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Social and Emotional Functioning of Children with Learning Disabilities: Does Special Education Placement Make a Difference?

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Children with learning disabilities in four types of special education settings were compared in terms of social acceptance, number of friends, quality of relationship with best friends, self-concept, loneliness, depression, social skills, and problem behaviors. Two of the placements (In-Class Support and Resource Room) were for children with mild to moderate learning disabilities and involved between 30 and 90 minutes of special education per school day. The other two placements (Inclusion Class and Self-Contained Special Education Class) were designated for children with severe learning disabilities and involved at least a half-day of special education. Children in the more inclusive placements had more positive social and emotional functioning. Children receiving In-Class Support were more accepted by peers, had higher self-perceptions of mathematics competence, and fewer problem behaviors than children receiving Resource Room Support. Children in Inclusion Classes had more satisfying relationships with their best school friends, were less lonely, and had fewer problem behaviors than children in Self-Contained Special Education Classes.

Despite the significant practical importance, the controversy over the degree to which special education placement has an impact on the social and emotional functioning of children with learning disabilities (LD) has not been resolved. An assumption espoused by proponents of full inclusion is that students with LD can benefit socially and emotionally from more inclusive education placements due to the opportunities to make friends with normally achieving students. Furthermore, these students will feel less stigmatized, be better liked and accepted, and will have more positive self-perceptions, than will students with LD in special education classes (Gartner & Lipsky, 1987; Stainback & Stainback, 1996). Others have claimed that full inclusion can avoid the harmful emotional effects of exclusion from general classroom settings, including loneliness and depression (Bak, Cooper, Dobroth, & Siperstein, 1987; Leondari, 1993; Stainback & Stainback, 1996).

Early empirical studies that explored the relative impacts of special education placements generally focused on comparisons between self-contained and general education classroom placement settings. These studies yielded mixed findings, with some studies favoring self-contained special education classes and other studies favoring full inclusion into the general classroom. In their meta-analytic review comparing the academic and social functioning of exceptional children in special versus general classroom placement, Carlberg and Kavale (1980) noted that studies indicated that the overall finding of the superiority of integration did not necessarily apply to students with LD. Specifically, students with LD in special education classrooms fared better on academic and social outcome measures than students with LD in general education classrooms. Wang and Baker's (1985–1986) meta-analysis, however, showed that mainstreamed students with disabilities made greater gains on achievement and self-concept measures than did their counterparts in self-contained settings. Because most of the sample was identified as educable mentally retarded (53 percent) and only a few were LD (3 percent), it is difficult to draw valid conclusions from this study.

Since Wang and Baker's (1985–1986) meta-analysis and following the emergence of the Regular Education Initiative and the inclusive schools movement, several new types of special education placements for children with LD have been established. These new types of placements generally question the appropriateness of educating children with LD in settings separate from the general education classroom (see Fuchs & Fuchs, 1994; Gartner & Lipsky, 1987; Kauffman, 1993, for a review of this literature). These new types of placements include: (1) providing students with in-class support for special education, (2) withdrawing students for special education support in resource rooms (the pull-out model), and (3) integrating students in the general education classroom with two teachers, one of whom has special education qualifications (the full-inclusion model). Several recent studies have examined the effectiveness of these more or less inclusive placements on the social and emotional functioning of children with LD.

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The first type of study compared the social and emotional functioning of children with and without LD in one or more types of inclusion setting. Several studies showed that students with LD in inclusive classroom settings did not differ from their nonhandicapped classmates in terms of social status, number of reciprocal friendships, loneliness, self-esteem, and self-perception of social acceptance (Bear, Juvonen, & McInerney, 1993; Juvonen & Bear, 1992; Vaughn, McIntosh, Schumm, Haager, & Callwood, 1993; Vaughn, Elbaum, & Schumm, 1996). In contrast, Vaughn et al. (1996) found that students with LD who were enrolled in inclusive classrooms were less accepted by peers and more frequently rejected than children without LD. Other investigators found that students with LD reported more loneliness (Margalit & Levin-Alyagon, 1994; Pavri & Monda-Amaya, 2000) and lower academic self-concepts (Bear, Clever, & Proctor, 1991; Bear et. al., 1993; Vaughn et. al., 1996) than students without LD. Furthermore, in a study comparing two types of inclusive placements, students with LD in the consultation/collaborative versus the co-teaching inclusion setting fared better socially, demonstrating higher levels of peer acceptance and friendship quality. These same students also demonstrated moderate increases in the number of reciprocal friendships from fall to spring (Vaughn, Elbaum, Schumm, & Hughes, 1998). It is likely that contextual factors, which differentiate various inclusion settings, may be contributing to the apparently contradictory results of the above studies.

