physical locations of the brain. Thus, despite the different labeling of the groups, there still seems to be one group emerging with a language disorder, another with a problem probably based in some visual-perceptual deficit, and a third type with some degree of motorical handicap. Despite many strengths in the Rourke (1978) and Petrauskas and Rourke studies (1979), there was a serious weakness. The research resulted in 5 subtypes of which only 3 were replicable. However, the three major groupings categorized only about 50% of the subjects into distinct subtypes. Thus, much of the data was lost as a consequence of the limitation of the Q-factor approach in classifying individuals with multiple loadings on different factors.

Cluster Analysis

While Q-factor analysis examines correlations within subjects and has its limitations, cluster analysis, despite its greater popularity with researchers, also has its drawbacks, particularly in the search for subtypes of LD's.

One limitation of this procedure is that frequently there is a strong association between the measure used to construct a category and the subgroup which results. The name of the subgroup has been found to correlate .98 with the test used to make the classification (Kavale & Forness, 1987). One must examine the nature of this relationship; for example, do reading deficient subgroups result because reading tests are used to discriminate among subjects?

Thus, the skill which is being assessed actually defines the subtype which is derived from the data.

Another limitation of this statistical method is that there is a great deal of overlap in the classifications, that is, many subtypes have attributes or deficits in common. However, the nature of learning disabilities is such that the syndromes do overlap - and yet, they are not totally identical. In other words, the boundaries which delineate one group from another are frequently ambiguous.

Despite the limitations, the research continues to progress, and the body of knowledge about subtypes continues to grow. The finding (McKinney & Feagans, 1984) that learning disabled children fall progressively further behind their peers in reading, justifies further research into more effective ways of helping these children than is currently being offered. New approaches of sub-dividing groups according to more closely allied strengths and/or weaknesses may prove to be educationally more effective.

In accordance with such a perspective, a study (Satz & Morris, 1981) tested 236 boys from the Florida Longitudinal Project. This sample included a combination of children diagnosed 6 years previously as learning disabled, plus their matched controls. The results of the WRAT tests were then subjected to a cluster analysis in order to identify the target group of learning disabled, and the comparison subgroups. Thus a special feature of this study is the use

of the cluster analysis technique in order to define the groups to be studied instead of using clinical or school-referred populations.

The cluster analysis method was then applied to the results of the reading, math and spelling tests in order to classify the subtypes. Nine sub-groups emerged from the first application of the clustering techniques. Groups 1 through 7 included those with different patterns of basic skills. Groups 8 and 9 were identified as those most severely impaired with an overall deficit of about 2 years below their grade level. These groups consisted of 89 boys who displayed soft neurological signs and belonged to a lower socio-economic level. The latter two groups, 8 and 9, were combined and then processed by the same cluster statistical method, and resulted in 5 distinct subgroups.

The first group was severely impaired in several areas of language and designated as a "global language impairment," comprising about 30% of the total sample. The second group, 16% of the sample, was impaired on only one of the verbal tests, thus they were labeled as a "specific language impairment." These two groups combined are similar to the previous researchers' broader term of "language disorder" (Mattis, 1978; Petrauskas & Rourke, 1979). Herein lies the difficulty in making comparisons between one researcher's work and another's. Some view the subtype in a more global fashion; others are interested in more closely

defined groups which represent narrower areas of deficit in the process of mastering language.

Satz and Morris described the third group as "mixed language and perceptually impaired," comparable to the subtype described by Boder (1973) as "mixed." Subtype IV was impaired on the nonlanguage perceptual tests and designated as "perceptual-motor impairment;" resembling the visual-perceptual disorder of Mattis (1978). Subtype V did not reflect any impairment on any of the neuro-psychological tests - thus they were named as "unexpected-no neuropsychological impairment" type, of which 5% of the sample fell into this category. The cause for the existence of the 5th type was not discovered by the researchers. They guessed that the reasons for the inability of these children (12 in number) to succeed academically, might be rooted in poor motivation, or emotional problems. Other researchers have also met the same problem. Generally, there are some children who, despite normal IQ and opportunity, are still not able to progress in the basic skills.

In a study by Lyon and Watson (1981) a similar group was derived which had no obvious impairments, yet was not able to master the basic skills. Their study was an attempt to replicate the subgroups which emerged from an earlier study by Mattis (1978). However, while Mattis used a clinical- inferential approach, Lyon and Watson applied the cluster analysis technique in their search for subtypes. In

addition to a sample of 100 learning disabled children, their study used 45 normal readers from the same school district. They identified 6 different subtypes, of which 3 would probably be subsumed under one of Mattis' subtypes labeled as "language disorder." The difference is that the cluster analysis technique broke down some components of language impairment, such as auditory and visual-perceptual deficits, into separate subtypes.

Although many studies by McKinney and his colleagues (McKinney, McClure & Feagans, 1982; McKinney & Feagans, 1984; McKinney, 1984; McKinney, Short & Feagans, 1985; McKinney & Speece, 1986) used the cluster analysis technique to search for subtypes of the learning disabled, their perception of the problem was quite different. The majority of previously mentioned studies focused on searching for clusters of neurological deficits which would differentiate subtypes of the learning disabled. McKinney's approach was to use classroom behavior of children as an index to their future ability to learn.

Several preliminary descriptive research studies prefaced his later work which employed hierarchical cluster analysis techniques. One of his earlier studies (McKinney, McClure & Feagans, 1982) examined the task-oriented, social and affective behavior of 22 pairs of both learning disabled and non-learning disabled. The results reflected less task-oriented and more non-constructive behavior of learning

disabled. However, McKinney recognized that this study was limited in scope because it examined only a mildly impaired group, without comparing them to a control group who were non-learning disabled underachievers.

Pursuing his search for subtypes based on behaviors, McKinney (1984) developed four subtypes according to a cluster analysis of teacher ratings of children's classroom behaviors which were validated by observational data. The first subtype, which included 33% of the sample, was deficient in task orientation and independence, but showed strength in social adjustment. The second type, 10% of the sample, was most severely impaired in achievement. The third group (47%) was low on task orientation and high on extraversion and hostility, while the 4th group (10%), although more impaired academically than others, showed no evidence of behavioral deficiency. McKinney concluded from his study that the behaviors of learning disabled contributed to their difficulties. Unfortunately, the authors made no attempt to explain how the first and fourth groups, although showing no behavioral deficits, were still academically impaired.

McKinney's study of 1984 resulted in 4 subtypes which included a combination of aspects of achievement such as verbal skills and spatial skills with aspects of social adjustment such as independence, consideration and hostility. Subsequently, in conjunction with associates

(Speece, McKinney & Applebaum, 1985; McKinney & Speece, 1986), the clusters were derived by a more detailed assessment of the social behaviors of the children, such as extroversion-introversion, task-orientation - distractibility. Thus, in the former study the categories were viewed more globally - and in the later studies there was a more detailed breakdown of social behaviors.

A longitudinal examination of the academic outcomes of seven behavioral subtypes of children who were studied for 3 years (McKinney & Speece, 1986) provided these results: children rated on measures of dependence/independence, task-orientation/distraction extraversion/introversion and consideration/hostility, and found to display maladaptive behavior in the first grade, evidenced poor academic outcomes 3 years later. Compared to normally functioning children, the children with deviant behaviors such as: attention deficits, conduct problems, hostility and low task orientation during the first and second grades, were consistently at greater risk for academic failure.

While McKinney has researched the possibility of other etiological factors, such as perceptual-linguistic deficits (McKinney, Short & Feagans, 1985), the majority of his studies have approached the subject of subtypes of learning disabled as rooted in maladaptive classroom behavior. His work and the work of his associates have contributed much to the literature of subtyping. However, the possibility that

both the deviant behaviors and the academic deficits may stem from neurological dysfunction has been bypassed by these authors.

Although there exists no definitive answer to the resolution of questions centering around the reasons for inappropriate classroom behavior and difficulties with social adjustment, some of the issues concerned with this topic are addressed in another section of this study.

As noted previously, an alternate approach to the search for subtypes of learning disabled children is via the clinical-inferential method. The next section explores the different perspectives from which the problem may be viewed within this framework.

Clinical-Inferential Approaches to Subtyping

The hypotheses of the researchers differ according to their own theories of how to divide the learning disabled population into more homogeneous groups or subtypes.

