

**THE EFFECT OF TEACHER REFERRAL ON  
THE FEMALE-MALE RATIO OF  
LEARNING DISABLED ELEMENTARY SCHOOL STUDENTS**

by

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## ABSTRACT

This study examines the way in which teacher referral practices affect the ratio of females to males among Learning Disabled (LD) students. The current ratio of females to males in the Learning Disabled population is approximately one female to three males. In this study teachers were requested to complete a checklist on students referred for psychoeducational testing and on matching non-referred students. The checklist contains six sub-scales, one on learning disability and the remaining five on various aspects of behaviour. The two principal behaviours with which this study is concerned are withdrawn behaviour and aggressive behaviour. According to present modes of sex-stereotyping, withdrawn behaviour tends to be associated more with females, while aggressive behaviour tends to be associated more with males. Research has indicated that teachers may have a lowered tolerance for aggressive behaviour over withdrawn behaviour. This study puts forward the notion that this factor may influence the male-female ratio of the LD population. Forty-two teachers participated in the study. Each teacher completed a questionnaire on a referred student and a non-referred student. Gender of the student did not have a significant effect on whether that student was referred for psychoeducational testing. The results of the interaction between gender and referral were not significant, indicating that teacher perception of students was independent of the interaction between these two factors. Results indicated that referred and non-referred students were perceived differently by teachers on most of the six sub-scales. Referred students were rated higher on the Aggression sub-scale than their non-referred peers. However, contrary to my hypothesis, referred students were also rated higher on the Anxiety sub-scale than non-referred students. Significant differences were also noted on many of the six sub-scales between the ratings of female and male students. These results suggest that caution needs to be exercised by teachers in determining if particular behaviours are indicative of a learning disability. Teachers should also be vigilant in associating sex-stereotypic behaviours with their students. These factors may be contributing to the present imbalance in the LD population.

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## CHAPTER ONE – Statement of the Problem

The preponderance of male over female students who have been diagnosed learning disabled (LD) has received scant attention to date. There appears to be tacit acceptance that males outnumber females in the diagnosed LD population. While the male-female ratio of LD students has been interpreted as being as wide as 9:1 (McCarthy & Paraskevopoulous, 1969), the more generally accepted ratio is 3:1 (Kirk & Elkins, 1975). In spite of this great discrepancy little concern has been expressed in the literature over the issue.

There are three implications of the present male-female ratio in the population of diagnosed LD students. The first implication is the possibility of an underidentification of females as LD, the second being a possibility of overidentification of males as LD. The third possibility is that the ratio reflects the true incidence of learning disabilities in the genders. While comment has been made on the effects of overidentification of male students, particularly in relation to the stigma attached to the label of LD, little attention has been focussed on the possible effects of the underidentification of the female population. The most serious effect of the underidentification of female LD students may be that LD girls, as a result of not being identified, pass through the school system without receiving the help necessary to cope with their learning disabilities.

The reasons forwarded for the male-female ratio of the identified LD population have been mainly biologically linked or based on the attachment of attributes to LD males and females as a result of their sex grouping. One of the most commonly suggested reasons for the imbalance has been the slower maturity rate of males. Another reason proffered has been the inferiority of males in verbal and reading skills. Because there has been a tendency in our schools to interpret a reading disability as a learning disability, many boys

displaying a reading disability may be diagnosed LD (Sartain, 1976). As both of these reasons for the higher number of diagnosed LD males are based on putative biological differences between males and females, it is little wonder that the ratio of diagnosed LD males to females has been so readily accepted in special education circles. If the reason is perceived as biological, an impasse has been reached on changing the male-female ratio. These biological differences have many disparate explanations—a metabolic explanation (Broverman, Klaiber, Kobayashi, & Vogel, 1968), and explanations based on brain lateralization theory (Buffery & Gray, 1972).

Much research on sex differences has taken place in recent years, particularly since the early seventies when feminists such as Greer (1971) claimed that there were no substantial inherited gender differences in ability. The public debate about sex differences which ensued spurred researchers to identify differences in many spheres of human behaviour and cognition. Maccoby and Jacklin (1974) have contributed a comprehensive reappraisal of sex differences. Their final analysis of sex differences is that females excel on verbal skills and males on spatial, a conclusion that reflects the earliest findings in the field of cognition. Maccoby and Jacklin have, however, discussed at length the differential socialization of girls and boys and its effects on future behaviour and performance. Great differences in the socialization process of girls and boys did not emerge in the survey of the data in this area. Nonetheless, it appeared that adults reacted to boys as if they found them more interesting. Boys were also seen to experience more pressure against engaging in sex-inappropriate behaviour. Even this level of differential treatment must surely exert some influence over the personality development of girls and boys.

An in-depth observation of children during school hours (Best, 1983), particularly of

the association between boys' reading achievement and their peer relationships, revealed the level of conformity among boys and girls to their gender roles. Best has taken the current preoccupation with the socialization process a step further. She has discussed what she has labelled the third curriculum, that is, the subculture that children create among themselves at school. While the second curriculum (i.e. sexual stereotyping in the curriculum) is being challenged, it may be that the third curriculum is a formidable force in the way that girls and boys develop.

In this study I examine the male-female ratio in the LD population from the point of view of referral practices. Much controversy surrounds the referral of students for assessment and their subsequent placement in LD services (Ysseldyke, Algozzine, & Epps, 1983). Classroom teachers are mainly responsible for referrals to the school psychologist (Nicholson, 1967), and Ysseldyke et al. have found that there is a high probability that a student referred by the classroom teacher will be assessed and placed in special education. If placement for LD services is so reliant on the judgement of the classroom teacher, factors which may be influential in guiding teacher referrals need to be examined. The factor in the referral process which I examine is that of teachers' perceptions of student classroom behaviour.

Student classroom behaviour has been found to have an impact on teachers' decisions to refer a student for assessment. Giesbrecht and Routh (1979) have reported that behavioural comments in students' folders had a pervasive effect on teacher judgement of young children. Ysseldyke and Algozzine (1981) found in simulated decision-making situations that written indications of behaviour problems at the time of referral may influence diagnostic outcomes. The decision-makers in the Ysseldyke and Algozzine study, some 224 school professionals, were influenced by the child's reported

characteristics in spite of average performance in the assessment. Robbins, Mercer, and Meyers (1967) have found that learning problems were not the primary reason for referring pupils to the central office at any level. Except for the primary grades, classroom behaviour was the reason for 40% of all referrals in grades four through six, 54% of all referrals in junior high school, and 61% of referrals made in senior high school.

While research has indicated that student behaviour is a factor which teachers are incorporating into their criteria for the referral of potential LD students, a further analysis of that behaviour is necessary in order to understand its possible relationship to the male-female ratio in the LD population. In general terms, two of the behaviours which teachers tend to view in a serious light are withdrawn and aggressive behaviours. Apparently, teachers perceive aggressive behaviour to be more cause for concern than withdrawn behaviour (Keogh, Tchir, & Windeguth-Behn, 1974). Algozzine (1976) has reported in his study, using the Disturbing Behaviour Checklist as the dependent measure, that socially defiant behaviour was interpreted as being more disturbing than other dimensions of behaviour. In the Robbins, Mercer, and Meyers (1967) study results indicated that while multiple reasons for referral were given, the most frequent combination was acting-out behaviour in conjunction with other problems.

The tendency of teachers to view aggressive behaviour more seriously than withdrawn behaviour would appear to influence the male-female ratio in the LD population, when one considers the prevalence of differential behaviour between the sexes. In her book The Development of Sex Differences (1966), Maccoby uses several studies to demonstrate the existence of greater dependency patterns in girls and aggressive patterns in boys. Whether these differences are innate, are influenced by socialization, or are the acceptable alternatives to which boys and girls resort when

school learning fails, remains to be examined in future research. To date, teachers must react to a situation where aggressive behaviour appears to be more common among boys and withdrawn or dependent behaviour more common in girls. It has been well established that aggressive behaviour is more disturbing to teachers than withdrawn behaviour (Algozzine, Ysseldyke, & Christenson, 1983; Rubin & Balow, 1978). It would therefore seem likely that more males, who presumably behave in an aggressive manner more frequently than girls do, would be brought to the teacher's attention and be referred for testing for potential learning disabilities.

One of the nine conclusions reached in a summary of generalizations from nine years of research in psychoeducational decision-making was that there is a high probability that a student referred for testing by the classroom teacher will be assessed and placed in special education (Ysseldyke, Graden, Wesson, Algozzine, & Deno, 1983). If classroom behaviour is a variable which affects a teacher's decision to refer a student for assessment, and if that referral influences the future placement of that student, it is important to examine the teacher's decision-making process surrounding referral more closely.

In this study an examination is made of teachers' perceptions of students in their class from academic and behavioural perspectives. A questionnaire entitled The School Behaviour Checklist (SBCL), which was devised by Miller in 1972, is used to gain this information. The SBCL consists of six factors—Low Need Achievement, Anxiety, Aggression, Academic Ability, Hostile Isolation and Extroversion.

Teachers were asked to complete the SBCL on a student in their class whom they observed to be having academic problems sufficiently serious to hinder future academic progress, and whom they have referred for possible testing. They were also asked to

complete the questionnaire on a second student from their class matched by age and sex with the first student but not experiencing serious academic problems.

Since this study was conducted in Ontario, Canada, some comments on the rules governing the identification of exceptionality are necessary. Regulation 554-81 governs the referral of students and is incorporated into the Education Act of Ontario. According to this regulation the identification of exceptional pupils is the responsibility of an Identification, Placement, and Review Committee (IPRC). Regarding the assessment of students throughout the school year, it is stated that "the major focus in this process of ongoing assessment is the pupil's teacher and the classroom." So while the final decision on the referral and placement of a student rests in the hands of the committee, it would appear that the teacher remains the principal referring agent.

Due to the central part played by the IPRC in the identification of exceptionality, it is difficult to assess the role played by teachers in the process. For this reason it seemed necessary to approach the question of teachers' referral practices from the viewpoint of teachers' perceptions of students in their classes. The referral to an IPRC in no way guarantees placement in a special education programme. Also the labelling of exceptionality encompasses many areas of special needs, for example behaviour exceptionality, learning disability, language disability, or giftedness. Therefore even if a student is referred by a teacher to the IPRC and is subsequently labelled exceptional, there is only a chance that that student's exceptionality originates in a learning disability. I hope to have surmounted this problem somewhat by requesting the teachers to complete one of the questionnaires on a student whom they perceived to be experiencing serious academic problems.

The placement or non-placement of a student in special education may be a decision which will affect the pattern of that student's learning and job choices in the future. If a child is placed in a special education programme unnecessarily, a decrease in self-confidence and morale may result in that student. Conversely, if a child is in need of services and does not receive them, learning patterns may become characterized by extreme frustration. In recent years many people have begun to recognize the deep entrenchment of sexism in our culture and how that sexism affects our impressions of females and males alike. Many of these notions are being challenged and appropriate changes have been made to curricula and textbooks in our schools. However, attitudes toward male and female children have remained almost unchanged. This study examines how preconceived notions of sex-appropriate behaviour may have come to bear an influence on the disproportionately small number of females who are diagnosed LD in comparison to their male peers.



## CHAPTER TWO – Review of the Literature

Since the creation of the term LD and the provision of services for LD students, patterns have emerged in the composition of the identified LD population. The most apparent pattern is that the LD population is overwhelmingly male. In this review I examine the male-female ratio in the identified LD population and discuss some of the possible underlying reasons for this ratio.

Some of the reasons for the present male-female ratio in the LD population are posited by researchers as being differences in verbal and reading skills between boys and girls and the accompanying tendency to interpret a reading disability as a learning disability. Comment is made on socio-cultural norms and their effects on the differential academic performance of boys and girls. Some attention is also given to problems within assessment procedures which are currently in place for potential LD students. The principal purpose of this review is to examine the role played by the behaviour of students in the decision of classroom teachers to refer students for psychoeducational assessment. As differential behavioural patterns for boys and girls are deeply entrenched, these patterns are discussed with a view to their effect on classroom teachers and their subsequent effect on the diagnosis of a significantly greater number of males than females as learning disabled.

The ratio of male to female students who have been categorized as LD has been presented as being as varied as nine males to one female or three males to one female. Of the 36 students participating in the McCarthy and Paraskevopoulous (1966) study, 90% were boys and 10% were girls. In examining American national statistics of LD students, Lerner (1981) observed that they were four to six times more likely to be boys than girls. In a study on the characteristics of LD children, Norman and Zigmond (1980) studied

1,966 students in 22 states in the United States. They reported a breakdown according to sex of 1,550 boys and 416 girls. This male-female ratio prompted the authors to describe LD as a "predominantly male disorder" (p. 19). Kirk and Elkins (1975) in a report on 3,000 children diagnosed as LD observed that the sex ratio was three boys to one girl with a consistency across states in the United States. Clearly, males significantly outnumber females in the identified LD population. In a field which has demonstrated sensitivity to individual differences, this ratio has received passing attention or has been interpreted as an unalterable state of affairs. Such passivity reflects acceptance of various touted causes for the large proportion of males diagnosed as LD.

#### Reading Ability of Males and Females

One of the most commonly cited possible reasons for the gender imbalance in the LD population, which has been forwarded by researchers, is the verbal superiority and hence the superior reading ability of girls. Sartain (1976), in his discussion of the instruction for reading disabled students, suggested that due to unclear definitions of learning disabilities, exaggerated claims were made of the number of reading disabled cases which are caused by a learning disability. Indeed, Kirk and Elkins (1975) reported that of the 3,000 students involved in their study, two-thirds were rated as having reading problems. This factor may explain the greater number of LD males.

Although there appears to be an implicit acceptance in the literature that girls are superior to boys in verbal and reading skills, research on the differential verbal abilities of boys and girls is by no means conclusive. Maccoby and Jacklin (1975) found little reason to suppose that there are any essential differences in either the development or expression of linguistic skills before adolescence. In an investigation of English children, Morley

(1957) reported that while girls talked earlier than boys, no differences in verbal performance were evident by age four. While much of the research in North America has found higher reading standards among girls (Gates, 1961), and a greater number of reading disabled boys than girls, a great proportion of the European research has found no significant differences in these areas. In a British study conducted by Wilson (1972), no significant differences in reading ability for various groups between 8 and 15 years old were reported. A European review (Malmquist, 1970) quotes two Scandinavian studies showing no significant gender differences in the reading performance of primary school students. Fairweather (1976), in his review of sex differences in cognition, comments that, in general, differences in reading ability are hard to find in England and Scotland, and that the significant differences tend to decrease after the age of ten, even in the United States.