The second type of study compared the social and emotional functioning of students with LD across two or more placement settings. In this regard, one study found that students with LD in special education classes demonstrated better scores on social, emotional, and achievement-motivation outcomes than students with LD in full-inclusion classrooms (Schmidt, 2000). Still other studies have reported no differences between students with LD in more or less inclusive education placement settings in terms of social outcome measures (Merrell & Merz, 1992), academic and nonacademic self-concepts (Berman, 2000), and reports of self-esteem (Battista, 2000) and depression (Howard & Tryon, 2002). Self-concept has historically been a variable of major interest because of the view held by proponents of inclusion that one of the benefits for students in more inclusive placements is a more positive self-concept (Elbaum, 2002). Consequently, Elbaum conducted a meta-analysis of 36 studies that compared the self-concept of students in general education classes, resource rooms, self-contained special education classes, and special schools. Her findings supported her conclusion that "there is no systematic association between the self-concept of students with LD and their special education placement" (2002, pp. 221–222).

In contrast, other studies have revealed that students with LD in self-contained special education classes were more likely to have neglected peer status (i.e., to be socially isolated but not necessarily overtly rejected by their general classroom peers) than students with LD in integrated settings (Coben & Zigmond, 1986; Wiener, Harris, & Duval, 1993). These latter findings confirm those of a qualitative study on students' perceptions and attitudes about their placement setting (Demchuck, 2000). In this case, all eight children (aged 9 to 12 years) described their feelings of being excluded and victimized, and attributed these feelings to their full-time placement in a self-contained special education class. Lastly, studies examining students' perceptions of their educational settings revealed that children with LD stated that they would prefer the inclusion classroom to resource room settings because it was better for making friends (Klingner, Vaughn, Schumm, Cohen, & Forgan, 1998; Vaughn & Klingner, 1998).

The above summary clearly suggests that recent studies have not been effective in resolving the controversy regarding the degree to which special education placement has an impact on the social and emotional functioning of children with LD, as they continue to reveal mixed findings. It is likely that these mixed findings can be attributed partly to the lack of appropriate comparisons across several different special education placement settings, making it very difficult to isolate the social and emotional effects of more inclusive education placements. Therefore, we strongly agree with the recent call for a comparison among several different special education placement settings as it relates to the social and emotional functioning of students with LD (Juvonen & Bear, 1992; Pavri & Monda-Amaya, 2000; Vaughn et. al., 1996, 1998). This type of comparison study represents a more sensitive methodology, which may better elucidate the potential social and emotional benefits of more inclusive education placement settings. Accordingly, the purpose of this study was to compare the social and emotional functioning of children with LD whose special education placement was determined by the same criteria but for whom the type of setting was more or less inclusive depending on the philosophy of the school.

For each of the objectives of this study (described below), the following domains of social and emotional functioning were compared: (1) peer relations including same-sex peer acceptance, number of friends, and quality of friendships; (2) feelings of loneliness and depression; (3) self-perceptions; and (4) social skills and problem behaviors. We chose these domains because a review of numerous empirical studies indicated that compared to children without LD, children with LD are less well accepted and more frequently rejected by classmates (e.g., Bryan, 1974; Stone & La Greca, 1990; Wiener, Harris, & Shirer, 1990). Children with LD are more likely to have lower quality of friendship (Vaughn & Elbaum, 1999; Wenz-Gross & Siperstein, 1997; Wiener & Schneider, 2002) and poorer social skills (Kavale & Forness, 1995; Swanson & Malone, 1992) than children without LD. They are also more likely to report negative self-concepts (Chapman, 1988; Vaughn & Haager, 1994), loneliness (Margalit & Levin-Algayon, 1994; Valas, 1999), and depression (Heath, 1995; Heath & Wiener, 1996).