One theory (Taylor, Satz & Friel, 1979) is based on the rationale that dividing groups according to the etiology of the disability is the appropriate way to approach the problem. Their premise is that "dyslexia," the inability to read as a consequence of a constitutional disorder, forms a distinct subtype of disabled readers. These researchers conducted a 7 year longitudinal study which had two purposes: to obtain some estimate of the prevalence of learning disabled in the school population, and to test the

validity of an etiological approach to subtyping, the concept of developmental dyslexia. Their study yielded the following results: The school population reflected a 4.4 percentage of learning disabled; in terms of differentiating the non-dyslexic poor readers from the dyslexic poor readers, they found no significant difference. Thus they concluded that classifying children according to their etiology was not an appropriate method of delineating subgroups of the learning disabled.

However, Bannatyne (1971) formulated divisions according to causes ascribed to minimal neurological dysfunction, and hypothesized five subtypes. He suggested that groups may evidence deficits in at least one or more of the following areas of functioning: visuo-spatial, auditory, integrational, conceptual, or motor-kinesthetic.

Another way of approaching subtypes is by examining the patterns of performance of children who have difficulty in learning. Based on the rationale that adequate performance in the basic skills is based on the complex integration of many separate skills in the cognitive and linguistic areas, a breakdown in any of the separate processes involved will impair learning. Thus the resulting patterns of performance will reflect clusters of deficits, each of which will represent a subtype. Mattis (1978) categorized the groups as a "language disorder," "articulatory and grapho-motor dyscoordination" and "visual-spatial disorder." He was able

to classify 90% of the children into one of the three categories.

Denckla's work (1972) resembled that of Mattis inasmuch as the syndromes she identified were similar, and based on patterns of deficits in performance. Her groupings were categorized as: "a specific language disturbance," a "specific visuo-spatial disability," and a "dyscontrol type." Although each had his own nomenclature, both experimenters viewed the groups as having deficits in the linguistic area, in the visual-perceptual area, and in some aspect of motor or kinesthetic functioning. The result of Denckla's work, however, was not as satisfactory as that of Mattis, for she found that 70% of the children studied were not able to fall into any of the categories she devised. These children either had mixed deficits or did not fit into any of her subtypes.

The work of these two researchers, especially that of Denckla, reflect the limitations of the clinical-inferential approach to the search for subtypes. First, the fact that categories are predetermined by the researcher creates artificial boundaries into which children must fit. Despite the use of complex data, the significance of findings are judged by visual inspection instead of by statistical measures. In addition, the objective of these researchers was to create non overlapping subtypes. However, this implies that <u>all</u> the members of a group must reflect <u>all</u> the

attributes which define that group. However, in the behavioral sciences, group membership is more appropriately defined by attributes, or in this case, deficits, which are shared (Satz and Morris, 1981).

A third method of finding subtypes via the clinical-inferential approach, is by the examination of variables of achievement. While the previous researchers measured deficits in specific areas of impairments in neurological and cognitive functioning, Boder (1973) analyzed patterns of achievement more specific to reading and spelling, a more applied, rather than a theoretical approach. She observed not only the quantitative results of reading and spelling, but also the qualitative results. She devised three subtypes based on the deficits reflected on the achievement measures. The first was labeled "dysphonetic," which reflected a deficit in the auditory skills required for reading, as well as writing. Basically, this was a deficit in one of the components of the linguistic process, similar to the Mattis, French and Rapin (1975) and Denckla (1972) categories of a language impairment. Type II was called "dyseidetic," roughly comparable to the visual-perceptual deficits of Mattis and Denckla. The third type was designated as "mixed," a combination of linguistic and perceptual deficits.

Frequently the nomenclature of Boder's subtypes was similar to those of other researchers. For example,

Myklebust's (1968) auditory dyslexia was somewhat like Boder's "dysphonetic" subtype. Based on this somewhat ambiguous similarity to the Myklebust subtype (1968), and groupings described by Denckla (1972), Boder felt her study to be valid. However, despite the excellent clinical findings which resulted from her work, there were many weaknesses. The work of the researchers named above differed from hers in many ways: the evaluation measures differed, sample size and criteria for selection differed. Thus, even if the terminology of the subtypes was similar, comparison of the studies cannot be valid. In addition, as previously noted, visual inspection techniques were used, and there was no comparison group of good readers, further weakening her findings.

Thus, despite great efforts and valuable information gained by these researchers, there were many limitations in terms of generalizing their findings.

Clearly, there is a need for some uniformity in the language by which psychiatrists, psychologists and mental health workers can communicate in order to describe the nature of a client's disorder. This is true whether the description relates to an emotional illness, or to some subtype of the learning disabled population.

One of the responses to this need was the Public Law 94-142 (P.L. 94-142) which included descriptions of conditions in school children which constitute diagnosis for

handicapping disorders. A majority of psychologists polled were not satisfied with the use of P.L. 94-142, and preferred to use the guidelines for diagnosis offered by the revised third edition of the Diagnostic and Statistical Manual of Mental Disorders Revised (DSM-III-R) (Tharinger & Strocchia-Rivera, 1984).

This approach also appears to be a promising strategy for the study of subtypes of the learning disabled population. As the following section will demonstrate, many studies have reflected the validity of this method for diagnosing mental health disorders. In addition, some limited research has also been done with the diagnosis of subtypes of the LD population. This study may add further justification for the use of the DSM-III-R in diagnosing LD subtypes.

The Use of the Diagnostic and Statistical Manual of Mental Disorders in Subtyping

The first version of the DSM appeared in 1952. The 1968 version was made compatible with the eighth revision of the International Classification of Diseases (ICD-8)(Spitzer, 1987). Subsequently, there was another revision in 1974, and the current DSM-III-R was published in 1987. An attractive feature of this system is that it is constantly being reevaluated and it is planned to make this an ongoing process which incorporates improvements into each version.

A current study (Glick, Quinlan & Zigler, 1987) explored a schizophrenic population in terms of the degree to which the diagnostic criteria of the DSM-II compared to that of the DSM-III. Specifically, they were contrasted on measures of "premorbid competence" and "role orientation," variables frequently used to indicate developmental levels of schizophrenia (Zigler & Glick, 1986). In addition to the use of the DSM criteria, the cases were also measured against criteria based on the New Haven Schizophrenia Index (NHSI). The results of this research reflected agreement between the NHSI and DSM-II in 85% of the cases, and when compared with the criteria of the DSM-III, there was 95% agreement. Thus, this consistent concurrence of other measures in assessing a mental health disorder adds additional support to the validity of the DSM-III.

Further affirmation of the use of the DSM-III resulted from research which focused primarily on sex discrimination in diagnosing depression (DeVault & Dambrot, 1983). Copies of a case history diagnosed by the DSM-III as Major Depression were sent to psychiatrists and psychologists listed in directories of the American Psychological Association. Ostensibly, they were exploring the reliability of the use of the DSM-III diagnostic categories. However, half of the questionnaires disguised the actual history of a male depressed patient to read as though it described a female. Results indicated that the sex of the

case described had no significant effect upon the diagnosis made by the clinician. Another finding was that 77% of the clinicians agreed with the DSM-III on the major diagnosis of "Affective Disorder." It should be noted, however, that the agreement was divided on subcategories of the diagnosis.

A study by Oliver & Simmons (1984) compared the DSM-III diagnosis of depression with the Beck Depression Inventory, a pencil and paper self-report measure. Approximately 300 people were randomly selected for interviews which were described to the subjects as evaluations of their "physical health and psychological adjustment." Between the two measures of the diagnosis of depression, there was an 84.6% rate of agreement on those found as "depressed," and an 86.4% agreement on those of the sample who were classified as "non-depressed." However, on cases which were more within an intermediate range, the diagnoses did not always coincide.

Of 840 Lebanese children who were reported to have emotional problems, 273 were diagnosed as having posttraumatic stress disorder (PTSD) according to the criteria described by the DSM-III (Saigh, 1989). In this study, other measures such as the Revised Children's Manifest Anxiety Scale, the Depression Inventory and the Conners Teacher Rating Scale were applied to 231 children who were judged by counselors as meeting the minimum criteria for the PTSD diagnosis. In general, these measures

were able to make a distinction between the groups of children diagnosed as PTSD, and the non-clinical control group. Thus, overall, the findings of this research support the validity of a specific diagnostic classification of the DSM-III, "posttraumatic stress disorder."