A refreshing view of sex-differentiated achievement in reading has been offered by Gross (1978). Being aware of the overwhelming evidence in the United States that more males than females are being diagnosed reading disabled and of the uncritical acceptance of this situation, she selected an Israeli kibbutz in which to conduct her study. Because she was unconvinced of the assertion that the reason for the greater proportion of reading disabled males was physiological, she decided to examine the hypothesis that the male-female ratio of students with a reading disability could be cultural rather than physiological. In order to test this hypothesis, she chose a kibbutz which adhered to the principles of collective child-rearing and to equality of the sexes. Gross summarized the main physiological theories of male reading disability as being (a) maturational lag—the slower rate of boys' maturation can result in their being labelled reading disabled; (b) crossed dominance—the prevalence of lack of dominance of one cerebral hemisphere

over the other in males and its effect on reading disabilities; (c) vulnerability of the male organism—the male organism's vulnerability to stress and trauma which may lead to a reading disability.

Based on these theories, Gross advanced six hypotheses. Research hypotheses (1) and (2) tested the idea that no differences were present between kibbutz children on the basis of sex and reading level with respect to the correlations of crossed dominance and psychopathological scores. She also researched the hypotheses that no differences existed between the kibbutz boys and the kibbutz girls in (3) reading performance level; (4) reading readiness level; and (5) rate of maturational growth. The sixth hypothesis was concerned with the idea that kibbutz girls perceived reading as an activity equally appropriate to both sexes. A sample of 305 students from kindergarten, grade two, and grade five were randomly drawn from a population of 1,871 kibbutz students within these grades.

The results from Gross's research are at variance with results on this topic that have emerged from the United States. Thirteen percent of both boys and girls were found to be reading disabled, thereby demonstrating the lack of gender differences in the percentage of reading disabled students. Fourteen indices of psychopathology, including crossed dominance and maturational lag were found to be unrelated to cases of male reading disability. No differences were reported in reading performance level or reading readiness level on the basis of sex. The final result in Gross's analyses was that both sexes perceived reading as sex-appropriate. These results do not support the generally accepted view that the higher ratio of male reading disabled students has a physiological basis. Rather, they suggest that culture may have a significant influence on the categorization of students as reading disabled.

### Socio-cultural Norms as They Affect Academic Performances

There is a paucity of research in the area of cultural effects on the differential performance of males and females, and Sherman (1978) suggests that one of the reasons for this may be the difficulty in isolating cultural effects, as investigators are usually part of the culture which they are examining. However, available data lend general support to the view that some cultural norms are different for males and females. Stewart (1976) reported that males and females are treated and portrayed differently in North American society. This differential treatment has, however, been observed in most cultures. In a cross-cultural study of 110 cultures, 82% of those interviewed expected girls to become more nurturant than boys, 87% expected boys to achieve more, and 85% expected boys to be more self-reliant (Barry, Bacon, & Child, 1957). The link between expectation and performance has been established and documented (Cooper & Good, 1983). Once the expectation is held the student tends to act accordingly. This relationship is sometimes referred to as a self-fulfilling prophecy (Darley & Fazio, 1980).

Similarly, it would seem probable to expect that performance in areas considered appropriate for the student would be better than in those areas considered inappropriate. Mazurkiewiez (1960) found that reading achievement test scores were higher for those boys who perceived reading as being a masculine activity than for those who did not. An area of performance in which significant differences between males and females has been observed is that of spatial skills. Boys are generally reported as being in possession of superior spatial skills. Yet the spatial performance of girls was found to be as good as that of boys among the Inuit, who allow girls to participate in hunting (Berry, 1966). Conversely, in Mexico, where sex role divergence is more extreme than in the United States, boys and girls differ even more in spatial performance than their contemporaries in

the United States (Mebane & Johnson, 1970). The implication of much of this research would seem to be that performance is indeed affected by cultural norms and expectations. If experience of a skill is denied the child, or if practice of the skill is deemed unacceptable by peers and adults, the likelihood is that the child will perform poorly in that area.

The effects of socialization on sex-differentiated performance are closely linked to the effects of cultural expectations and norms. As early as 1966, Maccoby demonstrated the effects of socialization on school achievement. Clear patterns of achievement among males and females emerge during various stages of their school experience. Coleman (1961), in a study of high school students, observed that girls exhibited lower overall achievement, in spite of higher average I.Q. scores in the sample studied. Coleman suggested that high school girls were caught in the double bind of being a "good girl" for parents and teachers, and fearing unpopularity among male peers. Correlation between ability and achievement for girls tends to be higher during the early school years. Girls who are underachievers at high school tend to begin being so at the onset of puberty (Shaw & McCuen, 1960), at a time when they are beginning to become aware of adult female roles. For boys, the pressure for vocational preparation is seen to accelerate their academic achievement.

Maccoby (1966) speculates that perhaps the explanation for the differences in achievement is very simple. She claims that "members of each sex are interested in and proficient at, the kinds of tasks that are most relevant to the roles they fill or are expected to fill in the future" (p. 40). Viewed in this light, females who envisage their role in intellectually undemanding jobs will see little need to excel in high school. In spite of recent advances in the breakdown of stereotypical job choices, women are still burdened

with traditional job expectations and salaries which are significantly lower than males.

According to the 1981 census in Canada, women earn 64% of what men earn.

Undoubtedly, these factors influence females' perceptions of themselves and as a result their academic performance may be affected. It would appear that socio-cultural norms and expectations play a vital role in the school performance of girls and boys. Therefore it would seem likely that the male-female ratio of diagnosed LD students would also be affected by these factors. Socio-cultural norms and expectations could be interpreted as a contributing reason for the changes in performance of males and females at various stages of their development and the accompanying changing ratio of LD males to females during that development.

Recent research on socio-cultural explanations for sex differentiated academic behaviour has been reassuring to many educators who find the biological theory frustrating in that it seems to argue that little can be done to help many needy students. But until such time as children are offered a more egalitarian learning environment it is necessary to examine some of the other factors which may be contributing to the male-female ratio of LD students. As Caplan and Kinsbourne (1974) suggest, "if innate attributes or very early socialization were totally responsible for sex differences in the severity of problems in the primary grades, prospects for reducing the learning problems of boys would be bleak" (p. 49).

#### Problems in the Assessment Procedure

Another factor which may be contributing to the male-female ratio of LD students is the method of referral, assessment, and placement of these students. Much controversy surrounds this issue (Ysseldyke & Algozzine, 1979; Ysseldyke, Algozzine, Shinn, &

McGue, 1982). It has been reported that as many as 40% of students may be misclassified (Ysseldyke et al., 1982). Indeed, Ysseldyke, Algozzine, and Epps (1983) in a series of two investigations have demonstrated that 85% of 248 third, fifth and twelfth grade students identified as normal could be classified as LD. In their summary of generalizations from five years of research on the assessment of LD children, Ysseldyke, Thurlow, Graden, Wesson, Algozzine, and Deno (1983) listed one of the major problems as being the inconsistency of the present decision-making process. They reported that psychologists and special education teachers differentiated between low achievers and students labelled LD with only 50% accuracy, while naive judges experienced 75% accuracy. Other problems identified were the tendency to base decisions on naturally occurring student characteristics rather than using a data base, the disparate classification methods depending on the definition of LD in use, and the lack of reliable psychometric differences between low achievers and students considered learning disabled.

Another problem occurring in the identification of LD students which has been examined in several studies is that of teacher bias. Race (Datta, Schaefer, & Davis, 1968), sex (Schlosser & Algozzine, 1979), socioeconomic status (Jackson & Lahaderne, 1967), and facial appearance (Ross & Salvia, 1975) are some of the student characteristics which have been demonstrated as biasing teachers' attitudes towards assessment. Ysseldyke and Algozzine (1979) have proposed that bias is present before, during and after the assessment of LD students. This implies that some children are identified LD with inappropriate evidence, and that others are not identified in spite of having a learning disability.



The hypothesis investigated in this study is that the male-female ratio in the LD population is linked to bias on the part of teachers. This bias may be influencing teachers to interpret different kinds of behaviour as being indicative of a learning disability. The 1981 definition presented by the National Joint Committee on Learning Disabilities allows for the occurrence of LD "with other handicapping conditions (e.g. sensory impairment, mental retardation, social and emotional disturbance), or environmental influences (e.g. cultural differences, insufficient or inappropriate instruction, psychogenic factors)". Those who refer students are given very broad parameters within which to operate, and few guidelines are available on the interpretation of classroom behaviour. In order to assess how teachers are judging behaviour, it is necessary to examine the role which teachers play in the referral process. When it is understood that current assessment practice is characterized by what would appear to be a confirmation of teacher suspicions of a learning disability being present, it becomes critical to examine the criteria being used by teachers when they refer LD students.

The Role of Teachers in the Referral Process. The principal group engaged in the referral of students for learning or social problems is classroom teachers. Nicholson (1967) in his study concluded that 73% of all referrals to the school psychologist were teacher initiated, and that 93% of all referrals were initiated by school personnel. In a survey of referrals to the central school office for one school year (Robbins, Mercer, & Meyers, 1967), it was found that nine out of ten referrals originated in the school district and that two-thirds of these were referrals from teacher personnel teams. Only 4% of these referrals originated with parents. Clearly, classroom teachers are playing a vital role in the identification of students for assessment of LD.

In their role as identifiers of students with learning or behavioural problems, teachers have been perceived as being reliable (Ferinden, Jacobson, & Linden, 1973). However, this conclusion has been reached on the basis of the percentage of students classified as LD by subsequent assessment procedures. As previously discussed, many students are misclassified and there appears to be little consistency in the assessment process. Ysseldyke and Algozzine (1979) have commented that most assessment procedures merely confirm the observation of the classroom teacher who referred the child in the first instance. From a national survey of directors of special education in the United States (Algozzine, Christenson, & Ysseldyke, 1982), it was reported that 3 to 6% of the school-age population is referred each year for psychoeducational evaluation. Of those referred, 92% are tested, and of those tested 73% are declared eligible for special education services. Given this high percentage of eligibility for special services following teacher referral, it is hardly surprising that high reliability of teacher referral has been reported.

#### The Variables Which Influence Teacher Referral Of Students

Due to the central role played by teacher referral in the eventual diagnosis of LD, it is important to examine some of the variables which influence teachers to refer a student. In 1979, the National Education Association in the United States surveyed teachers to gain insight into their perceptions of why children do poorly at school. They found that 81% of teachers blamed school difficulties on students' home and family life, 14% blamed the students themselves, 1% blamed inadequate instruction, and 4% attributed problems to the organizational structure within the school (Algozzine, Ysseldyke, & Christenson, 1983). If regular teachers view themselves and their peers as being responsible for such a small percentage of student problems, it is predictable that they would refer students

whose problems they perceive as being outside the influence of the teacher. Ysseldyke, Pianta, Christenson, Wang, and Algozzine (1983) observed that the majority of teachers who referred students for assessment failed to intervene with an alternate instructional plan before placing the referral. It was also indicated in this study that teachers used vague and nebulous language when referring a student, thus indicating that teachers are either unclear about the referral reason or that their reason does not comply with the overall definition of LD. The overwhelming expectation of teachers, when referring a student, was that they expected the student to be tested and that testing would result in a special education placement, thus unburdening the regular teacher of the responsibility of instructional intervention (Ysseldyke, Christenson, Pianta, & Algozzine, 1983). While these variables have an overall influence on the extent of teacher referral and on some of the rationale behind teacher referral, the overriding factor which appears to influence the teacher's decision to refer a student for assessment is the behaviour of that particular student.

The results of a study undertaken to assess the variables that influence teacher referrals of LD students suggest that behavioural comments in students' folders had a pervasive effect on teacher judgement of these children (Giesbrecht & Routh, 1979). Simulated cumulative folders of fourth grade boys with average ability and low achievement were constructed. Among the information included in the folders were intelligence test scores, scholastic records and teacher comments. When teachers were asked to make recommendations regarding the kind of outside help that would be appropriate for the student, negative behavioural comments were found to be the most influential category of information classifying a student to be in need of special services. The second of four questions on the rating sheet asked the teachers to check the one

schedule likely to be most helpful to the student: regular classroom placement with no special help in the resource room; most of the time in the regular classroom, with one hour a day in the resource room; half time in the regular classroom, half time in the resource room; or full time special resource centre placement. Negative behavioural comments in the child's folder produced teacher recommendations of a mean of one hour and 58 minutes per day in the resource room as compared to only one hour and 38 minutes per day for children with no behavioural comments in their folders.

A 1967 study investigated the reason for referral of 1,231 students from one school district in California to the central office over a period of one school year (Robbins, Mercer, & Meyers). Referrals from elementary, junior high, high school, and junior college were used. Four major categories of reasons for referral were identified: outstanding qualities (gifted), problem behaviour, academic difficulty, and special education (MR or EMR). Learning problems were not the primary reason for referral at any grade level. Some 45% of all referrals made in kindergarten through grade three were for outstanding qualities. The authors speculated that this early identification of the gifted was related to a state program which encouraged this trend by offering reimbursement for special programs for these students. Problem behaviour was the reason listed for 40% of all referrals in grades four through six, 54% in junior high, and 61% in senior high school. These variations may reflect different emphases at the various levels, or it may be that students exhibit more behavioural problems as they get older. Boys had a higher rate of referral for behavioural problems throughout elementary schools than girls. But the female level rose to equal the male rate in grade eight and surpassed it in grade 11. In general, it was noticed that male referral for behavioural problems was highest in prepubertal years whereas for females it was highest in postpubertal years. This study presents definite indications that teachers

are using behaviour as a main criterion in their guidelines for referring a student for further assessment. It is therefore important to examine research undertaken in the area of differential behavioural patterns which might be characteristic of LD students.

### The Behaviour of LD Students

When Bryan and McGrady (1972) examined the Pupil Behaviour Rating Scale (Myklebust, 1971) to determine its usefulness as a screening device in identifying potential learning disabilities, some interesting observations of the behaviour of LD students were made. Elementary school teachers of grade three through six were asked to submit the names of male students whom they believed to be demonstrating learning problems. Out of the initial 315 students, 183 were selected on the basis of IQ (85 through 115), sex (male), age (8-12.6), and grade (3 through 6). Control subjects (n = 176) were matched on these variables and on socioeconomic status. Each subject was rated on the five categories contained in the Pupil Behaviour Rating Scale: Auditory Comprehension and Listening, Spoken Language, Orientation, Behaviour, and Motor. The control group was rated higher in all five categories. Teachers consistently rated the behaviour of the LD group as being less appropriate than that of their normal peers. In their discussion of the results, Bryan and McGrady speculate that the phenomenon of less adequate behaviour being exhibited by LD students may be indeed characteristic of this group and that students with learning problems behave in a more disruptive manner. The other possibility is what is referred to as the negative pygmalion effect. This effect refers to a situation where the child's disruptive behaviour would lead the teacher to believe that the child would fail. This belief, in being transferred to the child, would in turn cause the child to produce negative results.