The sample of children with LD in the present study were included in a larger study comparing 117 children with LD and 115 children without LD on the above domains, and using the same measures (Wiener & Schneider, 2002; Wiener, 2002). The findings of this study are only briefly summarized here. Although children with and without LD were not found to differ in terms of the number of friends they had, children with LD were likelier to have friends who also had learning problems (according to teacher reports), who did not go to their school, and who were younger. Children with LD also

reported more conflicts and less validation in their friendships, and greater difficulty with relationship repair than children without LD. Finally, children with LD were less accepted by their peers, were rated by teachers as having poorer social skills and more problem behaviors, and the children reported having lower academic self-concepts and higher levels of loneliness and depressive symptomatology. Children with and without LD were not found to differ on the measures of global self-esteem and nonacademic self-concepts.

The children with LD were enrolled in four different special education placements. In-Class Support programs involved placing children in the general education classroom for the entire school day and providing them with assistance from a special education teacher who comes into the general education classroom for up to 90 minutes per day. Resource Room Support programs involved placing children in the general education classroom for most of the school day and withdrawing them to a separate room for special education assistance for up to 90 minutes per day. The children in Inclusion programs spent the entire day in a general education class with two teachers who typically team-taught. The children in Self-Contained Special Education programs spent at least half the school day in self-contained special education classes with some integration into general education classrooms. The same criteria were employed by the school districts to place children in either the In-Class Support or Resource Room programs (i.e., mild to moderate learning disability) and in either the Self-Contained Special Education or Inclusion programs (i.e., severe learning disability). The degree of inclusiveness of the placement was based on school philosophy. Because one of the main purposes of this study was to compare the social and emotional functioning of children with LD whose special education placement was determined by the same criteria, the following types of comparisons were made. First, we compared the social and emotional functioning of children with LD receiving In-Class versus Resource Room support. Second, we compared the social and emotional functioning of children with LD in Inclusion versus Self-Contained classrooms.

Thus, the first objective of our study was to compare the social and emotional functioning of children with LD who received In-Class versus Resource Room Support. We expected that children with LD receiving In-Class Support would fare better on the social and emotional outcome measures than would children with LD receiving their special education in a resource room. This expectation was based on the assumption espoused by advocates of full inclusion that being identified as having special needs and being separated from the general education classroom (as is the case in Resource Room programs) can be socially and emotionally detrimental to students with LD, and may possibly lead to stigmatization, less positive peer relations, and feelings of inferiority, loneliness, and depression (Gartner & Lipsky, 1987; Leondari, 1993; Stainback & Stainback, 1996).

Our second objective was to compare the social and emotional functioning of children with LD who received their special education in Inclusion versus Self-Contained classrooms. We anticipated that children with LD receiving their special education in Inclusion classrooms would fare better on the social and emotional outcome measures than would children with LD receiving their special education in Self-Contained classrooms. This expectation was based on the same assumption outlined above. In this case, however, we expected to observe more pronounced differences between the two placement settings than when comparing children with LD receiving In-Class versus Resource Room Support, as each placement setting represented opposing poles on the spectrum of special education service delivery models.

METHOD

Participants

The sample comprised 117 children with LD (67 boys, 50 girls). The mean age of the children was 11.63 years ($SD = 1.42$). All children were in Grade 4 to 8 classrooms in nine schools in two suburban school districts near Toronto, Canada. Fifty-six of the children (27 boys, 29 girls) were in Grades 4 to 6, and 61 (40 boys, 21 girls) were in Grades 7 to 8.

Although children who were recent immigrants and who did not speak English well enough to complete the instruments in the study were excluded, many of the children came from homes in which English was a second language or were members of visible minorities. Among the 117 children, English was a second language in the homes of 19 children (16 percent).