In recognition of the widespread use of the DSM, and its appropriateness as a diagnostic tool, Ozawa (1978) operationalized the category of Attention Deficit Disorder (ADD) by his creation of the Ozawa Behavioral Rating Scale for Attention Deficit Disorders (1978). Subsequent research (Ozawa & Michael, 1983) attempted to support the validity of the Attention Deficit Disorder Without Hyperactivity as described in the DSM III. In this research, 120 elementary school children were divided into three groups, 40 who were moderately impaired in learning and placed in Resource room programs, 40 who were more severely impaired and were placed in self-contained classes, and 40 who were "so-called" normal children.

The Ozawa Behavioral Rating Scale was applied to the three groups focusing on two main factors, "distractibility," and "impulsivity." Statistical tests reflected significant differences among the three groups; the means of the Normal group was significantly lower than the Resource Room group in terms of general attention deficit. Significantly lower attention deficits were also reflected in the "normal" group when compared to the more

severely impaired group. Thus in terms of the measures of distractibility and impulsivity, the Ozawa Behavior rating scale appears to be a reliable measure of the DSM-III criteria for the diagnosis of Attention Deficit Disorder without Hyperactivity.

Any consideration of the use of the DSM or its subsequent revisions, must also weigh its limitations. One of the main objections voiced by social workers (Kutchins & Kirk, 1987) is the emphasis that the DSM-III places on the importance of an evaluation of the physical condition of the client when the DSM is used. They cite a hypothetical case of a girl who was a client of a social worker and the dire consequences which might result if a physical examination is overlooked in the assessment of a condition. However, their concern appears to be more focused on the legal liability of the social worker involved, rather than on the fact that the client died of a brain tumor. In a sense, this is a warning to all mental health workers to always assess the possibility of a physical problem whenever any dysfunctional behavior is reported. Thus, what appears to be a criticism of the DSM-III, is really a positive feature of the diagnostic criteria.

A survey of psychologists' attitudes toward the DSM-III suggests that more than half of those polled favor the use of a diagnostic system (Smith & Kraft, 1983). Many members of Division 39 of the APA who are psychoanalytically

oriented did not approve of the DSM-III as a diagnostic option. However, behaviorists and cognitive behaviorists were significantly more favorable to this system. Noteworthy, however, is the fact that despite the desire of many for a better system of classification, there is widespread reliance on the DSM, possibly because it is the most desirable system that has emerged so far.

An article by Cantwell (1986) provides a valuable review of some of the issues involved in making a diagnosis. The first question that arises is: do this child's symptoms match the criteria suggested by a particular disorder? In the case of "Attention Deficit Disorder," upon which this article is focused, the author suggests that the use of the DSM-III or DSM-III-R adds specificity to the diagnosis. However, the author also acknowledges an important limitation of this approach; that the criteria are not empirically defined. Schacht and Nathan (1977) concur in this criticism of the DSM-III. They also suggest that an additional factor limits the use of the DSM-III; there is no definition of "psychological health" against which to measure any degree of deviance. While this issue still remains as a challenge to be explored by mental health professionals, the criticism is not as valid when applied to the area of academic achievement. Although still an arbitrary measure, achieving "at grade level" in an academic skill is commonly accepted as a measure of "health" in the

area of learning ability. Thus, when the DSM-III-R is used as a diagnostic tool in defining a learning disability as opposed to an emotional disorder, its parameters can more readily be defined. Despite some limitations, the DSM-III-R has rapidly been accepted by most mental health workers as an appropriate diagnostic system for emotional disorders as noted in the studies cited (DeVault & Dambrot, 1983; Glick, Quinlan & Zigler, 1987; Oliver & Simmons, 1984; Ozawa, 1983; Saigh, 1989; Zigler & Glick, 1986). The use of the DSM-III-R may be an even more effective tool when applied to the diagnosis of subtypes of the learning disabled.

In this study, the LD population has already been diagnosed by the school system according to results on specified measures. The children have been categorized as "learning disabled," however, the DSM-III-R provides criteria for subtypes of this population. The school records add more specific information to the guidelines outlined by the DSM-III-R. Thus, its use appears to be a reasonable and promising approach to have pursued in this research.

Social Adjustment Difficulties of Children and Adolescents

The learning disabled child has multiple difficulties in school. Compounding the academic deficits are the social adjustment problems which are prevalent in this population (Bender, 1987; Bryan, 1974; Milich & Landau, 1984; Silverman

& Zigmond, 1983; Wilshesky & Reynolds, 1986). These problems include deficits which range from a low self-concept and withdrawn behavior, to physical aggression, disruptive, off-task behaviors and negative verbalizations (Klein & Young, 1979). It has been documented in the literature and confirmed by teachers, mothers, and peers (Pelham & Milich, 1984) that such children have serious difficulties in establishing appropriate peer relationships.

However, since some members of this group are able to overcome their handicaps and adjust well socially (Wiener, 1987), the exploration of the differences which define the degree of social adjustment appears justified.

Some Conflicting Evidence

As noted in the previous sections, a large body of current research is concerned with the concept of heterogeneous patterns of deficits, or subtyping of the learning disabled. However, when the literature is directed toward the understanding of the social adjustment of the learning disabled, this aspect of their functioning is treated as though they were one homogeneous group (Bender, 1987; Bryan, 1974; Milich & Landau, 1984; Silverman & Zigmond, 1983; Wilshesky & Reynolds, 1986). It is the purpose of this study to explore two groups found within the learning disabled population, the children with a DRD and the children with an ADDH, in an effort determine the degree of difficulty in forming appropriate social relationships

with peers. Thus, this approach will differ from much of the research of social adjustment which views the learning disabled as a homogeneous group. As a consequence of conceptualizing the learning disabled as a homogeneous population, much conflicting evidence results which serves to add to the confusion. La Greca (1987) supports this view, and encourages a separation in order to avoid the confounding of research results in this area particularly in regard to confounding by the ADDH factor. A review of current research will be examined in this section.

In a study which explored self-esteem among boys with and without learning disabilities (Bingham, 1980), it was found that there was a significant difference between the learning disabled and non-disabled group at the pre-adolescent level. However, at the adolescent level, despite a discrepancy between the two groups, the difference was not found to be statistically significant.

Research along similar lines (Patten, 1983) which investigated the relationship of self-esteem and achievement among learning disabled, supports such a relationship; that as achievement rises, so does self-concept, and as academic achievement falls, so does one's self-concept.

The work of Silverman and Zigmond (1983) yielded contradictory results to those of Patten's study. They found that learning disabled adolescents did <u>not</u> have lowered self-concepts. They performed a second study in

order to see if their results would be replicated, and again, they could find no empirical support for the view that learning disabled adolescents hold themselves in low esteem.

From another perspective, Goldman (1987) considers the social implications of language disorders. The possibility of whether some aspect of oral expression is at the root of children's difficulties in social interactions is explored and affirmed. By citing research studies, the author confirms the fact that learning disabled adolescents receive fewer invitations from their peers, are less involved in extra curricular activities, and are less successful in becoming members of subgroups or "cliques" which are part of the social mores of children, particularly of adolescents.

Further support of this view is offered by Gresham and Reschly (1986) whose study encompassed a slightly broader view of the relationship between positive social skills, such as greeting others, conversing, listening to others, smiling and laughing, and complementing others, and how these skills affect peer acceptance. Their comparison of mainstreamed learning disabled and non-handicapped children resulted in the conclusion that learning disabled children were deficient in four areas of social skills; accepting authority, helping others, expressing feelings, and having a positive self-attitude.

Despite the limitations which linguistic disorders

impose on the learning disabled, Bergman (1987) offers evidence that that portion of learning disabled who have adequate language abilities, but who have deficits in visual-spatial functions, are at greater risk for impaired interpersonal relationships. The group known as Type I, according to Bergman (1987), who are deficient in linguistic skills but who retain their competencies in visual-spatial analysis, organization and synthesis, seem to be able to compensate by their ability to analyze novel situations, to consider different strategical options, and to benefit from informational feedback. Thus, they can grasp the sequences involved in social situations more readily, and are not subject to the social difficulties encountered by Type II, who although their linguistic capacities are intact, are not socially competent as a consequence of their inability to comprehend social cues or others' emotional reactions and intentions. This view, then, is inconsistent with the findings of Goldman since it de-emphasizes the importance of linguistic competency in forming peer relationships.