One of the goals of a study by Bryan and Wheeler (1972) was to observe whether there were any behavioural differences between LD and average students. The four major categories of behaviour under consideration were: task-oriented behaviour, non-task oriented behaviour, interactions, and waiting. Observers rated the behaviour of two LD boys and two normally achieving boys in five classes. The behaviours of each subject were recorded in ten second intervals for a period of five minutes. The data were recordings of frequency of occurrence of behaviour. The major finding of this study was that the LD pupils spent a great deal of time not working. They spent less time engaged in task-oriented behaviour and more time in non-task oriented. These data did not support the notion that LD boys are more disruptive in the classroom than normal achievers. In the code used in this study, a boy was rated with task-oriented behaviour if he was looking at a book, whether or not he was reading. Bryan and Wheeler commented that perhaps the LD boy learns to look busy. A later study (Bryan, 1974) also found that LD students spent significantly less time in task-oriented behaviour in the classroom than the average student. It is difficult to ascertain whether this task-oriented behaviour is a symptom of LD or merely a result of class assignments being beyond the comprehension of the LD student, thereby leaving him with little alternative than to go off task.

A further attempt to gain insight into the behavioural patterns of LD boys was made by Richey and McKinney (1978). Two matched groups of 15 third- and fourth-grade students each were selected, one group comprised of LD students and the other group of normal achievers. Data were collected on each pair of pupils (one LD and one normal student). The Schedule for Classroom Activity Norms was used to code the behaviour (McKinney, Gallagher, & McKinney, 1974; McKinney, Mason, Perkeson, & Clifford, 1975). This procedure contains 27 discrete categories of behaviour which are combined in a mutually

exclusive fashion to form 12 general categories of task-oriented, social, and affective behaviours. One observer coded the behaviour of the LD child at the end of each ten second interval for five minutes, while the second observer coded that of the matched peer. The two observers exchanged subjects during the second five minute period. A total of 180 moments of behaviour were recorded for each subject. Intercoder reliability was recorded at an average of 91% agreement. While results indicated that LD students exhibited a significantly higher frequency of distractibility than normal achievers, LD students as a group were not seen to exhibit the cluster of behaviours usually associated with them.

In a 1982 study conducted by McKinney, McLure, and Feagans, task-oriented, social, and affective behaviour patterns were compared for 23 pairs of LD and non-LD students. LD children were seen to display less task-oriented behaviour and more nonconstructive activities than their non-LD peers. In a summary of the above studies on comparing the behaviour of LD with non-LD students, it would seem appropriate to conclude that while disruptibility and off-task behaviour are not necessarily symptomatic of all LD students, they seem to occur frequently in LD students.

However, more conclusive research on this topic has been provided by McKinney and Feagans (1984). A longitudinal study charted the development of newly identified LD students over a period of three years. A teacher rating scale and an observational system were used to examine the behaviour of the LD students and their non-LD peers in the regular classroom setting. The researchers noted the consistency of the teachers' observations of behaviour over the three year period. The LD children were rated less favorably on distractibility, dependence, and apathy. These children were also observed to be less task-oriented than the comparable group of non-LD children. While there has

been speculation that LD students develop maladaptive behaviour as a result of frustration with school tasks, these results seem to indicate that this pattern of behaviour is present at the time of identification and persists over time.

Another method which has been used by researchers to gain a more accurate assessment of the behavioural patterns of LD students is to compare LD students with emotionally disturbed (ED) students. One such study (McCarthy & Paraskevopoulous, 1969) examined the hypothesis that LD children could be differentiated from ED children in terms of observable social behaviours. The subjects in this study were 36 children with special learning disabilities, 100 children in special classes for the emotionally disturbed, and 41 average children. Teachers rated the children's behaviour on the Behaviour Problem Checklist (Quay & Peterson, 1967). Factor analysis of the item correlations within this checklist have consistently shown that there are three dimensions within its behavioural domain. These dimensions are (a) unsocialized aggression, (b) immaturity-inadequacy, and (c) personality problem.

The results suggest that teachers perceived behaviours in these three groups differently in terms of frequency and/or degree of severity. The principal finding of the McCarthy and Paraskevopoulous study is that teachers perceive and rate the behaviour of learning disabled, emotionally disturbed, and average children differently. Behavioural problems were noted more often by teachers of the emotionally disturbed classes than by either of the other two groups of teachers. Teachers of LD students perceived their pupils as presenting fewer behavioural problems and/or problems of less severity than did teachers of the emotionally disturbed groups. They also rated LD pupils as having more



behavioural problems and problems of greater severity than average achievers. The LD group was also seen to manifest more conduct problem behaviours than immature or neurotic behaviours.

Further attempts at forming a more complete profile of the behavioural patterns of the LD pupil have been made through research on the peer relationships of LD students. The purpose of a study by Bryan (1974) was to determine the peer popularity of pupils diagnosed as LD. The 84 LD students were drawn from third, fourth, and fifth grades. Control subjects were randomly selected and matched to the LD group on sex, race, and classroom. Each group was comprised of 35 white and 29 black boys and 10 white and 10 black girls. Some 1,430 children in the 62 classrooms which contained the LD and control students participated in the study. In order to measure peer acceptance or rejection, two sociometric techniques were administered. The first measure (Moreno, 1960) included: (a) the choice of three classmates as friends, classroom neighbors, and invitees to a birthday party; (b) the choice of three classmates who are not friends, not neighbors, and not invitees to a birthday party. The second measure, The Who Technique (Garry, 1963) asked questions of the students who gave that student's opinion of her peers in the classroom. Examples of these questions are "Who finds it hard to sit in class?", "Who is always worried and scared?"

Each group was told that they would be asked their opinions of others in their group, and that all replies would be treated in strict confidence and not made known to teachers or to other students. There were 20 items between the two measures. Percentages were computed by dividing the sum of the number of classmates who nominated the subject by the total number of votes cast within the classroom. These percentages were converted into arc sine equivalents for the computation of the analysis

of variance (Winers, 1962). A correlation matrix indicated that the 20 items could be subdivided into two scales, social acceptance and social rejection. A three-way analysis of variance for unequal numbers of subjects, using a least squares analysis, was computed on the two scales social acceptance and social rejection, for the variables of group (LD and control), sex (male and female), and race (black and white).

There was a main effect for group on both the acceptance and rejection scales. Learning disabled students received 4% nominations on social acceptance and 11% on social rejection, while the control group received 8% on social acceptance and 6% on social rejection. Bryan accounts for the main effect on the sex-by-group interaction by the extreme ratings of girls. The LD girls received 13% of ratings on the social rejection scale and the control girls received 5%. The LD boys received 9% and the control boys 8% on the social rejection scale. While the effect of less social acceptance for LD students is consistent with results from similar research in this area, the possibility that female LD students are rejected more than their male counterparts has not been explained. Based on the small number of females in Bryan's sample in comparison to the number of males, and in more general terms the small number of females in the diagnosed population as a whole, it may be that a female student who is diagnosed as LD needs to exhibit extremely poor social skills in order to get referred for assessment in the first instance.

A further study in this area (Bryan & Perlmutter, 1979) reported that LD females were viewed by female undergraduates as being less desirable than males. In reflecting on their conclusions, Bryan and Perlmutter wrote that "whether these conclusions reflect a reluctance to diagnose females as LD and thus labelling only the most severely disturbed females as such, or whether they represent a predisposition to diagnose only mildly impaired boys as learning disabled cannot be determined." (p.84) Considering the

number of boys diagnosed as LD, the latter part of Bryan and Perlmutter's comment seems less likely than the former. The term "desirable" in this study was related to popularity, and no further analysis of the behaviour was undertaken. Most studies on LD students use samples in which boys outnumber girls by about three to one. While this ratio is generally representative of the present LD population, one can only speculate on the possibility that a female referred for LD would need to be more disabled, thus accounting for these significant differences between male and female LD students.

Other studies on the peer status of LD students report similar results to those of Bryan (1974). It was indicated in a study by Bryan (1978) that LD students exhibited difficulty in eliciting positive responses from others and in establishing friendships with peers. Siperstein, Bopp, and Bak (1978) found LD students to be less popular than their peers; however LD students were not represented among the social isolates. A 1978 study by Bruininks which examined the peer status, self-concept, perceived peer status, friendship preferences, and interpersonal needs of LD and non-LD students reported similarly negative profiles of the LD students. Learning disabled students had significantly lower social status and lower self-concept scores than normal achievers. They were also less accurate in assessing their own popularity, tending to overestimate it. These LD students were also shown to have a higher need to express control.

There seems little doubt in the literature available on the behavioural and social skills of LD students in comparison with their peers that the LD student generally exhibits lower scores in these areas. However, there may be an anomaly in this situation. If teachers refer students who exhibit behavioural problems, and assessments tend to confirm referrals, then it would seem logical that the diagnosed LD population would exhibit a greater percentage of behavioural problems. At the moment, all that can be concluded is

that the diagnosed LD population appears to manifest more behavioural problems and, in particular, more disruptive or aggressive behaviour patterns than the population of average achievers. In order to better understand the behavioural problems of diagnosed LD students, it is necessary to analyze these behaviours and to discover which are considered most disturbing.

#### Criteria for Disturbing Behaviour

Because teachers are provided with few guidelines to help them in interpreting problem behaviour, it is reasonable to suspect that they are relying very much on subjective judgement. Behaviour which is tolerable to one teacher may present itself as a serious problem to another. A longitudinal study in this area (Rubin & Balow, 1978) has produced striking results. This study took place over a seven year period and involved 1,586 students who were normally distributed on measures of IQ, socioeconomic status, and school achievement. Teachers were requested to rate the children whom they perceived to be manifesting behaviour problems. Of these children receiving three or more teacher ratings, 58.6% were classified as a behaviour problem at least once. Of children receiving six teacher ratings, 60% were considered a behaviour problem by at least one teacher. Algozzine (1976), in asking 75 subjects to complete each item of the Disturbing Behaviour Checklist with regard to how disturbing each item was in working with children, reported that regular teachers found all behaviours in the checklist more disturbing than did their colleagues in special education or teachers-in-training. The behaviour which ranked the most disturbing to all groups was that of social defiance. These results indicate that regular teachers have a more limited tolerance of disturbing

behaviour than either special education teachers or teachers-in-training. Due to the socialization function of schools, it is understandable that regular teachers would find socially defiant behaviour more unacceptable than many of their colleagues.

In a further investigation of differential social behaviours, Algozzine, Ysseldyke, and Christenson (1983) examined the extent to which teacher decisions about a student were influenced by the student characteristics in interaction with the teacher's stated tolerance of those characteristics. Two different summaries of a third grade student, one of a child with unmanageable behaviour and the other with immature behaviour, were randomly assigned to a group of 116 classroom teachers. Different behaviours were included to portray the immature or unmanageable student. However, apart from these behavioural phrases, the summaries described a rather ordinary child. Fifty-seven teachers were asked to rate the student with the immature behaviour, and 59 teachers were asked to rate the unmanageable student. They were requested to rate the extent to which the student had a behaviour problem, a learning problem, and was eligible for special education.

The Disturbing Behaviour Checklist was used to measure the tolerance of these teachers for different types of behaviour. Unmanageable behaviours such as impulsivity, rudeness, or hyperactivity together with immature behaviours such as anxiety or insecurity were contained in the Disturbing Behaviour Checklist. Each group of teachers was divided into two additional groups. Those with a high or low tolerance for the behaviour which they were rating, were separated. In this way, the effects of teacher tolerance for behaviours on their ratings of a student exhibiting those same behaviours were evaluated.

No differences were observed in the teachers' ratings of the immature student's

current problems, but less tolerant teachers' ratings were less favorable in each case than those of tolerant teachers. Teachers with different levels of tolerance rated a student exhibiting unmanageable behaviour similarly. Judgements of the unmanageable student were more negative than those made about the immature child, and the unmanageable student was more likely to be judged eligible for special education than the immature student. These results suggest that the unmanageable student is more likely to be viewed as a problem, regardless of the teacher's tolerance for immature or unmanageable behaviour. Teachers who showed a high tolerance for immature behaviour had high expectations for these students. However, no differences were reported in ratings of unmanageable students by teachers with different tolerance levels.

Recognizing the central role of the classroom teacher in the identification of high risk students, an effort was made to gain insight into teachers' perceptions of these children (Keogh, Tchir, & Windeguth-Behn, 1974). The sample consisted of 80 kindergarten and first grade teachers. Three of the four questions examined in this study were: (1) What are the characteristics of educationally high risk children as perceived by the sample of teachers? (2) Can a consensus of opinion on the characteristics of high risk children be reached by kindergarten and primary grade teachers? (3) Are EMR and LD students perceived as being different from each other?

Teachers were interviewed individually and asked to describe characteristics of potential LD and EMR students. In this way all descriptions of high risk children were teacher generated. Sixty-three discrete LD characteristics or categories were mentioned by teachers. The seven highest ranked descriptors were, in order of frequency and percent of teachers so responding: hyperactive (53%); aggressive (47%); short attention span (47%); disruptive, talking, noisemaking (34%); lacks responsibility (33%); withdrawn

(31%); problems due to home conditions (31%). Eighty-two discrete EMR characteristics were mentioned by teachers. The five highest ranked descriptors were, in order of frequency and percent of teachers so responding: poor recall and retention (43%); inability to cooperate on an academic level (40%); poor coordination (40%); short attention span (33%); and inability to work with abstractions (31%).

The main result emerging from this study is that kindergarten and first grade teachers tend to identify EMR students according to their academic ability, while identifying LD children according to their behaviour. It is also clear that among the sample of teachers, aggressive behaviour warranted more attention than withdrawn behaviour for potential LD students. It should be noted that the characteristic "withdrawn" was mentioned more often by kindergarten teachers (60%) than by first grade teachers (29%) in relation to potential LD students. As the kindergarten year is generally perceived to be a time to develop the social skills of the child, it is probably logical that the kindergarten teacher would take a more serious view of withdrawn behaviour. Many teachers claimed that they were uncertain as to the characteristics they should be seeking in the EMR child, whereas they responded without hesitation on the characteristics of the LD child. As Keogh et al. commented, perhaps the disruptive child who is making little academic progress in spite of seemingly normal intellectual ability is the most frustrating combination for the average classroom teacher. If this is so, then undoubtedly this child will command greater attention in the classroom.