All the children with LD were identified as such by the Identification, Placement, Review Committee of the school district. School district criteria included a significant discrepancy between IQ and educational achievement scores. As recommended by Siegel and Heaven (1986), from the children with LD identified by the school district, we included in the study children who had a verbal, performance, or full-scale IQ > 80 on the Wechsler Intelligence Scale for Children (WISC-3, 1991), and a standard score < 90 in reading or arithmetic on one of the following tests (the percentage of children who received each test is indicated in parentheses): Wechsler Individual Achievement Test (1992) (11.3 percent); Kaufman Test of Educational Achievement—Comprehensive Form (Kaufman & Kaufman, 1985) (28.7 percent); Canadian Achievement Test (1981) (16.5 percent); Keymath—Revised—Canadian Edition (Connolly, 1991) (11.3 percent); and other achievement tests (10.5 percent). Reports from IQ and achievement tests given within the previous three years were available in the files of 88 percent of the children. For the remaining children, we administered the Kaufman Test of Educational Achievement—Brief Form (Kaufman & Kaufman, 1985) and the Vocabulary and Block Design subtests of the WISC-3. This latter IQ estimate has been shown to correlate highly (0.90) with full-scale IQ (Sattler, 1992). Twenty-five (22 percent) children in the final sample were tested. The mean IQ and achievement test scores are shown in Table 1.

We decided to use a combination of school identification and IQ/achievement test criteria in selecting our sample, for two reasons. First, it is important that all children be school-identified since it has been shown that children with LD who are school-identified and who receive special education

TABLE 1
IQ and Academic Achievement (Standard Scores) Across Special Education Placements

	In-Class Support (n = 28)	*Resource Room (n = 45)*	*t(df)*	*Inclusion Classroom (n = 21)*	*Self-Contained Classroom (n = 23)*	*t(df)*
Full-Scale IQ						
Mean	92.52	93.84	−0.57	90.88	89.52	0.38
(*SD*)	(7.16)	(10.12)	(66)	(8.57)	(12.38)	(36)
Reading						
Mean	85.00	90.76	−1.41	81.15	81.28	−0.03
(*SD*)	(5.78)	(11.15)	(40)	(10.25)	(10.36)	(29)
Math						
Mean	92.87	85.00	1.73	80.00	84.75	−1.49
(*SD*)	(14.31)	(10.76)	(38)	(9.76)	(7.37)	(27)
Spelling						
Mean	82.50	83.36	−0.21	81.00	79.94	0.27
(*SD*)	(11.65)	(10.02)	(34)	(10.00)	(8.63)	(22)

services are more likely to be viewed by both their peers and teachers as experiencing social difficulties than low achievers who are not so identified (Wiener et al., 1993). Second, children who did not meet the IQ and achievement criteria listed above were excluded from the sample due to the possibility that the different schools may not have used consistent criteria to identify the children with LD. It is noteworthy that we did not use a discrepancy between IQ and achievement as a basis for defining our sample of children with LD. This decision was due mainly to the important conceptual and practical problems with this latter approach (for a complete discussion, see Shaw, Cullen, McGuire, & Brinckerhoff, 1995; Siegel, 1989; K. E. Stanovich, 1991). Rather, in this study, our sample of children with LD had to meet both the requirement of school identification and the specific IQ and achievement cutoffs recommended by Siegel and Heaven (1986).

Definitions of Special Education Placements

The 117 children received special education according to four different service delivery models. Children needing a lower intensity of service received In-Class ($n = 28$; 24 percent) or Resource Room ($n = 45$; 38 percent) Support. Children in In-Class Support programs were placed in the general education classroom for the entire school day and received assistance from a special education teacher who consulted with the general education teacher and came into the general education classroom for 30 to 90 minutes per school day. Sometimes, the general education and special education teachers co-taught during the time the special education teacher was in the general education classroom. Other times, the special education teacher worked only with the LD students. Children in Resource Room programs were placed in the general education classroom for most of the school day but were withdrawn to a separate room for special education assistance for between 30 and 90 minutes per school day. The same criteria (i.e., mild to moderate learning disability) were employed by the school districts to place children in In-Class Support and Resource Room placements, but the model of service delivery depended on the philosophy of the school. Each school used either a more inclusive or less inclusive mode of service delivery but not both. As a result, children with LD were placed in one setting or the other solely as a function of the program available at their school.