Researchers of the etiology of social difficulties in children not only differ from each other in their findings, but at times, differ with themselves. For example, in 1984 Milich and Landau conducted a study meant to clarify contradictory findings centered around the social status of children. Previous research in this area resulted in equivocal findings; some studies found that aggressive

youngsters do experience peer problems, others found that this group was able to achieve some degree of popularity. They explained this result in two ways. First, that previous research did not distinguish between "popularity" and "rejection" measures. This is an important factor since aggressiveness is nearly always associated with high rejection by peers, but when popularity and aggression are examined, the relationship is not always negative. The author's explanation is that there are different types of aggressive children, which they label as either Aggressive or Aggressive/Withdrawn. They concluded that the nature of their aggressiveness was related to their peer status; that is, the group labeled "Aggressive/Withdrawn" was rated by their peers on a sociogram as both highly rejected and unpopular, but those called "aggressive," although rejected by some, attained the highest popularity scores from others.

In 1987, Landau, Milich and McFarland attacked the problem of explaining poor social relationships from a different orientation. They related IQ patterns on the WISC-R to social functioning. Two sociometric scales were used, one for peers, one for teachers. One of three orthogonal factors considered was aggression. Three groups were measured: those whose Verbal score was higher than the Performance score, those whose Performance score was higher than the Verbal, and those whose Verbal and Performance scores were equal. Results reflected that the V = P group

was significantly more likely to be rejected, as they were most often chosen by peers as those "whom they don't like." They were also perceived as most aggressive. The mean aggression Z-score for this group was three times greater than means for the other two LD groups. They were not only found as rejected by peers, but also as unpopular. This finding is somewhat contradictory to the previous findings of these researchers, inasmuch as there was no division here of Aggressive and Aggressive/Withdrawn. They were considered as one group. The researchers concluded that the aggression perceived by peers in the V = P group implies both unpopularity and rejection, but "social withdrawal," as exemplified by the P>V group, only implies unpopularity. In the previous research, the Aggressive/Withdrawn group was both highly rejected and unpopular.

Another area of disagreement among researchers is whether labeling and placement in special education classes has a deleterious effect upon peer relationships which outweighs the positive academic benefits which may accrue as a result of such placement.

A case study (Knoff, 1983) describes a 7th grader who was not diagnosed as learning disabled until he reached the 7th grade. Until this time, although performing quite poorly in the basic skills, he was functioning well socially, was accepted by his peers, and perceived as a good-looking young man with a good sense of humor. When the

student was placed in the special education program which included a resource room for reading, math and academic reinforcement, his personality and ability to function socially changed radically. He became more overtly aggressive and verbally abusive toward both teachers and peers; in addition, he was less able to tolerate frustration, was more impulsive, and experienced "periodic" rages. The author concludes that it was the change in placement which elicited this change since the student did not evidence such maladaptive behavior outside of school hours.

Contrary to the findings of Knoff's research (1983), a study by Sabornie and Kauffman (1986) concluded that although as a group the sociometric ratings of learning disabled students were lower than the nonhandicapped, the difference was not significant. Students who were combined in a physical education class were administered sociometric tests which reflected these findings. Thus, the authors concluded that it is possible for at least some learning disabled students to be socially accepted by the mainstream.

In a study (Bender, Wyne, Stuck & Bailey, 1984) which compared the peer status of learning disabled, educable mentally handicapped, and low achieving children with normally achieving students, the results reflected no differences in terms of frequency of misbehavior among any of the groups. This result was obtained by ratings by their

peers on a sociometric questionnaire. Although the findings confirmed that the LD and EMH students had significantly lower peer status than the normally achieving, ratings by their peers did not make any distinction between LD and EMH children. Nor were there any significant differences found between the low achieving and the two mildly handicapped groups. Thus, the authors concluded that factors aside from the handicapping label contributed to lower peer acceptance. The fact that low achieving children were perceived as similar to the handicapped group, led the authors to conclude that peer rejection of mainstreamed mildly handicapped children was more related to their cognitive incompetence than to inappropriate behavior, in opposition to McKinney's findings (1984).

Summary

This study combines two bodies of literature. The first is related to the definition and etiology of learning disabilities including the DRD and ADDH subgroups. The second deals with the social adjustment of this population.

Originally, a learning disability was thought to be caused by a single deficit. Reviews of the literature cited reflect the conclusion that there are many different patterns and combinations of attributes and deficits among this population. These patterns, referred to as "subtypes," have been explored by both clinical-inferential and statistical methods.

Based on the literature and the diagnostic classifications of the DSM-III-R, this study selected two subtypes, the DRD and the ADDH, and then attempted to determine which of these disorders was associated to a greater degree with the children's social adjustment difficulties.

Despite the consensus in the literature that there are subtypes of the learning disabled, this factor has generally been ignored in studies dealing with the social adjustment of this population. For this criterion variable, the literature shows that some LD students appear to be well adjusted, while others are not. The view is presented here that the reason for such conflicting results is that the learning disabled have, in most cases, been treated as one homogeneous group instead of breaking down this population into their behavioral or academic patterns of functioning. It is hypothesized that with such a breakdown, more can be learned about the causes of poor peer relationships among the learning disabled.

Statement of the Problem

One objective of this study was to determine which factors are associated to a greater degree with peer rejection, the academic deficit exhibited by the child who is reading below grade level, or the maladaptive behavior characteristic of a child who is hyperactive and has difficulty in focusing and sustaining attention on a task.

The intent of this research was to focus on the social relationships between mainstreamed and LD children, thus the sample was limited to the LD students who were deficient in reading, and were placed in a resource room setting since these children spend part of their day in regular classrooms, and another part in remedial classes. More severely impaired children, such as those used in the Satz and Morris (1981) study are generally in self-contained classrooms, and thus would have little contact with the mainstreamed population. Many of the equivocal and conflicting findings in the literature concerned with the social adjustment of learning disabled children may be a consequence of conceptualizing them as a homogeneous rather than a heterogeneous group. Although other factors such as I.Q. and socio-economic status may contribute to social adjustment, this study was limited to an exploration of the peer relationships of: 1. children with a reading deficit 2. hyperactive children with an attention deficit problem.

In accordance with this framework, the following questions were raised:

1. Is there a relationship between the children's reading deficiencies, as evidenced by a DRD, and peer adjustment?

2. Is there a relationship between maladaptive behavior, as evidenced by an ADDH, and peer adjustment?

3. Is there a difference in the degree to which these two disorders are associated with peer relationships? Is the difference significant?

4. Does the presence of both a reading deficit and behavioral problems in a child present a greater handicap in social relations than either of these difficulties by itself?

5. Is there confirmation of higher peer status for the children in the mainstreamed population free of any disorders than for children with at least one disorder?

CHAPTER II

METHOD

This chapter includes a description of the instruments, subjects, and procedures which were employed in this research.

Instruments

The instruments completed by the children in this study were the Peer Acceptance Scale (Bruininks, Rynders & Gross, 1974), and the Structured Peer Assessment (1986). A checklist containing the criteria of behaviors that constitute an Attention-deficit Hyperactivity Disorder according to the DSM-III-R (Spitzer, 1987), and the Conners Teachers' Rating Scale (Conners, 1969) were completed by the classroom teachers involved.

Diagnostic Measures

DSM Questionnaire

Designation as an ADDH was based on the guidelines provided by the DSM-III-R (314.01) for the diagnostic criteria of this disorder. It specifies that the onset of this disturbance will have occurred before the age of seven, and will have continued for the duration of at least six months. In order to qualify as having an ADDH, the child must evidence at least 8 of the 14 behaviors listed below:

(1) Often fidgets with hands or feet or squirms in seat (in adolescents, may be limited to subjective feelings

of restlessness).

(2) Has difficulty remaining seated when required to do so.

(3) Is easily distracted by extraneous stimuli.

(4) Has difficulty awaiting turn in games or group situations.

(5) Often blurts out answers to questions before they have been completed.

(6) Has difficulty following through on instructions from others (not due to oppositional behavior or failure of comprehension), e.g., fails to finish chores.

(7) Has difficulty sustaining attention in tasks or play activities.

(8) Often shifts from one uncompleted activity to another.

(9) Has difficulty playing quietly.

(10) Often talks excessively.

(11) Often interrupts or intrudes on others, e.g., butts into other children's games.

(12) Often does not seem to listen to what is being said to him or her.

(13) Often loses things necessary for tasks or activities at school or at home (e.g., toys, pencils, books, assignments).

(14) Often engages in physically dangerous activities without considering possible consequences (not for the

purpose of thrill-seeking) e.g., runs into the street without looking.

The disorder is considered mild if the number of symptoms does not exceed much beyond the minimum of eight which is required for diagnosis of the disorder.

A checklist was created of these behaviors, and the teachers were asked to complete one for each child in the class (See Appendix A).