According to the results of a study by Bullock and Brown (1972), the tendency to interpret aggressive behaviour more seriously than other types of behaviour is not confined to the average classroom teacher. As part of a larger study (Bullock & Brown, 1972) teachers of emotionally disturbed students were asked to list the principal behavioural problems with

which they were confronted in their current teacher position. Table 1 presents the problems in order of frequency, as they were reported by the teachers. Although the behaviour "withdrawn" is listed in second place in Table 1, the frequency of its occurrence (32%) is low in comparison to the frequency of the behaviour "acting out, aggressive, hyperactive" (96%). It would seem that teachers of emotionally disturbed students are bothered by similar types of behaviour as regular teachers. The only apparent difference is that teachers of emotionally disturbed seem to list withdrawn type of behaviour as being a greater cause for concern to them than do regular teachers. There appears to be definite indications that regular teachers and teachers working in special programs have established a hierarchy of disturbing behaviours. Disruptive, unmanageable, or aggressive behaviour seems to be the behaviour of which teachers have the least tolerance. Withdrawn behaviour is lower in the hierarchy of disturbing behaviours for teachers.

Ziv (1970) contrasts this attitude with that of professionals in mental health fields, who tend to take a more serious view of withdrawn behaviour in comparison to other disturbing behaviours. In his speculations on this state of affairs, Ziv commented that teachers are bothered by what disturbs them within the classroom framework, while psychologists tend to view the whole child.

Ross (1976) gave a good example of the ramifications of this type of situation when he examined the relationship between learning disability and hyperactivity. He presented a situation with two boys in the same class, neither of whom is suspected of having a learning problem. One of them exhibited aggressive, giddy behaviour and having been brought to the teacher's attention, was given an intelligence test and was found to have a discrepancy between his estimated potential and his actual performance. He was



**TABLE 1**  
**BEHAVIOUR DIMENSIONS OF EMOTIONALLY DISTURBED CHILDREN**  
 (from Bullock & Brown, 1972)  
 (N = 112 teachers)

Behaviour problem	f*	Percent of teachers
Acting out, aggressive, hyperactive	108	96
Withdrawn	36	32
Poor social relationships	33	29
Defiance of authority and structure	23	20
Immaturity	16	14
Poor academic achievement	10	8
Poor attention span	9	8
Perceptual deficiencies	5	4

\* all responses recorded

subsequently diagnosed as LD. Thus, this child's behaviour played a major role in his being labelled LD. Because the second child did not manifest troublesome behavioural symptoms, he did not receive special attention. This second hypothetical child may often be a girl who through behaving in a more socially acceptable fashion draws little attention to herself, and thereby avoids having attention focussed on her potential learning problems.

### Sex-Differentiated Behaviour

To understand how teacher tolerance for certain types of behaviour might affect the male-female ratio in the LD population, it may help to explore whether certain behaviours are more prevalent in one sex than in the other. Maccoby (1966) has outlined aggression and dependency as the two behaviour patterns which have been most researched. She has cited several studies which have demonstrated that boys manifest more aggressive patterns of behaviour, while girls show greater dependency.

Many studies lend support to the main theme of Maccoby's argument, that of sex-differentiated behaviour. Werry and Quay (1971) used the Quay-Peterson problem checklist in order to examine the prevalence of certain behaviours as a function of sex and age. This checklist contains 55 separate symptoms comprising those most commonly seen in child guidance populations. Data were collected on 97.2% of the boys (n = 926) and on 95.7% of the girls (n = 827) from kindergarten to grade two in the public school system of Urbana, Illinois. Teachers who had been teaching the children for nine months did the rating. Thirty-six of the descriptors were significantly more frequent in boys, while five were significantly more frequent in girls. The remaining fourteen descriptors occurred equally in both sexes. Aggression or acting-out was almost uniformly more common in boys. The girls' behaviour was categorized as neurotic, although boys also exhibited neurotic behaviour. Restlessness was checked in 49% of boys, disruptive 46%, short attention span 43%, inattentiveness 45%, distractibility 48%. This study demonstrated that not only do boys exhibit more psychopathological symptoms per child, but, as Werry and Quay concluded, "the connotative sense of most of the symptoms commoner [sic] in boys represents 'badness'" (p. 14).

Using the Werry and Quay results as a base, Schlosser and Algozzine (1979) conducted more specific research in this area. The purpose of their study was to determine whether those behaviours which are more prevalent in boys, are more disturbing to teachers than those behaviours more prevalent in girls. Three groups of 30 teachers were randomly selected from the normative sample utilized in the development of the Disturbing Behaviour Checklist. These teachers had responded to the 55 items on the Disturbing Behaviour Checklist indicating how disturbing the behaviours were in working with children. The scale of disturbing behaviour ranged from 1 (not very disturbing) to 5 (very disturbing). Means of "disturbingness" were computed by summing the teachers' responses to the 32 boy-prevalent behaviours and then dividing that total by the number of boy-prevalent items (i.e. 32). The three means, which were calculated for each teacher (boy-prevalent, girl-prevalent, and neither boy nor girl prevalent), were obtained similarly.

The behaviours more prevalent in boys were viewed as being significantly ( $p < 0.01$ ) more disturbing than those more prevalent in girls. In each of the analyses of variance, significant main effects ( $p < 0.01$ ) were obtained. Because boys exhibit behavioural patterns which are viewed by teachers as more disturbing, Schlosser and Algozzine caution that "teachers should acknowledge and deal with this difference so that it does not become a source of detrimental ecological imbalance within the school environment" (p. 35).

Further support is lent to the notion that boys and girls exhibit different types of problem behaviour by Rubin and Balow (1971), who reported that boys consistently outnumbered girls in all problem behaviours. It would appear from this study that teachers accept a very narrow range of behaviour as being within their realm of influence. Deviation from this accepted range generally results in a call for outside intervention. In

her research, Gilbert (1976) asserts that conduct problem behaviour (acting-out) is associated with LD boys while personality problem behaviour (withdrawn) is associated with LD girls. Another behaviour descriptor which is frequently interpreted as being synonymous with aggression and therefore much associated with LD students is hyperactivity. As hyperactivity is diagnosed with a male-female ratio from 10:1 to 4:1 (Kashani, Chapel, Ellis, & Shekim, 1979), it may be an influential factor in the diagnosis of LD. Therefore a brief examination of the manifestations of hyperactivity in males and females may provide a more complete picture of the influence of behaviour in the male-female ratio of the LD population.

There are indications in the literature on hyperactivity that this type of activity may need to be interpreted differently for males and females (Maccoby, 1966). In the Fels longitudinal study, Kagan and Moss (1962) reported that measures of hyperkinesis in male children correlated negatively with adult intellectual achievement, while the correlation for females was slightly positive. They also found that males who exhibited shyness and fearfulness in childhood had higher IQ's and developed greater intellectual interests in adulthood, while for females the correlations between these attributes in childhood and adulthood was zero or negative. Several studies have centered on the correlations between aggression or anxiety and intellectual achievement in childhood and in adulthood (Kagan & Moss, 1962). Aggression appears to act as an inhibitor more in males than in females. Correlations between anxiety and aptitude are significantly negative for females, and are either low, negative, zero, or positive for males.

There appears to be agreement among a number of researchers that aggressive behaviour has a higher incidence among boys (Maccoby, 1966; Werry & Quay, 1971), and that teachers attend closely to aggressive behaviour (Algozzine, 1976; Algozzine,

Ysseldyke, & Christenson, 1984). Therefore, a relatively high number of boys will be perceived by their teachers as demonstrating disturbing behaviour. There also seems to be agreement that withdrawn behaviour has a higher incidence among girls (Gilbert, 1976) and that teachers do not attend closely to withdrawn behaviour (Algozzine, Ysseldyke, & Christenson, 1984; Bullock & Brown, 1972). Therefore, relatively few girls are selected for psychoeducational assessment.

The overall ramifications of the findings on hyperactivity indicate that teachers are attending to the behaviours in LD children which are the cause of greatest concern, i.e. withdrawn and aggressive behaviours. However, in interpreting aggression as the most problematic behaviour, teachers may not only be over-referring boys to the LD classroom, but they may also be misinterpreting female aggression. In this sense it is possible that LD females are being dealt a double blow. If their withdrawn behaviour has a more deleterious effect on their academic performance than the same behaviour would have in the case of a male, there would appear to be extra reason for searching out the withdrawn female in the classroom. Because she has perfected methods which allow her to fade into the background within the classroom, it is possible that the female LD student is not being offered the services which may be essential to her intellectual well-being.

#### Responding to School Failure in Girls and Boys

In analyzing behavioural patterns in LD girls and boys, it may be helpful to view behaviour in the context of reaction to school failure. It is generally accepted in the field of education that there is an apparent relationship between school failure and problem behaviour. However, recent findings appear to indicate that males and females experience different emotional responses to failure. Consistent with Maccoby's

comments on the reasons for achievement in females, Murphy (1962) in observing the behaviour of nursery school children during an intelligence test, found that when confronted with failure, boys tended to express autonomy more than girls, and girls became more passive than boys.

Caplan and Kinsbourne (1974) have contributed an insightful study on the subject of female and male reaction to failure. The first section of their paper deals with determining whether children's attitudes about various kinds of classroom behaviour are different after failure, and are different for boys than for girls. A questionnaire was administered to 190 boys and girls, aged 6-11 years. The purpose of the questionnaire was to determine which classroom behaviours children consider acceptable and desirable, which behaviours are most appropriate for each sex, and which sex is usually found behaving in each way.

A significant number of children replying to the questionnaire ranked desirable types of behaviour as (a) to be nice, (b) to be smart, (c) to be good at sports, and (d) to be a leader. A statistically significant majority of all children viewed girls as fitting into the first two categories, while the latter categories were judged as being more appropriate for boys. A failing girl's socially acceptable alternative to being smart is to be nice, and this attribute is more highly ranked by peers than the failing boy's alternative of being good at sports or being a leader. Furthermore, being nice is probably an easier goal for girls to achieve, due to the socialization process, than being good at sports for either sex. Being good at sports usually presumes a degree of natural ability, and as class leadership generally demands a high level of social acceptance among peers (Harrison, Rawls, & Rawls, 1971), and a superiority in strength or achievement (Pikunas & Albrecht, 1961), the LD boy stands little chance in such a competitive arena. Scranton and Ryckman (1979),

in commenting on LD girls' acceptable alternatives, suggest that their range of acceptable behaviours is more limited and more rigidly enforced than for boys. Thus LD boys would appear to be given more leeway when their acceptable roles are outside their reach. They can be aggressive or they can be nice, even if being nice is defined as a female alternative. The LD girl who chooses to be aggressive appears to be deviating further from her acceptable role than the boy who opts for being nice.

The second part of the Caplan and Kinsbourne study concentrated on testing the hypothesis that boys, as a result of frustration over the difficulty in finding acceptable male roles, would react more antisocially than girls when faced with frustration. The same questionnaire was administered to 32 children who were participating in a summer program for children with learning difficulties. These responses were compared to the first set of responses from normal achievers. Results supported the hypothesis. Academically failing boys adopted more hostile and aggressive attitudes than academically failing girls. This hostility was more visible in the boys' attitudes to girls. A significant number of boys believed that boys were smarter, better at sports, less noisy in class, and more eager to do well in schools than girls. As the authors commented, "boys who failed not only became aggressively critical about the opposite sex but also did it in an unrealistic way" (p. 234). The academically failing girls did not demonstrate more hostility than normal girls towards the opposite sex. In fact, they declared more often than normal girls that it was unacceptable for boys to resort to aggressive behaviour. The result is consistent with Murphy's (1962) in that the failing girl tends to act in a manner that will probably achieve teacher approval. She tends to become more passive when confronted with failure. Zunich (1964) reported that boys' reactions to failure were

characterized by more destructive emotional-response, rationalizing, and seeking-help behaviours than girls'. Girls tend to express more behaviours such as seeking contact and information, and attempting a solution alone.

There appears to be general agreement in the literature that female behaviour in the classroom conforms more closely to the average teacher's interpretation of good behaviour. Leinhardt, Seewald, and Zigmond (1982) suggest that girls "play school" better than boys, and rather than clearly going off task, they wait to sharpen pencils and generally look busy. In the Donahue, Pearl, and Bryan (1983) study, it was reported that LD girls produce "more polite requests and somewhat more persuasive appeals to all listeners" (p. 66) than did their non-disabled peers. It is likely that a majority of LD females resort to nice behaviour as a means of compensating for their disability. As nice behaviour is generally encouraged at school, these girls are then perceived to be fitting into school, and to be presenting no major behavioural or academic problems. These studies lead to speculation that the behavioural problems observed in LD students may be partly a reaction to frustration at failing academically rather than being just an accompanying symptom of learning disability. They also indicate that teachers, when referring students for psychoeducational assessment, should consider not only more blatantly anti-social behaviour such as aggression, but also withdrawn or passive behaviour.

#### Teachers' Differential Behaviour Towards Students

While there are indications that an established hierarchy of behaviours influences teachers in the referral of students, it is also essential to examine whether teachers react similarly to all students. Interested in teachers' differential behaviour towards isolated/rejected LD



children and towards popular non-LD children, Siperstein and Goding (1985) reported that teachers initiated significantly more interactions, responded with greater frequency of corrective behaviour and used more negative verbal and non-verbal behaviour with the isolated/rejected LD sample than with the non-LD students. A 1982 study (Weinstein, Marshall, & Brattesani) explored student perceptions of teacher treatment towards male and female students. Students described high achievers as receiving higher expectations and more opportunity and choice than low achievers. Low achievers were perceived as receiving more negative feedback and teacher direction, and more work and rule orientation than high achievers. Students reported that they perceived these differences of treatment as being independent of the sex of the student rated.

However, other studies indicated significant differences in the treatment of males and females by their teachers. It has been found that teachers awarded girls higher marks than boys (McCandless, Roberts, & Starnes, 1972) in spite of no important differences between the sexes in their achievement tests. Datta and Schaeffer (1968) reported that teachers described boys in more negative terms than girls. This may of course be due to the ability of girls to deviate less from the norms of accepted school behaviour than a bias on the part of the teacher.