The school districts placed children needing a higher intensity of special education support in Inclusion ($n = 21$; 18 percent) or Self-Contained ($n = 23$; 20 percent) Special Education classrooms depending on the philosophy of the school. The children in the Self-Contained Special Education classes spent at least half the school day in self-contained special education classes of 8–10 students with some integration into general education classrooms, typically for subjects such as physical education, music, and French. The children in the Inclusion classes spent the entire day in a general education class of 29–32 children that had two teachers. One was a special education teacher who was the teacher of record for the 8–10 students with LD, and the other was a general education teacher who was the teacher of record for the remaining children. The teachers typically co-taught. Again, each school used only one of these models, with the children's placement being determined by the school they were attending.

The results of *t*-tests did not reveal a significant difference in the full-scale IQ or academic achievement scores of children receiving In-Class versus Resource Room Support, or of children in Inclusion versus Self-Contained classrooms (see Table 1).

Measures

Sociometric Rating Scale

The children's peer acceptance was assessed using a five-point rating scale. For each of their classmates, the children and their classmates from their general education classrooms were asked to answer the question: "How much do you like to be with this person at school?" Responses ranged from (1) "I don't like to," to (5) "I like to a lot" (with a "I don't know him or her" option). Only classrooms with at least 15 raters were included in the study. The average same-sex rating score was calculated by using only the scores given to the children by classmates of the same sex, standardized within gender and classroom. There is support for the use of rating scale sociometrics for assessing peer acceptance because they have been shown to be highly reliable and to have good predictive validity (Asher & Dodge, 1986; Bukowski & Hoza, 1989; Hartup, 1983). Same-sex ratings have been found to be more valid than cross-sex ratings for children in the age group studied (Hartup, 1983).

Friendship Interview and Questionnaire

A friendship interview and a friendship questionnaire adapted from Berndt (1984) were used to assess the number and identity of the friends of the participants. In an individual interview with a research assistant, children were asked to nominate all of their "best friends," including those who did and did not attend their school, by first name and last initial, and

to indicate the gender, age, school, and classroom of those friends. They were then asked to select from that list their "very best friend in the world" and if that friend did not attend their school, their "very best school friend." The parents and teachers of the participants were given a parallel telephone interview (parents) and questionnaire (teachers) with similar questions to those asked of their children. Lastly, if the nominated friends of the children were students at the school and their parents gave consent for them to participate in the study, the friends also received the Child Friendship Interview. As recommended by Furman (1996), an unlimited number of friendship nominations by children, their parents, and teachers were allowed. This approach not only reduced the likelihood that children would report having a greater number of friends simply because they believed it was more desirable to do so, but also enabled a broader understanding of children's friendship networks.

From the Friendship Interview and Questionnaire, we identified the children the participants nominated as friends, and whether someone other than the participants (parent, teacher, or the nominated friend) agreed with the nomination. Friendship is, of course, a mutual relationship, which is typically measured by reciprocal friendship nominations (Schneider, Wiener, & Murphy, 1994). Our desire to find out about school and out-of-school friendships, coupled with the problem of some nominated school friends not providing consent to participate in the study, led us to also consider parent and teacher friendship nominations as an index of mutuality. Consequently, in the present study we examined two types of friendships. *Nominated Friends* are children the participant nominates, but whose friendship may or may not be corroborated by parents, teachers, or the friends themselves. *Corroborated/Reciprocated Friends* are children nominated by the participants whose nomination was corroborated by either or both of parents and teachers or reciprocated by the friends. As shown by Wiener and Schneider (2002), teacher or parent corroboration of friendship is a valid measure of a mutual relationship; moreover, it is typically the case that data obtained from multiple sources (i.e., parents, teachers, and peers) are more reliable than data obtained from a single source (Gresham, 1986; Sexton, Hall, & Thomas, 1984).