Conners Teachers' Rating Scale

To add validity to the ADDH classification according to DSM-III-R criteria, the teachers also completed the Conners Teachers Rating Scale (Conners, 1969) for each child in the classroom. The reliability coefficient for this instrument ranges from .71 to .91. It is a questionnaire which describes varied types of behaviors. The two factors which were scored were those for Inattention (Factor II), and Hyperactivity (Factor IV). Each item is scored on a scale ranging from 0 to 3 as follows:

"Not at all" = 0

"Just a little" = 1

"Pretty much" = 2

"Very much" = 3

Responses to the items are added, then divided by the number of items relevant to the factor (i.e. 8 for Factor IV) to find the mean. Scores above 1.5 were considered as significant.

Dependent Measures

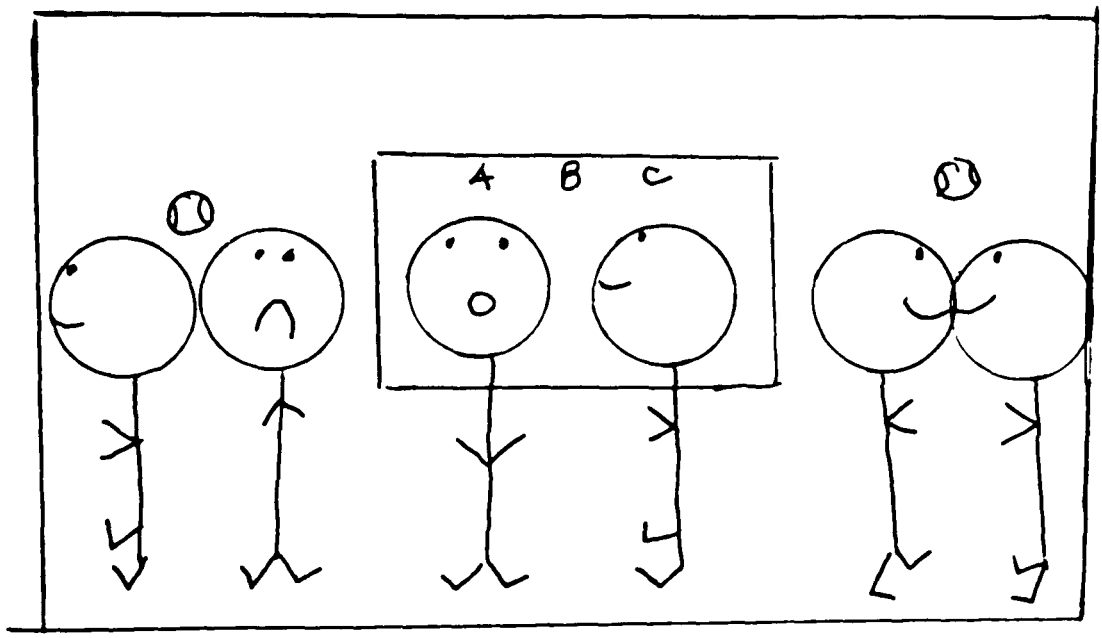
Peer Acceptance Scale

The objective of the Peer Acceptance Scale (PAS) (Bruininks, Rynders & Gross, 1974) is to assess the popularity of children in a group setting. It is a modified version of the Ohio Social Acceptance Scale which has a reliability coefficient between .72 and .77. The correlation between the PAS and Moreno's sociometric technique ranged from .78 to .96, and the correlation with "Guess Who," another sociometric instrument, ranged from .66 to .76 (Lorber, 1970).

The method used with the PAS is a forced choice scale in which children rate their peers in terms of their desire to be "friends." The answer sheet consists of an alphabetized list of all the members of the class. The students were told to place one of three numbers in front of each name on the list.

At the top of the page, a drawing is placed consisting of three choices. The choice of "friend" is rated as "3", the choice of "all right" is worth a "2", and the choice "wouldn't like" is equal to a "1". The student then placed the numerical value of his selection next to the name. The

response "friend" depicts two children playing with a ball; "all right" is illustrated by two children working at a blackboard in a parallel fashion. "Wouldn't like" is a picture of two children with their backs toward each other. (See Figure 1). The higher the total score of an individual, the greater the degree of social acceptance by his/her peers.



Wouldn't like all right friend

Figure 1. Response Format for Peer Acceptance Scale

The scores were obtained by totaling the ratings of each participant, and then computing a mean and a standard deviation for each of the groups.

The Structured Peer Assessment

To add validity to the findings on the PAS, an additional sociogram, the Structured Peer Assessment (Gresham & Reschly, 1986) was administered to the children. It correlates .85 with the Play with Rating Scale (Oden & Asher, 1977), and .83 with the Work with Rating Scale (Singleton & Asher, 1977) which are evaluations of children by parents and teachers. The SPA consists of a 13 item structured peer rating scale. The child was required to rate his or her peers according to the frequency with which he/she exhibits the 13 behaviors listed. A rating of 3 equals "a lot," 2 equals "sometimes," 1 reflects "never," and 0 means that the person is unknown to the rater. The 13 statements were written on an experience chart, read aloud, and meanings interpreted where necessary. The behaviors referred to are as follows:

1. Says nice things to others.
2. Says "please" and "thank you."
3. Smiles at others.
4. Says "hello" to others.
5. Listens to others.
6. Helps others.
7. Shares with others.

8. Says "excuse me."
9. Waits turn when playing.
10. Participates in school activities.
11. Fun to talk to.
12. Liked by others.
13. Follows rules in games and class.

The score that a child achieved reflected the total that he received from his peers in the classroom. The higher the score of a student, the higher his/her social acceptance. Conversely, a low score was indicative of rejection by his/her peers. Previous research cited (Gresham & Reschly, 1986) demonstrated that these 13 behaviors were able to successfully predict peer acceptance and teacher ratings of social skills.

Subjects

A total of 124 students were taken from a pool of 13 classes in five schools for this study. The classes included 4 third grades, 5 fourth grades and 4 fifth grades from Public Schools 71, 69, 107, 182 and 36 in New York City. They were classified into four groups with 31 in each cell: those with a DRD, those with an ADDH, those with <u>both</u> of these disorders, and those <u>free</u> of either disorder.

The sample size of 31 subjects in each category was suggested by a table in Cohen (1988) which proposed setting the effect size index (q), at .30 which is considered a "medium effect size." According to this source, when the

"u" (the number of groups minus 1) is equal to 3, the sample size in each cell should be 31.

The five schools were located in a deprived area of the Bronx; the socio-economic level and the ethnic character of the population were very similar; mostly Hispanic and black, and on a low socio-economic level.

Subjects Classified as DRD

The criteria for the diagnosis of a Developmental Reading Disorder according to the DSM-III-R is as follows:

A. Reading achievement skills, as measured by a standardized, individually administered test, are markedly below the expected level, given the person's schooling and intellectual capacity (as determined by an individually administered IQ test).

B. The disturbance in reading significantly interferes with academic achievement activities of daily living requiring reading achievement.

C. Not due to a defect in visual or hearing acuity or a neurologic disorder.

The guidelines defined by the New York City Board of Education (1985) for classification as learning disabled, and eligible for Resource Room help, are virtually the same as the criteria defined by the DSM-III-R: the student must demonstrate significant academic difficulties in reading skills, communication skills, and/or mathematic skills; these difficulties are not primarily due to cultural,

linguistic or ethnic factors. The guide also adds that "student's physical needs (vision, hearing, health and motor) are either normal or can be met with related services." In essence both the criteria set by the DSM-III-R, and the New York City Board of Education are closely related to the guidelines provided by Public Law 94-142 previously cited.

All three definitions, the DSM, the New York City Board of Education and P.L. 94-142, are in agreement that: the student is experiencing academic difficulties; achievement scores are discrepant with potential; vision and hearing are not defective (thus, not the basis of the academic difficulty).

The Commissioner of Education in New York State provides a description of the learning disabled which also coincides with the above guidelines (1984). However, this document also states that a discrepancy of 50% or more between potential and achievement, determined on an individual basis, will constitute a learning disability. This is approximately the "rule of thumb" which applies in making placements in New York City by the Committee on Special Education. In practice, children who are given resource room assistance are generally at least a year below the expected grade level in any of the basic skills.