Because education literature is rich in studies on the superiority of females in the area of reading (Gates, 1961; Stranchfield, 1971) and the superior ability of males in the area of mathematics (Aiken, 1973), it is interesting to observe whether teachers' reactions to students are different for girls and boys in these particular subjects. Leinhardt, Seewald, and Engel (1979) tested the hypothesis that superior performance in mathematics on the part of boys, and superior performance in reading on the part of girls could be affected by teachers' verbal interaction with students in these subjects. Results

showed that girls received a significantly higher percentage of cognitive contacts than boys from the teachers during the reading period, while the reverse was true for mathematics. On the average, girls received 9% more academic contact than boys in reading, and 2% less than boys in mathematics. Boys received more mathematics contacts than girls. This study demonstrates that teachers interact differently with students according to the sex of the student and the subject being taught.

In a later study, Leinhardt, Seewald, and Zigmond (1982) observed few differences in teacher instructional behaviour directed towards boys and girls. However, girls read aloud more than boys and girls received more rewards and waited more. If teachers' interactions with students in academic and social contacts vary according to the sex of the student, it would seem probable that students' academic and social performance might be interpreted on the basis of sex, or that sex would at least be a variable in the interpretation. The Leinhardt et al. study proposed an increase in vigilance in LD placement procedures, especially for white males (whom it saw as being overly represented in the LD classroom), and advised that teachers take race and sex into account when referring a student.

It is evident that boys' classroom behaviour succeeds in drawing attention to their academic problems. It would appear that teachers react differently towards female and male students and that their reactions to students is also affected by the subject being taught. Caplan (1977) asks if this situation is further exacerbated by a teacher bias which shows greater concern for academic problems of one sex over the other. It was predicted that the academic achievement of boys would be viewed more seriously than that of girls. It was also predicted that the greatest deviations from the norm in terms of behaviour (i.e. withdrawn boys and aggressive girls) would be seen as representing the greatest need for

intervention. Caplan purposely chose undergraduate students as her sample in this study, as she saw them as being less likely to display the sex bias of teachers who have already been exposed to students in classrooms. The 280 participating undergraduates were given a questionnaire containing descriptions of children. There were 16 descriptions in all, and some examples of these descriptions were (1) an 8-year-old girl, withdrawn, having trouble with reading; (2) a 6-year-old boy, withdrawn, having trouble with reading; (3) an 8-year-old girl, acting-out, having trouble with arithmetic. Respondents were asked to rank the children in order of their need for tutors, assuming that the demand for tutors is greater than the supply.

These undergraduates rated boys, 8-year-olds, withdrawn behaviour, and reading difficulty as being in need of the most immediate attention. Both interactions, the interaction between sex and behaviour and between behaviour and subject of difficulty, produced significant effects. Deviations from the norm (i.e. withdrawn boys and acting-out girls) were perceived to warrant priority for tutoring services. This latter result supports the 1973 study by Caplan which showed that low-achieving aggressive girls were more likely to repeat a grade than low-achieving aggressive boys. The 1977 study supports the hypothesis that greater concern is expressed for boys' learning problems than for those of girls. One surprising result of this study was greater concern for withdrawn behaviour than for aggressive behaviour. While this result is consistent with concerns raised by psychologically oriented professions, it is the opposite of results obtained from studies on the priorities of teachers with regard to students' behaviour. However, it is doubtful if these results could be generalized to the population of teachers who usually refer students for psychoeducational assessment. The need of the average classroom teacher for an orderly environment, in which to instruct children at various

levels of achievement, increases the chance that the child exhibiting the acting-out behaviour will be perceived as a nuisance. There appears to be more concern among teachers and undergraduate students for male achievement than for female achievement. There also seems to be more concern for the stereotypical male academic problem (i.e. reading) than for the stereotypical female academic problem (i.e. mathematics).

### Conclusion

In summary, the ratio of LD males to females would seem to warrant greater attention than it has received to date. It hardly suffices to claim that the imbalance is a result of greater learning problems in males. In our present society, where many of the myths of sex-differentiated performance have been dispelled, the sex ratio in the LD classroom needs closer examination. Indications are that behaviour is a strong element influencing teacher referral practices of potential LD students. Without official guidelines on the interpretation of classroom behaviour, teachers appear to have intuitively established priorities in diagnosing "disturbing" behaviour. Aggressive types of behaviour are generally viewed more seriously by teachers than withdrawn types of behaviour. This should come as no surprise when the socialization function of schooling is taken into consideration. Schools have traditionally been given the task of producing well-behaved, educated citizens. Any aberration is considered to be a problem. Aggressive types of behaviour are more noticeable in a classroom as they disrupt other students and they can also disrupt class progress. Withdrawn students usually only disturb themselves. They can therefore be ignored and cause little disruption to class progress. Aggressive students call for more immediate action on the part of the teacher who wishes to maintain a stable environment within the classroom.

There is general acceptance in the literature that withdrawn behaviour is more common in girls, while aggressive behaviour is more common in boys. Because teachers appear to take a more serious view of aggressive behaviour, their tendency is to refer those children manifesting aggressive behaviour for psychoeducational assessment. As the majority of referred students are subsequently diagnosed as being in need of special placement, the factor of student behaviour may be seen to be a variable in the male-female ratio of LD students.

Using the present referral criteria, we may be doing a disservice to both sexes. We may be placing boys in LD classrooms who have no other problem than that their behaviour is more boisterous than what is considered acceptable by the classroom teacher. Of perhaps greater significance is the possibility that we are depriving female students of services of which they are in need.

Although the behaviour of LD students has been well-researched, many studies have concentrated on only male behaviour. Most studies which have included female LD students have contained a ratio of males to females which is representative of the male-female ratio in the identified LD population. Because of the criteria being used by teachers to refer students, it may be that these samples of LD females and males contain only the most disabled females. If the average LD female has the potential to go unnoticed in the classroom, it can be assumed that only the more serious cases are referred for assessment. Therefore it may be that present descriptions of the LD female are not descriptions of the average female LD student. Rather, they describe the most serious examples of a female student who is potentially learning disabled.

The patterns of differential male and female behaviours are firmly established, and

are likely to remain so until such time as children are exposed to an environment where roles are not defined by sex. The priorities of teachers in establishing a hierarchy of behaviours which are in need of attention are also entrenched. However, a similar yardstick is being used for male and female behaviours, in spite of research which indicates that differences exist between the sexes in their reaction to failure. In subjecting female behaviour to closer scrutiny, it is important that researchers not implicitly accept similar guidelines for the interpretation of this behaviour as those already in place for LD males. Gilligan (1979) cautions against the tradition in research which has tended to create theories of the life cycle by using male subjects only. She contends that a more balanced conception of human development will be achieved when female experience and reactions are afforded equal attention in both theory and research.

### CHAPTER THREE – Method

This study investigates whether differential perceptions of classroom behaviour by teachers significantly affect the ratio of males to females referred for special services. For the purpose of this study, aggressive behaviour is described as male-type and withdrawn behaviour as female. The dependent variable in this study is the School Behaviour Check List (SBCL).

#### Hypotheses

##### Hypothesis 1:

A significantly greater number of males than females will be referred as being in need of special services.

##### Hypothesis 2:

In comparison with a matched group of non-referred children, a significantly greater number of referred students will exhibit stereotypic male (i.e. aggressive) behaviour.

##### Hypothesis 3:

In comparison with a matched group of referred children, a significantly greater number of non-referred students will exhibit stereotypic female (i.e. anxious) behaviour.

#### Participants

The participants are all grade four and five teachers in a large public school district in southern Ontario who agreed to complete the questionnaires. The teachers selected had submitted the name of a student in their class for psychoeducational testing between November and December 1987. I received a list of these teachers' names from the Psychology Department of the school district. The only information to which I was privy was the teacher's name and the name of that particular teacher's school.

### Procedure

The participating teachers sent in their referrals to the Psychology Department gradually over a period of six weeks. As I received the names of the teachers I sent them a letter (Appendix C) inviting them to participate in the study. The letter stated the purpose of the study as being an examination of the behavioural patterns of students with special needs. Teachers were told that they would be requested to complete two questionnaires on two particular students in their class. They were also given information on the time frame which the task would involve.

A week after receipt of the initial letter, teachers were telephoned to confirm whether or not they were willing to participate in the study. Any questions or concerns about participation were answered at this time. However, no further information regarding the purpose of the study, other than that which had been contained in the initial letter, was provided.

The second letter (Appendix C) was sent as part of a package containing two questionnaires and an envelope of cut-out numbers to facilitate random choice of students. In this letter teachers were instructed on the method of selection of the students on whom they would base their responses to the questionnaires. One questionnaire was to be completed on the student who had been referred for psychoeducational testing. The second student was to be matched for grade and sex with the referred student. Teachers were instructed to randomly draw a cut-out number from the envelope and match it to their class list. If the student who was selected in this way was matched by grade and sex with the referred student and was not experiencing serious academic problems, teachers should proceed to complete the questionnaire on this student. If a match did not occur or the selected student was experiencing serious academic problems, teachers were



Instructed to proceed downward on their class list to the first student to whom the above conditions applied.

Teachers were cautioned to follow selection instructions carefully. They were also told to complete one questionnaire and seal it before proceeding to the second questionnaire. In this way they would avoid making direct comparisons between the checklists. A telephone number was provided for teachers who experienced any difficulties with the procedure. Two teachers telephoned to clarify some points related to the random sampling of students.

Seventy-nine teachers were sent the introductory letter inviting them to participate in the study. Fifty-one teachers agreed to participate and 35 returned the questionnaires within the suggested two-week period. The remaining sixteen teachers were telephoned a second time requesting them to return the material. As a result a further 11 were returned. Thus, 46 teachers in all completed the questionnaires. Data from six teachers were judged invalid. Five of these teachers had failed to match the students by sex. The sixth person had placed most of her answers between the answer boxes. Of the other five, two teachers were willing to complete the incorrect questionnaire a second time. Thus there are 42 teachers in the sample, 21 were female and 21 male.

These 42 participating teachers each completed a questionnaire on a student whom they had referred for psychoeducational testing. Each teacher also referred a matching student. After analysis of the data had begun, I observed that another teacher had failed to match the pair of students by sex. This teacher had submitted checklists for a referred male and a non-referred female. The decision was made to exclude the non-referred student, thus making a total of 28 referred males and 27 non-referred males. Questionnaires were completed on 14 referred females, 14 non-referred females, 28

referred males and 27 non-referred males. In the sample, 33% of the students were female while 67% were male.

### Variables

The Dependent Variable. The dependent variable in this study is the School Behaviour Check List (Miller, 1972). This checklist is a modified version of the Pittsburgh Adjustment Survey Scales (PASS), which were developed by Ross, Lacey, and Parton (1965) as an objective evaluation of the social behaviour of elementary school-age boys. The observations of classroom teachers were the basis for the creation of these scales.

Due to the bulk of research indicating that most maladaptive behaviour of children can be accounted for in aggression or conduct deviant behaviour and withdrawn or personality-deviant behaviour (Peterson, 1961; Quay and Quay, 1965), it was predicted that these would be the two principal behavioural components of the PASS. It also seemed likely that a component of "good adjustment" or prosocial behaviour would be included. Development of the PASS involved three main steps, (a) obtaining an appropriate item pool, (b) reducing the item pool through the use of an extreme-group procedure, and (c) factor analyzing the reduced item pool in order to obtain scales with low interdependence.

An initial item pool of 140 statements that seemed applicable to boys aged 6 to 12 and related to the dimensions of aggressive, withdrawn, and prosocial behaviour was reduced to 111 statements. Positively worded good-adjustment items were included with positively worded poor-adjustment items. The statements were ordered so that consecutive items in the questionnaire were not in similar behavioural dimensions. Raters were asked to

denote whether a particular statement was not descriptive (0), somewhat descriptive (1), or definitely descriptive (2) of a particular student.

In order to reduce the item pool, 202 boys in seven elementary schools were categorized by school principals into one of three groups—withdrawn, aggressive, or well-adjusted. The 202 boys, distributed almost equally over grades 1-6, were categorized in this manner, 61 boys in the aggressive group, 81 in the good-adjustment group, and 60 in the withdrawn group. The homeroom teachers were then asked to rate the behaviour of the boys on the 111-item inventory. Separate  $t$  tests were computed for each item between the aggressive group and the good adjustment group, between the withdrawn group and the good adjustment group, and between the combined groups of aggressive and withdrawn. Items discriminating between groups beyond the .01 level of significance were assigned to the appropriate scales. On this basis 46 items were assigned to the aggressive scale, 22 items to the withdrawn scale, and 26 items to the prosocial scale. Seventeen items were unassigned and thus discarded. The mean item-grade correlations were: aggressive-behaviour scale, .02, withdrawn-behaviour scale, .04, prosocial-behaviour scale, .05. The highest item-grade correlation was -.17. Thus, items were independent of age for the levels sampled.

In order to perform a factor analysis, a random sample of protocols was obtained on 209 elementary-school-age boys, representing a wide socio-economic range in both urban and rural settings. Based on a principal components analysis, a normalized varimax procedure was used to rotate the five extracted factors to a simple structure. Factor V contained only one item with a loading in excess of .50. It therefore could not be interpreted and was discarded. The criterion for item assignment was based on a factor loading of .40 and above on the major factor, with low loadings on the remaining three

factors. The Factor IV dimension was labelled passive-aggressive behaviour. It contains 13 items that characterize "resistive and covertly aggressive activities" (Ross et al., 1965, p. 1033). After assignment of 77 of the 94 items to one of the four factor scales, 17 unassigned items were omitted. The breakdown of the 77 items was Aggression (25 items), Passive-Aggressive (13 items), Withdrawal (19 items), and Prosocial (20 items). Split-half and test-retest reliabilities were sufficiently high for each scale to be used for both clinical and research purposes. None of the scales revealed any change related to grade level beyond that to be expected by chance.

Miller (1972) expanded the PASS instrument to measure the social behaviour of girls and boys, and to include a scale for academic disability. Miller also conducted a cross-validation of the 77 items of the Ross scales together with three other items (Items 1, 82, 83) of those scales which originally did not load on any factor. The PASS statements were kept in their original order. Fourteen LD items were substituted for the remaining unassigned items. Two anxiety items were added and became Numbers 95 and 96. The questionnaire was changed to a yes-no format. This modified format, containing 96 items, is referred to as the School Behaviour Check List (SBCL).

Each of the 3,335 elementary school teachers in the Miller sample was asked to select randomly one male and one female from his or her class in order to rate them on the SBCL. Ninety-two percent of the teachers returned at least one checklist, thus forming a sample pool of 6,131 students. Every 50th and 51st protocol was selected to form a reliability pool of 123 teachers. These teachers were asked to re-rate their students one and one-half months after the original ratings. Many of the teachers contradicted themselves in their ratings. A contradictory index was established which ranged from 0-11 possible contradictions. Using three standard deviations as an arbitrary criterion for

teacher unreliability, all protocols with three or more contradictions were removed. This operation resulted in a loss of 576 protocols, and accounted also for the withdrawal of 182 protocols for test-retest reliability. The remaining student sample was comprised of 2,627 males and 2,746 females. Demographic and intelligence variables were representative of the general population.

Using raw scores, a principal components factor analysis was performed on the male, female, and total populations. Six factors were extracted. Three independent normalized varimax rotations to simple structure were made on each population, using 4, 5, and 6 factors. A second-order factor analysis included demographic variables, teacher ratings, and SBCL scales.

A factor loading of at least .32 with nonsignificant loadings on the remaining five factors was the criterion for item assignment. If the item loaded on two factors, it was assigned either to the factor with the highest loading or to both scales if it helped to clarify the meaning of the scales. This resulted in 14 duplicate items. If an item was checked yes or no it was assigned a value of one. Means and standard deviations of raw scores for each scale were computed. Split-half and test-retest reliabilities were performed on each scale.

All six factors were retained. The withdrawal scale was renamed the Anxiety scale. It contained seven new anxiety items and eliminated six original items. The factors in the revised SBCL are Low Need Achievement, Aggression, Anxiety, Academic Disability, Hostile Isolation, and Extroversion. A scale for Total Disability was also included, thus bringing the total number of scales in the SBCL to seven. The scale for Total Disability is composed of each item (except No. 30) loading significantly on one of the six Pittsburgh factors.

The results of a  $t$  test for sex on each scale demonstrated that all scales were

significantly different except Anxiety and Hostile Isolation. Boys were rated as less well motivated academically, as being more aggressive and extroverted, and as having more academic disabilities. Therefore, although identical scales could be used for both sexes, Miller's data indicated that independent norms should be used for each sex.

Miller observed an inverse relationship between IQ and behaviour disorders. For each scale, deviant behaviour decreases as IQ increases. Most problems appear to accelerate with children who have an IQ of 90 or less. Miller also discusses other variables, for example, the extent to which behaviour ratings are dependent on individual teachers or the age of the student. He suggests that the SBCL may help to find answers to some of these fundamental questions.

Miller's SBCL provides separate rating scales for females and males. All items in the female scale use language related to a female (e.g. she, her) while items on the male scale use language related to a male (e.g. he, his). In order to simplify this procedure while at the same time eliminating sexist language I have used one scale and changed the wording of items, without changing their meaning. An example would be "He is alert in class". This sentence now reads "Alert in class".

The independent variables. The independent variables in this study are the status of the student in terms of being referred or non-referred and the gender of the student (male or female).

Coding the questionnaires. The following variables were coded from each questionnaire: gender of teacher (male or female), gender of student (male or female), status of student (referred or non-referred), and replies to the 96 questions (yes or no). The questionnaire

was coded so that the lower the score a student received on a sub-scale, the higher the level of that student on that particular behaviour. Seven questions (Q27, Q85, Q56, Q75, Q89, Q39) were recoded and values were reversed from the original coding system, due to their loading negatively on a particular scale. In Miller's version of the SBCL, some items had high loadings on more than one subscale. For the purposes of this study, the ratings were scored in such a way that an item was included on only one subscale, based on the highest factor loading from the Miller data. In this manner the 96 items on the SBCL were reduced to 92 for analysis. The number of items on each subscale was as follows: Low Need Achievement (26), Aggression (29), Anxiety (16), Academic Disability (8), Hostile Isolation (7), Extroversion (6). Appendix C shows the way in which items were combined for the SBCL subscales.

## CHAPTER FOUR – Results

### Introduction

This chapter presents the results of the data analysis for the three hypotheses formulated in the previous chapter, namely:

1. A significantly greater number of males than females will be referred for testing;
2. In comparison with a matched group of non-referred children, a significantly greater number of referred students will exhibit stereotypic male (i.e. aggressive) behaviour;
3. In comparison with a matched group of referred children, a significantly greater number of non-referred students will exhibit stereotypic female (i.e. anxious) behaviour.

In order to test hypothesis 1 a Chi<sup>2</sup> analysis was conducted. Hypotheses 2 and 3 were tested by means of analyses of variance. A multivariate test of significance was used to test for the effects of referral and gender on all sub-scales of the School Behaviour Check List.

As hypotheses 2 and 3 deal only with the Aggression and Anxiety sub-scales, the second section of the present chapter focuses on scores obtained on the remaining sub-scales. These scores, while not falling within the stated objective of this study, provide a useful view of the way that teachers perceive potential LD students.

Prior to the statistical treatment,  $p < 0.05$  was established as the probability level necessary to reject the null hypothesis.

### Hypothesis 1

Hypothesis 1 states that a significantly greater number of males than females will be referred for psychoeducational testing. Forty-two students were referred ( $n = 42$ ). The group was comprised of 14 females and 28 males. The expected number of each gender



to be referred would be 21, if there were no bias in referral practices. The computed value of chi square was 4.666. As this value of 4.666 is greater than 3.841 (value of chi square for 1 df), the null hypothesis is rejected. This result supports hypothesis 1. There is a significant difference between the number of referred males and referred females.

### Hypothesis 2

In comparison with a matched group of non-referred children, a significantly greater number of referred students (both male and female) will exhibit stereotypic male (i.e. aggressive) behaviour.

TABLE 2  
MEANS AND STANDARD DEVIATIONS ON THE AGGRESSION SUBSCALE

		Females	Males	Total
	n	14	28	42
Referred	$\bar{x}$	52.57	47.68	49.31
	s.d.	6.65	8.75	8.36
	n	14	27	41
Non-referred	$\bar{x}$	55.43	53.48	54.15
	s.d.	3.50	5.63	5.05
	Total	$\bar{x}$	54.00	50.53
	s.d.	5.42	7.88	

In Table 2, a higher score indicates a lower level of Aggression. Accordingly, the referred group has a higher level of rated aggression (49.31) than the non-referred group (54.15). The highest score (47.68) is for referred boys. The next highest score is for referred girls. Non-referred females are lower on the aggression scale than referred females, referred males, and non-referred males. However, as shown in Table 3, the interaction effect on the analysis of variance is not significant.

As predicted in hypothesis 2, Table 3 demonstrates significant effects for gender and referral on the Aggression subscale. Referred students were judged to be more aggressive than non-referred students, and males were judged to be more aggressive than females. Within each gender, the relationships between aggression ratings and referral is the same. That is, higher aggression ratings are associated with referred students.

TABLE 3  
ANALYSIS OF VARIANCE BY GENDER AND REFERRAL EFFECT

Source of Variance	df	MS	F
gender	1	216.99	4.727*
referral	1	347.84	7.578 <sup>†</sup>
gender/referral	1	40.25	0.876
error	79	45.90	

\* $p < .05$

<sup>†</sup> $p < .01$

### Hypothesis 3

The third hypothesis states that in comparison with a matched group of referred children, a significantly greater number of non-referred students will exhibit stereotypic female (i.e. anxious) behaviour.

Contrary to the expectation of hypothesis 3, the non-referred group scored significantly lower on the Anxiety subscale than the referred group. Referred males and referred females have higher scores than both non-referred males and females. As shown in Table 5, this difference is statistically reliable.

**TABLE 4**  
**MEANS AND STANDARD DEVIATIONS ON THE ANXIETY SUBSCALE**

		Females	Males	Total
Referred	$\bar{x}$	26.86	27.64	27.38
	s.d.	3.06	5.09	4.94
Non-referred	$\bar{x}$	31.00	30.74	30.83
	s.d.	2.54	4.00	2.43
Total	$\bar{x}$	28.93	29.16	
	s.d.	3.47	4.27	

The marginal means in Table 4 show the referred to be higher on Anxiety than the non-referred. This result is inconsistent with hypothesis 3. Gender bore no significance on Anxiety scores. Nor was there any interaction between gender and referral.

TABLE 5  
ANALYSIS OF VARIANCE OF ANXIETY BY GENDER AND REFERRAL EFFECT

Source of Variance	d.f.	MS	F
gender	1	1.29	<1.00
referral	1	243.16	18.16*
gender/referral	1	5.06	<1.00
error	79	13.38	

\* $p < 0.01$

#### Other Analyses

The manner in which teachers rated students on the remaining sub-scales provides a valuable view of teachers' perceptions of LD students. The means and standard deviations for these four subscales (Low Need for Achievement, Academic Disability, Hostile Isolation, and Extroversion) are shown in Table 6 and the analysis of variance results for these data are reported in Table 7.

The means for referred students on all subscales were different than for the non-referred students, except on Extroversion. The questionnaire was coded so that the lower the

TABLE 6

MEANS AND STANDARD DEVIATIONS ON LOW NEED ACHIEVEMENT, ACADEMIC  
DISABILITY, HOSTILE ISOLATION, AND EXTROVERSION

Variable		Female	Male	Total
Low Need Achievement	Referred	37.79	36.32	36.81
		2.23	3.01	2.83
	Non-referred	39.86	39.19	39.42
		0.95	1.64	1.47
	Total	38.82	37.73	
		1.98	2.81	
Academic Disability	Referred	10.71	11.07	10.95
		1.86	2.14	2.04
	Non-referred	15.29	15.63	15.51
		1.90	1.04	1.38
	Total	13.00	13.31	
		3.00	2.85	
Hostile Isolation	Referred	11.93	12.21	12.12
		1.44	1.71	1.61
	Non-referred	13.00	13.07	13.05
		1.30	1.14	1.18
	Total	12.46	12.64	
		1.45	1.51	
Extroversion	Referred	8.50	7.75	8.00
		1.35	1.58	1.53
	Non-referred	6.93	7.44	7.27
		0.27	0.80	0.71
	Total	7.71	7.60	
		1.24	1.26	

score a student received on a sub-scale, the higher the level of that student on that particular behaviour. In this case scores for non-referred students were higher than for referred students. As was discussed in Chapter 3, some items loaded on two scales. When this occurred the highest factor loading from Miller (1972) was used to assign an item to a subscale. As a result the Extroversion subscale had 6 of its 12 original items dropped and included on other subscales. The items which were removed could be construed as having negative connotations (e.g. "Tries to be the centre of attention"). Of the remaining six items, three were positive in connotation (e.g. "Seems as happy as most children"). Thus the Extroversion subscale in large part measures positive classroom behaviours.

It is clear from the analysis of variance results shown in Table 7 and the descriptive statistics in Table 6 that on all four of these subscales teachers rated the referred students quite differently from the non-referred students. In comparison with non-referred students, students referred to the psychologist for assessment were seen as having less need for achievement, greater academic disability, more hostile isolation, and less positive qualities of extroversion. The results from the earlier analyses indicate that referred children are also rated as more aggressive and more anxious.

On the four subscales, there was a gender effect on rating only for the Low Need Achievement subscale. This result indicates that the males were rated as having a lower need for achievement than the females. There was only one significant interaction effect on all of the subscales. This occurred (see Tables 6 and 7) on the Extroversion subscale. This result is attributed to a larger difference in the extroversion scores for females than males. The interaction is graphically displayed in Figure 1. The interaction effect of referral by gender on the Extroversion scores of girls was stronger than for boys. In other words,

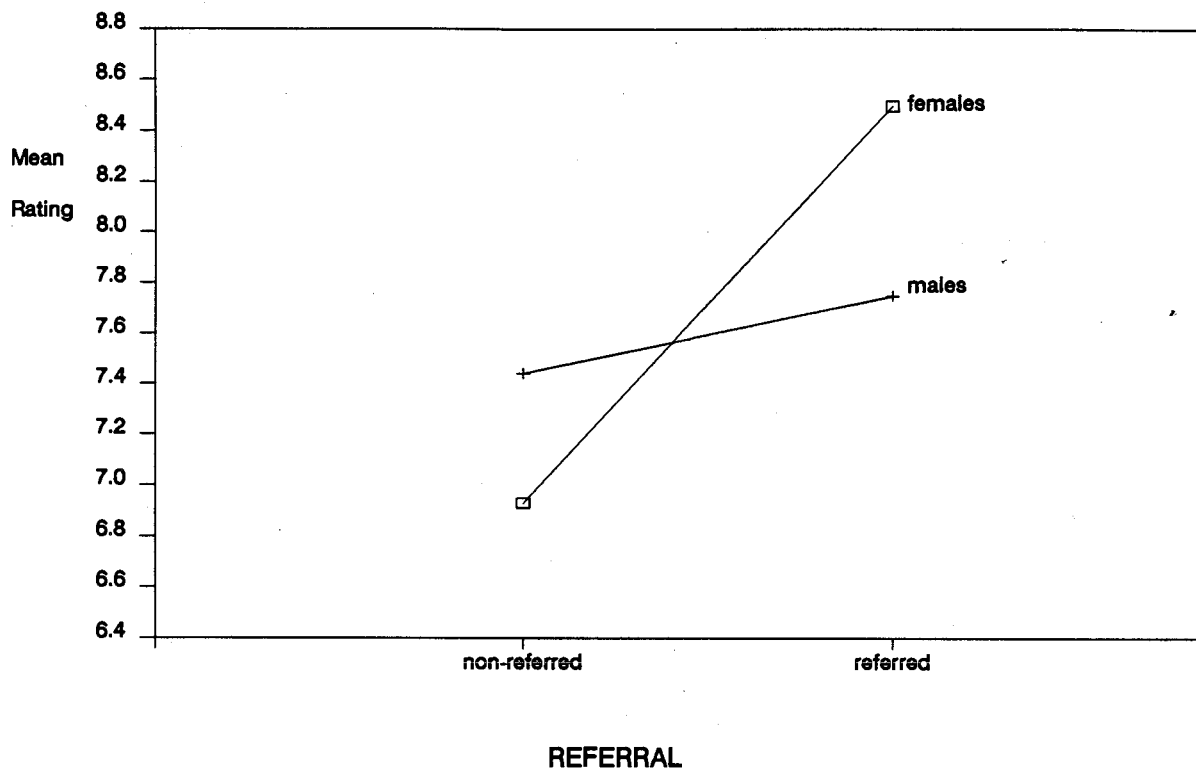
TABLE 7

ANALYSES OF VARIANCE OF LOW NEED ACHIEVEMENT, ACADEMIC DISABILITY,  
HOSTILE ISOLATION, AND EXTROVERSION BY REFERRAL AND GENDER EFFECT

	Subscale	df	MS	F
Referral	Low Need Achievement	1	112.96	22.86*
	Academic Disability	1	386.58	125.23*
	Hostile Isolation	1	17.30	8.46*
	Extroversion	1	16.34	11.91*
Gender	Low Need Achievement	1	21.17	4.28*
	Academic Disability	1	2.28	0.73
	Hostile Isolation	1	0.60	0.29
	Extroversion	1	0.25	0.19
Gender/ Referral	Low Need Achievement	1	2.91	0.59
	Academic Disability	1	0.00	0.00
	Hostile Isolation	1	0.21	0.10
	Extroversion	1	7.43	5.42*
Error	Low Need Achievement	79	4.94	
	Academic Disability	79	3.09	
	Hostile Isolation	79	2.04	
	Extroversion	79	1.37	

\*denotes significance at  $p < 0.05$  level

**FIGURE 1**  
**GENDER X REFERRAL INTERACTION ON THE EXTROVERSION SUBSCALE**



while there was little difference in extroversion seen by these teachers when they rated boys, there was a bigger difference for girls. Referred girls were seen to have the least positive qualities of extroversion of all groups, while non-referred girls were seen to have the most positive qualities.