In this research, students classified as meeting the criteria for a DRD were selected from a pool of children who

attended a Resource Room for one or two periods a day in order to receive extra tutorial help with their academic deficiencies. They were tested by the School Based Support Team (SBST) in their district, and were found to be at least of average intelligence according to WISC-R tests. In addition, the educational evaluator of the SBST individually administered a standardized reading test in order to determine the extent of the deficit. The criterion for this study followed that used in research exploring characteristics of pupils who were identified as LD (Shepard, Smith & Vojir, 1983). For grade 3, children's reading scores were at least one year below grade level. For grades 4 and 5, children's reading scores were at least 1.5 years below their grade level.

Two independent raters (undergraduate education students at Iona College in New Rochelle) examined the records in order to determine classifications. For the DRD designation, the records of special education students in the five selected schools were inspected. The reading scores, as recorded by the educational evaluator, were at least one year below grade level for third graders and 1-1/2 years below grade level for 4th and 5th graders. Medical records were also examined. Hearing had to be noted as "normal," and vision as either 20/20 or 20/30 (according to Board of Education definition as "within normal range").

In addition, teachers were required to respond to a

questionnaire which listed the resource room students in their classes. They were asked to respond yes or no for each child as to whether the "deficient reading skill was a handicap to appropriate progress in related subjects such as language arts, social studies and science." There was unanimous agreement that the reading deficit constituted a handicap.

Subjects Classified as DRD and ADDH

The children classified as DRD attended a resource room for one or two periods, but were mainstreamed for the balance of the day. This composition of classes was necessary in order to focus on the degree to which a child with a DRD is accepted by his/her mainstream peers. About half of the pool of children with a DRD also had an ADDH. Thus, the classification of the third group was determined (both a DRD and an ADDH).

Criteria for classification as an ADDH required teachers to confirm that students exhibited at least 8 of the 14 behaviors defined by the DSM-III-R for a period of at least six months. This was accomplished by creating a checklist of these behaviors which was completed by the teachers for each child in the classroom (both the mainstreamed and the Resource Room children). In addition, as added confirmation, this study included the use of the Conners Teachers Rating Scale (Conners, 1969).

For the ADDH classification, scores of the DSM

behavioral survey were tallied (at least 8 behaviors evident). In addition, two factors of the Conners Teachers' Rating Scale (Conners, 1969), Inattention and Hyperactivity, were scored as confirmation of the classification.

Mainstream Subjects Classified as ADDH

The children who were classified as having an ADDH according to the criteria noted above, but did not attend a resource room, were included in this category.

Mainstream Subjects Free of Either Disorder

This group was comprised of that portion of the mainstream group which did not attend the resource room and did not qualify as having an ADDH; thus, was presumed to be free of either the DRD or the ADDH.

Procedures

The Research Division of the New York City Public Schools reviewed the dissertation. The school district required that the parents and teachers be given a description and explanation of the study. The parents were first contacted and asked for permission to have their children participate in the study (see Appendix B and C). After receiving permission from the parents of the children targeted for the study, the records were examined as noted above then lists were compiled of the children according to classes, and of those in the mainstreamed group, and also of those attending a Resource Room.

As per school district instruction, at appropriate

times, meetings with the teachers were held explaining the study to them, and requesting their cooperation in completing the questionnaires which were used in the study (see Appendix A for Checklist of Classroom Behaviors) and also the Conners Teachers' Rating Scale. The teachers were asked to observe the children over a six month period, as directed by the DSM-III-R in the determination of a diagnosis of an ADDH disorder. This meeting with the teachers included a discussion of the etiology of this disorder, and the difficulty the children have in controlling their behavior. The purpose of sharing such information was to sensitize them to the problems of children who were so afflicted, and hopefully resulted in greater tolerance and sympathy for such children.

However, these meetings may have affected the way in which the teachers behaved toward the students. As such, the teachers may have alerted the social relationships among the peers.

At the end of six months, two sociograms were administered to the children in the classes selected, in order to assess their peer relationships. The tests were the Peer Acceptance Scale (Bruininks, Rynder & Gross, 1974), and the Structured Peer Assessment (Gresham & Reschly, 1986) which are described in the previous section. The children involved were told that they had been asked to participate in order to help children everywhere who have learning

problems or other kinds of difficulties in school. They were also informed that all their responses would be held in strict confidence. The sociograms were administered to whole classes, except for the few children who were excused because they were not granted permission to participate.

For the Peer Acceptance Scale, each child was given a sheet of paper with the names of all the children in the classroom. There were three figures at the top of the page, a duplicate of what was drawn on the board. As previously noted, the child was told to supply a number next to each name (except his own), according to his feeling about that person.

For the Structured Peer Assessment, the 13 behaviors were written on an experience chart placed on the blackboard. The sentences were read aloud and meanings explained and interpreted as necessary. The children were then handed a grid with the names of their classmates and with places for them to supply a number for the frequency of such behaviors.

The fourth and fifth graders were usually able to complete the forms in one session of about an hour. However, the third graders generally required two shorter sessions since their ability to sustain attention on the task was more limited.

Academic records were examined by two independent raters to determine the degree to which the children were

reading below grade level, and medical records were also reviewed in order to determine that the children's academic deficiencies were not the result of any organic visual or hearing deficiency. In addition, teachers were queried as to whether each student's reading deficit significantly interfered with academic achievement activities of daily living requiring reading achievement.

At the end of the six-month period, the teachers had completed both the Conners and the DSM questionnaires, and the children had completed the sociograms. After meeting the criteria previously noted, the children were then classified according to groups; that is, Group A consisted of children with both a DRD and an ADDH, Group B included those with only a DRD, Group C was comprised of those with an ADDH only, and Group D had neither disorder.

Statistical Measures

Separate 2x2 factorial ANOVAS for the two dependent measures were performed using two levels (present, absent) of the two independent variables, ADDH and DRD. This design yielded four cell groups:

Group A Resource Room children who were classified as DRD according to the DSM-III-R guidelines, and also showed evidence of an ADDH.

Group B Resource Room children who had a DRD but did not reflect behaviors characteristic of an

ADDH disorder.

Group C Mainstream children who had been determined as having an ADDH disorder.

Group D Mainstream children who did not show evidence of an ADDH disorder or a DRD.

The dependent variables were the scores achieved on the two measures used: the Peer Acceptance Scale, and the Structured Peer Assessment. Results of the PAS reflected the degree of popularity of the children. The second measure, the SPA, provided an additional evaluation of the degree of peer acceptance for children involved in the study. Since the null hypotheses were rejected (i.e. significant differences were found between those with an ADDH and those without, and also between those with a DRD, and those without), post hoc Scheffé procedures were performed.

CHAPTER III

RESULTS

The purpose of this study was to explore two relationships:

1) the relationship between DRD classification and peer rejection (or acceptance) and

2) the relationship between ADDH classification and peer rejection (or acceptance)

Classification of Groups

The 124 children involved in the study were divided into four groups: those who met the criteria for a Developmental Reading Disorder according to DSM criteria, those who were categorized as having an Attention Deficit Disorder with Hyperactivity (ADDH), those who had both disorders, and those who had neither of these disorders.

The subjects who had a DRD were all attending a resource room for at least one 45 minute period, from three to five days a week. Some of the children who were identified as having an ADDH, also had a DRD, and thus attended a resource room. The balance of the ADDH group were mainstreamed with those who had neither disorder.

Table 1 presents the means and standard deviations on Test 1 (Peer Acceptance Scale) and Test 2 (Structured Peer Assessment) for the four groups that were generated by the factorial design. As indicated on Table 1, the mean scores

Table 1

Mean Scores of Four Groups and Total Sample on the Peer Acceptance Scale (PAS) and the Structured Peer Assessmen (SPA)

Group		PAS	SPA
A	M	36.84	483.16
	SD	6.98	72.07
B	M	40.39	536.45
	SD	6.82	89.83
C	M	41.65	527.74
	SD	7.79	90.81
D	M	43.32	566.06
	SD	5.83	94.38
Total Sample	M	40.55	528.35
	SD	7.21	91.15

Note: Group A = DRD and ADDH

Group B = DRD Only

Group C = ADDH Only

Group D = Neither Disorder

Note: n = 31 for each group

of Group D (with neither disorder) are approximately one standard deviation higher on both instruments than the mean scores obtained by Group A (with both disorders). The mean scores of the two groups presenting one disorder, but not both, lie approximately midway between the two extremes, and not very far apart from each other.

ANOVAS of Disorders and Sociograms

In order to investigate the relationships between the two conditions (DRD and ADDH) and the peer assessment instruments, two factorial ANOVAS were performed.

The independent variables for both analyses were ADDH classification (present or absent) and DRD classification (present or absent). The dependent variables were the PAS (first ANOVA), and the SPA (second ANOVA).

Table 2 presents the results of the two ANOVAS. The null hypothesis for the two main effects were rejected, that is, whether or not a child is classified as DRD did appear to affect his scores on the Peer Acceptance Scale (PAS) ($F = 9.78$, $df = 1$, $p < .05$). Whether or not a child is classified as ADDH, also appears to affect his PAS scores ($F = 4.46$, $df = 1$, $p < .05$).

The results of the Structured Peer Assessment (SPA) were very much the same as the PAS; that is, again the null hypotheses were rejected. Whether or not a child is classified as DRD appears to affect his score on the SPA ($F = 5.61$, $p < .05$) as does his classification as ADDH ($F = 6.555$, $p < .05$).

Table 2

Results of 2 x 2 Factorial Anovas Examining the Effects of ADDH and DRD Classifications on the Peer Acceptance Scale (PAS) and the Structured Peer Assessment (SPA)

PAS	df	MS	F
Main Effects			
DRD	1	464.529.78*	
ADDH	1	211.654.46*	
Interaction			
DRD x ADDH	1	27.13.57	
Residual	120	47.48	

SPA	df	MS	F
Main Effects			
DRD	1	42661.295.61*	
ADDH	1	65045.168.55*	
Interaction			
DRD x ADDH	1	1736.26.23	
Residual	120	7604.16	

* $p < .05$

Table 3 presents the mean test scores of the groups compared in the two factorial ANOVAS. That is, in considering the "main effect" of the DRD variable, Groups A and B taken together (those with DRD), are compared with Groups C and D (those without DRD). For consideration of the "main effect" of the ADDH variable, Groups A and C taken together (those with ADDH) are compared with Groups B and D (those without ADDH).

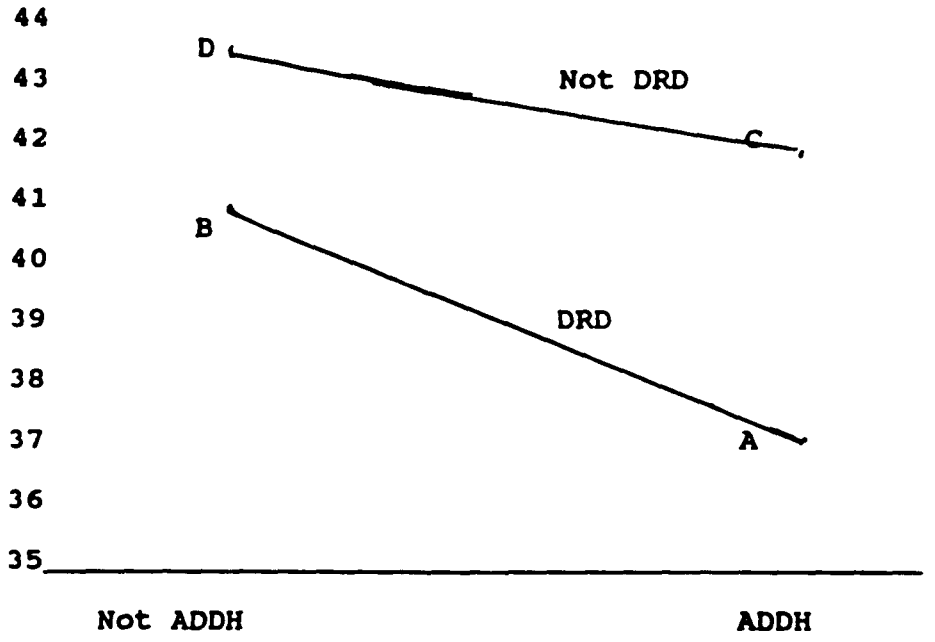
Table 3

Mean Scores of the Peer Acceptance Scale (PAS) and the Structured Peer Assessment (SPA) For Groups Compared in the Factorial Model

Group		PAS	SPA
DRD	M	38.61	509.81
	SD	7.07	85.11
No DRD	M	42.48	546.90
	SD	6.88	93.86
ADDH	M	39.24	505.45
	SD	7.72	84.35
No ADDH	M	41.85	551.26
	SD	6.46	92.59

Note: In each comparison, 1/2 the sample (i.e. 62 students presenting the condition), is compared with the other half (i.e., the 62 students not presenting the condition).

There was no interaction between the DRD or ADDH variables on the PAS or on the SPA. On both tests, the difference between those who are classified as ADDH and those who are not classified as ADDH is the same for those who are and are not classified as DRD, (the absence of interaction is evident in Figure 2 (for the PAS), and in Figure 3 (for the SPA). In both cases, the lines representing group differences are approximately parallel.



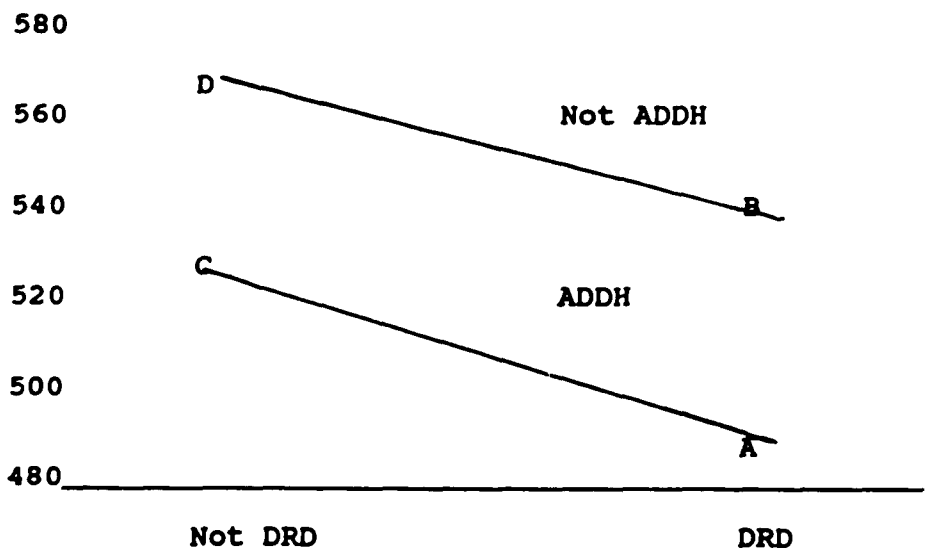
A = DRD and ADDH

B = DRD Only

C = ADDH Only

D = Neither Disorder

Figure 2. A Comparison of Mean Scores on the Peer Acceptance Scale Relative to Four Groups



A = DRD and ADDH

B = DRD Only

C = ADDH Only

D = Neither Disorder

Figure 3. A Comparison of Mean Scores on the Structured Peer Assessment Relative to Four Groups

Post Hoc Scheffé Procedures

One-way ANOVAS (directly comparing the four groups) were conducted so that post hoc Scheffé procedures might be applied.

Post hoc Scheffé procedures of the Test 1 ANOVA, indicated that the only means that were significantly different ($p<0.5$), were those of the group with both DRD and ADDH ($M = 36.84$), and the group without either DRD or ADDH ($M = 93.32$).

The same results were obtained in the second post hoc analysis of the Test 2 ANOVA. The only groups with means significantly different from one another were the one with both disorders ($M = 483.16$), and the group with neither disorder ($M = 566.06$).

CHAPTER IV

DISCUSSION

Purpose

The literature that deals with whether membership in a category designated as "learning disabled" places a child at a disadvantage in his social relationships contains much conflicting evidence (Bender, 1987; Bryan, 1974; Milich & Landau, 1985; Silverman & Zigmond, 1983; Wilshesky & Reynolds, 1986).

Much of the research of social adjustment approaches the learning disabled as though they were one homogeneous group. Yet, there is considerable agreement that there are very different patterns of performance within this group (Boder, 1973; Doehring & Hoshko, 1977; Fiske & Rourke, 1983; Mattis, 1981; Speece, 1987). This study has been undertaken as a preliminary attempt to explore the peer relationships of two of the subtypes of the learning disabled; namely, those with a DRD and those with an ADDH.

It was hypothesized that the exploration of the social relationships of these groups with their mainstreamed peers, would yield more unequivocal results than previous research demonstrated. It appears that the evidence has provided some tentative conclusions.