### Summary

This chapter has presented the following findings:

1. A significantly greater number of males than females were referred as being in need of special services.



2. Of the students referred, a significantly greater number were rated high on aggression than a comparable group of non-referred students.
3. A significantly higher level of Anxiety was not observed in the non-referred students over a comparable group of referred students.
4. Referral had a significant effect on how teachers rated students on all six sub-scales of the School Behaviour Check List.
5. Gender had a significant effect on how teachers scored students on two sub-scales: Low Need Achievement and Aggression.
6. A significant interaction between referral and gender was observed on the Extroversion subscale.

## CHAPTER FIVE – Discussion

This chapter expands upon the results presented in the previous chapter. I will discuss the results of the three hypotheses and the results of other analyses undertaken.

Subsequent to this initial discussion, some limitations of the study will be presented.

Finally, I will discuss the implications of the study for education and research.

### Hypothesis 1

Hypothesis 1 stated that a significantly greater number of males than females would be referred for testing. This hypothesis was confirmed. This result strongly supports findings in the literature on the ratios of LD females to males (Lerner, 1981; Kirk & Elkins, 1975). However, ratios in previous studies have generally been more disparate (e.g. 4-6 males to 1 female, or 3 males to 1 female).

The result in this study very closely approximates numbers in the school district in which it was conducted. The gender ratio of assessments completed in the elementary section of that school district for 1986-87 was male 68.5% and female 31.5%. This is approximately a two to one ratio and is very close to the 66.7% male and 33.3% female ratio of this sample.

The male to female ratio of two to one in the LD population remains extremely imbalanced. However, given that many of the studies reviewed here date from 1966 to 1981, the present finding may indicate a change in gender pattern. Perhaps increased awareness of sex stereotyping in our society has had an impact on stereotyping of student behaviour by teachers.

## Hypothesis 2

The data analysis confirms hypothesis 2, that a significantly greater number of referred students would exhibit stereotypic male (i.e. aggressive) behaviour. Teachers gave referred students significantly higher scores on the Aggression scale. The scores, in descending order, were: referred males, referred females, non-referred males and non-referred females.

These results suggest two possibilities: either potential LD students have a higher level of aggression than normal students, or teachers tend to refer students who demonstrate aggressive behaviour.

Whether behavioural problems are inseparably connected to learning disabilities or merely a product of a child's frustration with learning is still open to debate. What is clear, however, is that teachers tend to associate behavioural problems with LD students (Bryan & McGrady, 1972). Among the identified LD population, aggression seems to be the major behavioural problem (Keogh, Tchir, & Windeguth-Behn, 1974).

In considering the possible relationship between learning disability and aggression, it is important to remember two points discussed in Chapter Two. First, teachers play a major role in referral (Nicholson, 1967); second, teachers tend to be extremely bothered by aggression in relation to other behavioural problems (Algozzine, Ysseldyke, & Christenson, 1983). Yet, in dealing with aggression, teachers seldom intervene with alternative instructional plans. The most common approach, rather, is to refer the aggressive child for psychoeducational testing.

In the present study, the high Aggression score of the referred group is somewhat deceiving; for while the referred *males* scored extremely high on this sub-scale, the score of the referred *females* is very close to that of non-referred males. Nonetheless, the

difference between referred and non-referred children within gender is about the same. While overall girls are seen to be less aggressive than boys, referred girls are seen to be equally more aggressive than their non-referred girl peers as referred boys are compared to their non-referred peers.

### Hypothesis 3

Hypothesis 3, that a significantly greater number of non-referred students, both male and female, would be rated as demonstrating stereotypic female-type (i.e. anxious) behaviour, was not confirmed in this study. The referred group demonstrated a significantly higher level of anxiety than the non-referred group.

As noted in Chapter Two, teachers appear to have a higher tolerance for withdrawn or anxious behaviour than for other problem behaviours (Keogh, Tchir, and Windeguth-Behn, 1974). It has been suggested that LD girls tend to exhibit withdrawn behaviour (Gilbert, 1976). As well, Caplan and Kinsbourne (1974) have shown that a girl's most acceptable alternative to school failure, as judged by her peers, is to be nice.

Together, these factors suggest that the LD girl remains hidden in a classroom (Donahue, Pearl, & Bryan, 1983). Her behaviour does not disrupt the classroom atmosphere and so she largely escapes the teacher's attention. She becomes quite adept at hiding her learning disability and slips through the school system without her learning problems being recognized.

In this study, referred female and male Anxiety scores were quite close, as were scores within the non-referred group. The referred girls had a slightly higher score than the referred boys, whereas in the non-referred group the boys had a higher score than the girls. Girls in neither group were perceived to exhibit very high levels of anxiety. Keeping

in mind that there were twice the number of referred boys as girls in this study, the question remains: Is LD a predominantly male disorder, or are we failing to refer potentially learning disabled girls? Certainly anxious or withdrawn behaviour does not appear to be the factor precluding the girls from referral.

In the literature describing the formulation of the School Behaviour Check List (Ross, Lacey, & Parton, 1965; Miller, 1972), the terms withdrawn and anxious are used interchangeably. However, individual items in the Anxiety sub-scale (Appendix D) suggest a differentiation between what are loosely described as withdrawn and anxious behaviours—for example, the difference between "Slow to make friends" and "Hands shake when called on to recite". The latter seems to indicate a severe emotional problem. When Leinhardt, Seewald and Zigmond (1982) speak of girls "playing school" better than boys, they are presumably speaking of girls who are pleasant and helpful in the classroom and to whom the description "Slow to make friends" might apply.

Bryan's extensive research on the behaviour of LD students (1974) found extreme ratings for girls on social rejection. Her results indicate that females diagnosed LD have more extreme peer-related behaviour problems than LD males. This finding was not replicated in this study. This may in part be explained by the fact that Bryan's subjects had already been diagnosed LD. However, given the high correlation of teacher referral and diagnosis (Ysseldyke & Algozzine, 1979), this factor should not have affected the results to a great extent. The higher male-female ratio in Bryan's study (3:1 as compared to 2:1 in the present study) may account for more extreme problems among her referred female subjects.

### Other Analyses

Teachers perceived referred and non-referred students differently on all six subscales. This result supports much of the research which has found differences in behaviour between LD and non-LD students (Bryan & McGrady, 1972; McKinney, McLure, & Feagans, 1982). In this study referred students were found to be more aggressive and more anxious, to have lower need for achievement, greater academic disability, more hostile isolation, and less positive ratings on extroversion. The central question of whether differential behaviours result from or accompany a learning disability remains. This is a difficult problem to overcome, given that by the time a learning disability is diagnosed, several years of failure in learning may have elapsed.

Low Need Achievement was the only subscale in which there was a gender effect. Males were observed to have a significantly lower need for achievement than females. This subscale generally describes the child with low motivation and includes such items as "Fails to carry out tasks", and "Lacks the ambition to do well in school". While not directly disruptive to class management, this type of behaviour would probably receive much teacher attention. In this study boys were not significantly more aggressive than girls. Perhaps the ratings on Low Need Achievement indicate less aggressive ways that boys in this study used to gain teacher attention. The "playing school" behaviours that have been reported as being more prevalent in girls (Leinhardt, Seewald, & Zigmond, 1982) may also have influenced this significant effect of gender on Low Need Achievement. It is possible that this result may indicate a change in pattern on the part of male students. Instead of acting in an outwardly aggressive manner, they are adopting attention-seeking behaviours which are more acceptable to teachers.

The only significant interaction was on the Extroversion subscale. The interaction of gender and referral affected how teachers rated students on this subscale. Referred girls were rated the least positively. As was explained in Chapter 4, the Extroversion subscale was seen to be mainly positive in connotation. Bryan (1974) reported that LD girls received higher ratings on social rejection. While the Extroversion subscale does not contain items on social rejection, it can be speculated that girls who are not happy or friendly would also be rated high on social rejection by their peers. There was a much greater difference between the ratings for referred and non-referred girls than for referred and non-referred boys. Referred girls seem to exhibit the types of behaviour which, while not disruptive to the teacher, make these girls less desirable classmates. This result further supports the argument that it may be necessary to use different guidelines in diagnosing learning disabilities in females than have traditionally been used for males.

#### Limitations of the Study

Probably the greatest limitation of this study is the lack of certainty that the referred students would eventually be placed in an LD class. Due to the teachers having been requested to complete the questionnaire on a student who was experiencing academic problems, the possibility of future LD placement is high. However, if for example the behaviour of the student was perceived to be a greater hindrance to progress than was academic capability, the student would more likely be placed in a behavioural class setting.

The Anxiety sub-scale of the School Behaviour Check List may not be the best means of classifying the behaviour of those girls who are possibly learning disabled but have not been identified as such.

### Implications for Research

This study has confirmed a significant disparity in the female-male ratio of referred students. As discussed in Chapter Two, researchers must exercise caution in generalizing for LD females and males from studies which contain males only or a small proportion of females. As in all research with male and female participants, differential attributes and development of both genders must be taken into account. Systematic attention to these factors in research will encourage a more balanced conception of human development.

Research must focus more attention on LD females and on females who may potentially be learning disabled. This type of focus may help to clarify whether or not female LD students differ in their behaviour from male LD students.

One of the greatest challenges in the field of LD is to continue research into the behavioural patterns of LD students, particularly the question of gender differences. Further advances in this field will help determine whether behavioural problems necessarily accompany LD or are the result of frustration with the learning process.

### Implications for Education

The first question raised in this study concerns the imbalance in the male-female ratio of LD students. Although a significant difference was observed in the number of referrals from each gender, the ratio of 2 males to 1 female is lower than in most studies of LD students (Kirk & Elkins, 1975; McCarthy & Paraskevopoulous, 1966).

This result is perhaps a positive sign, as it may indicate an increasing awareness by teachers of LD girls. And yet, there remains an enormous disparity, a disparity far too great to be ignored or explained away by facile notions of innate sexual difference.



As discussed in Chapter Two, different teacher reactions to female and male students may significantly influence referral ratios. There is much evidence to suggest that girls are awarded higher marks (McCandless, Roberts, & Starres, 1972), that girls are described in less negative terms (Dalta & Schaeffer, 1968), and that student-teacher contact depends on student gender and the subject being taught (Leinhardt, Seewald, & Engel, 1979). As well, it has been argued that the tendency of teachers to give more attention to boys is firmly entrenched in school systems (Sadker & Sadker, 1985).

Teacher education must address these issues. In particular, we must work to eliminate bias in student-teacher contact. In this way we can be more confident that the ratio of LD females to males will be more representative of the true state of affairs.

Whether aggressive behaviour is a result of or an accompanying factor to LD is a question demanding further research. In any case, teachers must be encouraged to make interventions—educational and behavioural—when a student presents aggressive behaviour. As Ysseldyke and Algozzine (1983) suggest, "... it is time for a philosophical shift; a shift from the presumption that academic problems result from pupil problems to a recognition that students exhibit academic problems in an educational context under a set of conditions" (p. 192). Thus, perhaps, referral can be pre-empted. More importantly, teachers may come to recognize whether behaviour is the main problem, an accompanying problem of LD, or simply the product of a child's frustration with the inability to learn.

We have seen that anxiety was significantly higher in referred students. The present study indicates that teachers view anxious behaviour as a serious matter, and that they observe almost equal levels of anxiety in both female and male students. The latter observation

contradicts previous research. Indeed, girls have generally been observed to exhibit more withdrawn or anxious behaviour than boys (Werry & Quay, 1971; Gilbert, 1976).

These results indicate that teachers are recognizing anxious behaviour in males as well as females. However, teachers must also be encouraged to examine their preconceptions of students, in order that stereotypic notions do not prevent female students from receiving needed help from the educational establishment. Callahan's observation on the factors affecting the achievement of gifted female students is equally relevant to the treatment of LD girls: "Changes in our adult behaviours will occur only if we first recognize our history of discriminatory differential treatment" (Callahan, 1986, p. 114).

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**APPENDIX A – Initial Letter**

Dear (teacher's name),

I am conducting a study of the behavioural patterns of students with special needs. To enable me to conduct this study, I am requesting the participation of grades four and five teachers in your school district.

Your participation would entail your completing a questionnaire on two students in your class. This would involve a maximum of 45 minutes of your time. I fully understand the many demands on your time, especially at this time of year, and I would greatly appreciate your help in gaining further insights into the behavioural patterns of special needs students.

About a week after receipt of this letter you will receive a telephone call asking whether or not you are willing to participate in the study. At this time any concerns which you may have pertaining to the task will be answered. Should you be willing to participate, two questionnaires will be forwarded to you and you will be asked to complete them as soon as possible and return them to the address provided.

Again, I appreciate your willingness to be involved in this study. All results of the study will be provided you at a presentation which will be scheduled for the fall of 1988.

Yours sincerely

**Maeve Moran**

**APPENDIX B – Follow-up Letter**

Dear (teacher's name),

I appreciate your taking the time to complete the enclosed questionnaires as part of my study on the behavioural patterns of special needs students.

The first part of your task involves the selection of two students from your class. I would ask that you select those students before you read the questionnaire. As the focus of this study is the special needs student, you are being asked to complete the questionnaire on any one student in your class whom you have observed to be experiencing the type of academic problems serious enough to interfere with future educational progress. In selecting this child, you are requested to nominate a student whom you have referred to an IPRC this academic year.