Findings Related to Hypotheses

In response to the specific questions raised in this study, the result of the ANOVAS performed reflect many significant relationships:

1. The presence or absence of a DRD is related to a student's acceptance by his/her peers as suggested by the scores on the PAS and SPA. (See Table 2). This finding tends to confirm the concept posed by Bender, Wyne, Stuck & Bailey (1984); that cognitive incompetence presents the greatest handicap to peer acceptance. One could hypothesize that an important index of classroom status is academic achievement; thus the children with a DRD are presumed to lose the respect and esteem of their peers and also suffer a loss of self-esteem. According to the research of Patten (1983), as achievement falls, so does one's self-concept. The poor self image which results from low academic achievement is possibly another contributing factor to rejection by one's peers.

Conversely, when a child is free of this disorder, the scores on the PAS and the SPA confirm that he is more highly regarded by his peers.

2. The presence or absence of an ADDH is also related to a student's acceptance level by his/her peers as demonstrated by the scores on the PAS and the SPA measures. (See Table 2).

Many kinds of behaviors displayed by children with an

ADDH can be detrimental to their social functioning. They are usually deficient in many of the social skills; they cannot wait their turn in playing games, they disrupt the classroom by leaving their seats and excessive talking; they frequently defy authority, demonstrate hostility and in general, display many types of maladaptive behavior. Both the Conners Scale (1969) and the questionnaire (See Appendix A) used to classify children with an ADDH reflect such inappropriate classroom behaviors. This finding tends to confirm the conclusion that Pelham and Milich (1984) reached; namely, that children who display such negative behaviors have serious problems in relating to their peers.

However, as reflected in Table 2, children free of the ADDH, are more highly accepted by their peers. Gresham and Reschly (1986) confirmed that the positive social skills, more typical of the non-handicapped population, such as greeting others, accepting authority, and being helpful to others, were assets in achieving greater peer acceptance.

3. There also appears to be confirmation of greater acceptance by one's peers of the mainstreamed population which is free of any disorders. The post-hoc Scheffé procedures confirmed that the most significant differences among the classifications were noted between the group which had both disorders (DRD plus ADDH), and the group which displayed <u>neither</u> of these disorders.

This result suggests that children who perform

academically within the range of their classmates, and whose behaviors and social skills are within the norm for their age groups, are generally the ones who are the most popular with their peers.

Future Research

Although this study yielded information regarding the association between the nature of the deficits in a learning disabled child and his/her failure to achieve status with one's peers, it also suggests many future projects for research on this topic.

More specifically, this study tends to confirm the low social status of LD children with a DRD, also those with an ADDH. This raises several questions. Would additional disorders result in more severe rejection? Would the substitution of deficits in the LD population (other than those used in this study) result in higher or lower peer status?

In order to explore such hypotheses, this study suggests that the continued use of the DSM-III-R would be an appropriate tool for such research. Although this study is among the first to use the DSM in classifying subtypes of the learning disabled, it serves well to create a common language and provide a valid consistent measure that can compare groups across studies in different locales. Other disorders such as: The Developmental Arithmetic Disorder (315.10), the Developmental Expressive Language Disorder

(315.31), or the Developmental Receptive Language Disorder (315.31), may be combined with appropriate sociograms in a research design similar to the one used in this study.

Such research may lead to more specificity in designating which disorders were associated with higher or lower peer status, and thus help to delineate the groups with the greatest needs in terms of improving peer relationships. Such groups may then be targeted for training in social skills such as waiting one's turn when playing games, helping classmates when possible, and limiting excessive moving about and talking in the classroom.

In accordance with a concept presented by Bender, Wyne, Stuck and Bailey (1984); namely, that children's rejection by their peers was related to their cognitive incompetence, a study focused on the relationship between academic achievement within the learning disabled group, and peer acceptance or rejection by the mainstream children, appears to be an appropriate direction for future research. This might be accomplished by the intervention of more intensive remedial reading measures with half of a DRD group, and a control group which did not receive the more intensive remediation. A sociogram might then be applied as pre and post measures of acceptance (or rejection).

Since some of the children with an ADDH were attending a Resource Room and some were mainstreamed, an exploration

of the differences between these two groups might yield some interesting information. In their research, Symes and Rappaport (1972) were able to accurately predict that children who were unable to focus and sustain concentration, characteristic of children with an ADDH, would later find difficulty in reading. This raises the question of how to account for the children who, although identified as having this disorder, did not appear to have a DRD and thus were not attending a Resource Room. A search for the reasons might involve explorations of the differences between the two groups based on I.Q., in help (or lack of help) from parents, or perhaps by attendance in a pre-school program.

Most studies of LD children have been conducted on primarily white, middle class, suburban or rural populations (McKinney, 1984; Ozawa, 1978; Satz & Morris, 1981; Wiener, 1987); a major difference in this research is the ethnic composition of the sample employed. This study targeted an inner-city, low socio-economic, mostly Black and Hispanic population. Making comparisons without a consideration of the ethnic and socio-economic level of the group researched may account for some of the discrepancies found in the literature. Further studies directed toward the peer relationships of LD children might explore other inner-city minority and low socio-economic populations.

There were some differences between the two sociograms used in this study. In the PAS, the children's responses

were limited to one of three choices about each of his peers, whether he though the child was "all right," "a friend," or he "didn't like" that person. The SPA, however, was a much more comprehensive tool, since it included 13 questions about each child, centering around many types of behaviors related to a variety of settings.

Despite such differences, the study yielded very similar findings from both sociograms, adding validity to the results.

In summary, for the population involved, this study suggests: that both a DRD and an ADDH are negatively related to a child's acceptance by his/her peers; and that the mainstreamed population free of any disorders is the group most highly accepted by its peers.

The objective of the search for the sources of difficulty that many LD children have in forming appropriate relationships, is to initiate educational procedures, and/or training that will improve the lives of this population.

Since the literature contains examples of LD children who are able to relate well to their peers (Wiener, 1987), it is incumbent upon social science researchers to try to more closely delineate the groups which need the most help and then apply appropriate measures where indicated.

APPENDICES

Appendix A

Checklist of Classroom Behaviors

Student's Name _____

Teacher's Name _____

Does student exhibit any of the following behaviors?

Please check one	Yes	No
(1) Often fidgets with hands or feet or squirms in seat.	☐	☐
(2) Has difficulty remaining seated when required to do so.	☐	☐
(3) Is easily distracted by extraneous stimuli.	☐	☐
(4) Has difficulty awaiting turn in games or group situations.	☐	☐
(5) Often blurts out answers to questions before they have been completed.	☐	☐
(6) Has difficulty following through on instructions from others (not due to oppositional behavior or failure of comprehension), e.g., fails to finish chores.	☐	☐
(7) Has difficulty sustaining attention in tasks or play activities.	☐	☐
(8) Often shifts from one uncompleted activity to another.	☐	☐
(9) Has difficulty playing quietly	☐	☐
(10) Often talks excessively.	☐	☐
(11) Often interrupts or intrudes on others, e.g., butts into other children's games.	☐	☐
(12) Often does not seem to listen to what is being said to him or her.	☐	☐

	Yes	No
(13) Often loses things necessary for tasks or activities at school or at home (e.g., toys, pencils, books, assignments).	☐	☐
(14) Often engages in physically dangerous activities without considering possible consequences (Not for the purpose of thrill-seeking) e.g. runs into the street without looking.	☐	☐

APPENDIX B

Parent Permission Letter

Dear Parent,

I am conducting a study for my doctoral dissertation which will increase our knowledge about children who have learning disabilities. You can be a part of this process.

In this study your child will be responding to some questions about his/her classmates. I will review their academic and medical records to determine their reading achievement and the presence of any hearing or visual defects.

In addition, teachers will be asked to complete a rating form for each student. Confidentiality of information will be maintained. All results will be reported as group data . No student will be identified.

Your signature is necessary to permit your child to participate in this project. You will be contributing toward helping children overcome some of their school problems. Thank you for your cooperation.

Sincerely,

----------Yes__

_____ _____

Signature - Date Student's Name Grade

No_____ _____

Signature - Date Student's Name Grade

Format for Parent Permission Letter

APPENDIX C

Parent Permission Letter (Spanish translation)

Querida Pariente,

En orden de nuestra comunidad a cerca ninos que tienen dificultades para aprender, es importante para conducir algunos ensenanza en esta escuela. Tu puede ser parte de este proceso.

Tu nino cogera algunos examenes. Tambien, es necessario a examinar los archivos medicos y academicos.

Su firma es requerida para tu nino _____ participar en este projecto; continuare nos ayudando con problemas en escuela. Gracias por tu cooperacion.

Sinceramente,

Anne Mittleman

Escuela Sicologista

Su Firma

_____

Dia

_____

Format for Parent Permission Letter
(Spanish translation)

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