It is necessary that you select the second student randomly. In order to assist you in this random selection, I am enclosing a small envelope containing slips of paper which are numbered 1 to 35. If your class size is lower than 35, remove the extra numbers from the envelope. Number your class list. Select a number from the envelope. Match this number with the number on your class list. If this student is matched for sex and grade with the referred student and is not experiencing any serious academic problems, this should be the second student on whom you conduct the questionnaire. If this student is not matched for sex and grade with the referred student or is experiencing serious academic problems, select the next student to whom the above conditions apply as you proceed downward on your class list. I would request that you follow these instructions carefully as random selection is very important to this study.

When answering the questionnaires please fill in all items. I would ask that you complete the first questionnaire and seal it in its individual envelope before beginning the second

questionnaire. In this way you will avoid making direct comparisons between the checklists. Envelopes labelled 'referred student' and 'non-referred student' have been provided for the completed questionnaires. As soon as the second questionnaire is completed, please seal it in its individual envelope also. Then place both small envelopes in the large envelope provided.

I would appreciate your returning the questionnaires as soon as possible. Thank you very much for your participation.

Yours sincerely

Maeve Moran

### APPENDIX C – School Behaviour Check List

Teacher's Name: \_\_\_\_\_

Teacher's Sex:

female

School Name: \_\_\_\_\_

male

School Tel. No.: \_\_\_\_\_

Student's Sex:

female

School Address: \_\_\_\_\_

male

Directions: Read EACH statement and decide if it describes the child selected for rating. If it does, check YES. If the statement does not describe the child, check NO. It is IMPORTANT that you check each statement. If you are in doubt, check the answer which is truest.

	YES	NO		YES	NO
1. Friendly	<input type="checkbox"/>	<input type="checkbox"/>	22. Does homework	<input type="checkbox"/>	<input type="checkbox"/>
2. Tends to give up when given something hard to finish	<input type="checkbox"/>	<input type="checkbox"/>	23. Teases other children	<input type="checkbox"/>	<input type="checkbox"/>
3. Interrupts whomever is speaking	<input type="checkbox"/>	<input type="checkbox"/>	24. Afraid of making mistakes	<input type="checkbox"/>	<input type="checkbox"/>
4. Penmanship at least one grade level below age expectation	<input type="checkbox"/>	<input type="checkbox"/>	25. Bossy with other children	<input type="checkbox"/>	<input type="checkbox"/>
5. Starts fighting over nothing	<input type="checkbox"/>	<input type="checkbox"/>	26. Easily upset by changes in the immediate environment	<input type="checkbox"/>	<input type="checkbox"/>
6. A helpful child	<input type="checkbox"/>	<input type="checkbox"/>	27. Confident	<input type="checkbox"/>	<input type="checkbox"/>
7. Alert in class	<input type="checkbox"/>	<input type="checkbox"/>	28. Uses abusive language toward other children	<input type="checkbox"/>	<input type="checkbox"/>
8. Poorly coordinated when doing things with hands such as colouring or pencil work.	<input type="checkbox"/>	<input type="checkbox"/>	29. Has changeable moods	<input type="checkbox"/>	<input type="checkbox"/>
9. Reading ability at least one grade level below age expectation	<input type="checkbox"/>	<input type="checkbox"/>	30. Gives in when another child insists on doing something another way	<input type="checkbox"/>	<input type="checkbox"/>
10. Just stands around on the playground	<input type="checkbox"/>	<input type="checkbox"/>	31. Does not respect other people's belongings	<input type="checkbox"/>	<input type="checkbox"/>
11. Acts up when I'm not watching	<input type="checkbox"/>	<input type="checkbox"/>	32. Does not forget things that anger	<input type="checkbox"/>	<input type="checkbox"/>
12. Volunteers to recite in class	<input type="checkbox"/>	<input type="checkbox"/>	33. Daydreams	<input type="checkbox"/>	<input type="checkbox"/>
13. Hits and pushes other children	<input type="checkbox"/>	<input type="checkbox"/>	34. Any form of discipline infuriates this student	<input type="checkbox"/>	<input type="checkbox"/>
14. Hands shake when called on to recite	<input type="checkbox"/>	<input type="checkbox"/>	35. Likes an audience all the time	<input type="checkbox"/>	<input type="checkbox"/>
15. Finds fault with what other children do	<input type="checkbox"/>	<input type="checkbox"/>	36. Finds it hard to study	<input type="checkbox"/>	<input type="checkbox"/>
16. Approaches a difficult task with an air of defeatism	<input type="checkbox"/>	<input type="checkbox"/>	37. Likes to be in control	<input type="checkbox"/>	<input type="checkbox"/>
17. Considerate of others	<input type="checkbox"/>	<input type="checkbox"/>	38. Works well alone	<input type="checkbox"/>	<input type="checkbox"/>
18. Fails to carry out tasks (homework assignments, seat work, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	39. When angry refuses to speak to anyone	<input type="checkbox"/>	<input type="checkbox"/>
19. Lacks ambition to do well in school	<input type="checkbox"/>	<input type="checkbox"/>	40. School performance far below capabilities	<input type="checkbox"/>	<input type="checkbox"/>
20. Does things to get others angry	<input type="checkbox"/>	<input type="checkbox"/>	41. Has no friends	<input type="checkbox"/>	<input type="checkbox"/>
21. Will put up an argument when forbidden to do something	<input type="checkbox"/>	<input type="checkbox"/>	42. Behind at least one grade level due to academic difficulties	<input type="checkbox"/>	<input type="checkbox"/>
			43. Seems dull; slow to catch on	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO		YES	NO
44. Will not ask questions even when doesn't know how to do work	<input type="checkbox"/>	<input type="checkbox"/>	71. Never sticks up for self when other children are teasing	<input type="checkbox"/>	<input type="checkbox"/>
45. Fights back if another child has been asking for it	<input type="checkbox"/>	<input type="checkbox"/>	72. Threatens to hurt other children when angry	<input type="checkbox"/>	<input type="checkbox"/>
46. Never seems to be still for a moment	<input type="checkbox"/>	<input type="checkbox"/>	73. Average or above I.Q. (Intelligence Quotient)	<input type="checkbox"/>	<input type="checkbox"/>
47. Argues with me	<input type="checkbox"/>	<input type="checkbox"/>	74. Does not take orders when other children are in charge	<input type="checkbox"/>	<input type="checkbox"/>
48. Is able to concentrate on things	<input type="checkbox"/>	<input type="checkbox"/>	75. Prefers to be alone and to play alone	<input type="checkbox"/>	<input type="checkbox"/>
49. Boasts about own toughness	<input type="checkbox"/>	<input type="checkbox"/>	76. Finishes classroom assignments	<input type="checkbox"/>	<input type="checkbox"/>
50. Seems to think of self as worthless	<input type="checkbox"/>	<input type="checkbox"/>	77. Gives other children dirty looks	<input type="checkbox"/>	<input type="checkbox"/>
51. Tries to be centre of attention	<input type="checkbox"/>	<input type="checkbox"/>	78. Deliberately interrupts what is going on by asking silly questions	<input type="checkbox"/>	<input type="checkbox"/>
52. "Drags feet" when requested to do something	<input type="checkbox"/>	<input type="checkbox"/>	79. Slow in making friends	<input type="checkbox"/>	<input type="checkbox"/>
53. Accepts my suggestions	<input type="checkbox"/>	<input type="checkbox"/>	80. Seems as happy as most children	<input type="checkbox"/>	<input type="checkbox"/>
54. Sulks when things go wrong	<input type="checkbox"/>	<input type="checkbox"/>	81. Finds fault with instructions given by adults	<input type="checkbox"/>	<input type="checkbox"/>
55. Becomes frightened easily	<input type="checkbox"/>	<input type="checkbox"/>	82. Seems unconcerned when misbehaving	<input type="checkbox"/>	<input type="checkbox"/>
56. Resents the most gentle criticism of work	<input type="checkbox"/>	<input type="checkbox"/>	83. Cries easily	<input type="checkbox"/>	<input type="checkbox"/>
57. Distractible, can't concentrate	<input type="checkbox"/>	<input type="checkbox"/>	84. Afraid of strange adults	<input type="checkbox"/>	<input type="checkbox"/>
58. Able to see the bright side of things	<input type="checkbox"/>	<input type="checkbox"/>	85. Self-confident	<input type="checkbox"/>	<input type="checkbox"/>
59. Fights with smaller children	<input type="checkbox"/>	<input type="checkbox"/>	86. Will slam a door or bang a desk when angry	<input type="checkbox"/>	<input type="checkbox"/>
60. Spelling performance at least one grade level below age expectation	<input type="checkbox"/>	<input type="checkbox"/>	87. Acts in a "dare-devil", fearless manner	<input type="checkbox"/>	<input type="checkbox"/>
61. Fearful of being hurt at play	<input type="checkbox"/>	<input type="checkbox"/>	88. Has difficulty speaking clearly when excited or upset	<input type="checkbox"/>	<input type="checkbox"/>
62. Stubborn	<input type="checkbox"/>	<input type="checkbox"/>	89. Has "chip on shoulder"	<input type="checkbox"/>	<input type="checkbox"/>
63. Never speaks up when there is every right to be angry	<input type="checkbox"/>	<input type="checkbox"/>	90. Becomes embarrassed easily	<input type="checkbox"/>	<input type="checkbox"/>
64. Interested in schoolwork	<input type="checkbox"/>	<input type="checkbox"/>	91. Bright but doesn't apply self (Under Achiever)	<input type="checkbox"/>	<input type="checkbox"/>
65. Tries to get other children into trouble	<input type="checkbox"/>	<input type="checkbox"/>	92. Disturbs other children with boisterous behaviour	<input type="checkbox"/>	<input type="checkbox"/>
66. Does things just to attract attention	<input type="checkbox"/>	<input type="checkbox"/>	93. Behind at least two grades due to academic difficulties	<input type="checkbox"/>	<input type="checkbox"/>
67. Never fights back even if someone hits first	<input type="checkbox"/>	<input type="checkbox"/>	94. Arithmetic skill at least one grade below age expectation	<input type="checkbox"/>	<input type="checkbox"/>
68. Prefers to be with an adult than to play with children	<input type="checkbox"/>	<input type="checkbox"/>	95. Much anxiety - Afraid of such things as storms, death, injury, war (considered phobic)	<input type="checkbox"/>	<input type="checkbox"/>
69. Popular with classmates	<input type="checkbox"/>	<input type="checkbox"/>	96. Frequent headaches, stomach aches or other non-specific physical complaints	<input type="checkbox"/>	<input type="checkbox"/>
70. Does things which are normal for much younger children	<input type="checkbox"/>	<input type="checkbox"/>			

**APPENDIX D – Item Content of the Six Subscales of the School Behaviour Check List****Scale 1: Low Need Achievement**

- 18. Fails to carry out tasks (homework assignments, seat work, etc.)
- 19. Lacks the ambition to do well in school
- 36. Finds it hard to study
- 57. Distractible; can't concentrate
- 2. Tends to give up when given something hard to finish
- 33. Daydreams
- 16. Approaches a difficult task with an air of defeatism
- 40. School performance far below capabilities
- 52. "Drags feet" when requested to do something
- 44. Will not ask questions even when doesn't know how to do work
- 82. Seems unconcerned about own misbehaviour
- 8. Poorly coordinated when doing things with hands such as colouring or pencil work
- 91. Bright but doesn't apply self (Under Achiever)
- 70. Does things which are normal for much younger children
- 53. Accepts my suggestions
- 69. Popular with classmates
- 27. Confident
- 85. Self-confident
- 12. Volunteers to recite in class
- 6. A helpful child
- 38. Works well alone

- 22. Does homework
- 7. Alert in class
- 48. Is able to concentrate on things
- 64. Interested in schoolwork
- 76. Finishes classroom assignments

**Scale 2: Aggression**

- 20. Does things to get others angry
- 5. Starts fighting over nothing
- 37. Likes to be in control
- 65. Tries to get other children into trouble
- 66. Does things just to attract attention
- 51. Tries to be centre of attention
- 13. Hits and pushes other children
- 21. Will put up an argument when forbidden to do something
- 92. Disturbs other children with boisterous behaviour
- 25. Bossy with other children
- 72. Threatens to hurt other children when angry
- 89. Has "chip on shoulder"
- 15. Finds fault with what other children do
- 35. Likes an audience all the time
- 77. Gives other children dirty looks
- 86. Will slam a door or bang a desk when angry
- 47. Argues with me

- 62. Stubborn
- 23. Teases other children
- 28. Uses abusive language towards other children
- 59. Fights with smaller children
- 34. Any form of discipline infuriates this student
- 87. Acts in a "dare-devil" fearless manner
- 11. Acts up when I'm not watching
- 49. Boasts about own toughness
- 3. Interrupts whomever is speaking
- 54. Sulks when things go wrong
- 81. Finds fault with instructions given by adults
- 78. Deliberately interrupts what is going on by asking silly questions

### Scale 3: Anxiety

- 55. Becomes frightened easily
- 26. Easily upset by changes in the immediate environment
- 24. Afraid of making mistakes
- 83. Cries easily
- 90. Becomes embarrassed
- 84. Afraid of strange adults
- 95. Much anxiety—afraid of such things as storms, school, death, injury, war  
(considered phobic)
- 61. Fearful of being hurt at play
- 88. Difficulty speaking clearly when excited or upset



- 14. Hands shake when called on to recite
- 79. Slow in making friends
- 50. Seems to think of self as worthless
- 75. Prefers to be alone and to play alone
- 96. Frequent headaches, stomach aches or other non-specific physical complaints
- 10. Just stands around in playground
- 68. Prefers to be with an adult rather than to play with children

#### **Scale 4: Academic Disability**

- 9. Reading ability at least one grade level below age expectation
- 42. Behind at least one grade level due to academic difficulties
- 60. Spelling performance at least one grade level below age expectation
- 94. Arithmetic skill at least one grade level below age expectation
- 93. Behind at least two grades due to academic difficulties
- 43. Seems dull; slow to catch on
- 4. Penmanship at least one grade level below age expectation
- 73. Average or above I.Q. (Intelligence Quotient)

#### **Scale 5: Hostile Isolation**

- 71. Never sticks up for self when other children are teasing
- 67. Never fights back even if someone hits first
- 63. Never speaks up when there is every right to be angry
- 41. Has no friends
- 31. Does not respect other people's belongings

- 74. Does not take orders when other children are in charge
- 32. Does not forget things that anger

**Scale 6: Extroversion**

- 1. Friendly
- 80. Seems as happy as most children
- 46. Never seems to be still for a moment
- 58. Able to see the bright side of things
- 56. Resents the most gentle criticism of work
- 39. When angry refuses to speak to anyone