Friendship Quality Questionnaire-Revised (FQQ-R; Parker & Asher, 1993)

The FQQ-R is a self-report instrument that assesses quality of friendship. The questionnaire, which consists of 40 items, uses a five-point rating scale ranging from "not at all true" to "really true." The name of the children's very best school friend was inserted into each item. The scale was originally divided into six subscales: 1. Companionship and Recreation; 2. Validation and Caring; 3. Help and Guidance; 4. Intimate Disclosure; 5. Conflict Resolution; and 6. Conflict and Betrayal. According to Parker and Asher (1993), the FQQ-R has good test-retest reliability over a period of two weeks ($r = 0.75$) and good internal consistency reliability (ranging from 0.73 to 0.90 for the six subscales). Nevertheless, a factor analysis for our sample (using varimax rotation) produced a nine-factor structure instead of six. This factor analysis is described in some detail in Wiener and Schneider (2002). Only 7 of the 35 intercorrelations of the factors had absolute values above 0.50, with the range being from 0.01 through 0.67.

The first factor, labeled Help and Sharing (nine items; Eigenvalue = 12.620), accounted for 30.8 percent of the variance. The highest loadings pertained to the friends loaning things to each other (0.72) and counting on each other for ideas on how to get things done (0.69). The Trust and Caring factor (four items; Eigenvalue = 3.243) accounted for an additional 7.9 percent of the variance. The highest loading (0.71) was for the item: "My friend would still like me even if all the other kids didn't like me." The Disclosure factor (four items; Eigenvalue = 2.062) accounted for an additional 5 percent of the variance. The highest loading (0.73) was for "My friend and I talk about the things that make us sad." The items "My friend and I fight" (0.79) and "argue a lot" (0.79) loaded highest on the Conflict scale (five items; Eigenvalue = 1.681), which accounted for an additional 4.1 percent of the variance. The fifth factor, School Companionship (four items; Eigenvalue = 1.494), accounted for an additional 3.6 percent of the variance. The highest loading items referred to playing together at recess (0.82) and sitting together at lunch (0.81). The Relationship Repair factor (two items; Eigenvalue = 1.387), accounting for an additional 3.4 percent of the variance, involved making up easily during fights (0.74) and arguments (0.57). The Validation factor (three items; Eigenvalue = 1.264) accounted for an additional 3.1 percent of the variance. The highest loading item was "My friend tells me I'm good at things" (0.73). The Out-of-School Companionship factor (three items; Eigenvalue = 1.165) explained an additional 2.8 percent of the variance. The highest loadings were for "My friend and I go to each other's house after school and on weekends" (0.76) and "live really close to each other" (0.75). Finally, the Conflict Resolution Through Talking factor (two items; Eigenvalue = 1.039), explaining an additional 2.5 percent of the variance, referred to friends talking to each other to resolve a conflict.

Loneliness and Social Dissatisfaction Scale (LSDS; Asher, Hymel, & Renshaw, 1984)

This 24-item questionnaire was used to assess children's feelings of loneliness and social dissatisfaction. The 16 primary items focus on feelings of loneliness (e.g., "I'm lonely"), feelings of social adequacy (e.g., "I'm good at working with other children"), and subjective estimations of peer relations (e.g., "I have lots of friends"). The other eight items focus on hobbies or preferred activities, which are included to help the children feel more open and relaxed about indicating their attitudes about various topics. For each of the items, a five-point scale is used to indicate how much each statement is a true description of themselves, ranging from "always true" to "not true at all," with higher scores indicating more reported feelings of loneliness and social dissatisfaction. The psychometric properties of the 16-item scale are good, with an internal consistency reliability coefficient of 0.91. Children's total score on the LSDS was used in the statistical analyses.

Children's Depression Inventory (CDI; Kovacs, 1992)

The CDI was used to assess children's self-reported depressive symptomatology. The CDI is a 27-item scale designed to assess self-reports of depressed affect among children and adolescents aged 7 to 17 years. Symptoms of depression such as disturbance in mood, vegetative functions, negative self-evaluations, and interpersonal behaviors are assessed. Scores on the CDI range between 0 and 54, with higher scores indicating more reported depressive symptomatology. The CDI includes the following five subscales: Anhedonia, Interpersonal Problems, Feelings of Ineffectiveness, Negative Self-Esteem, and Negative Mood. The CDI is generally accepted as an optimal measure of depression for children (Vella, Heath, & Miezitis, 1992) and possesses good internal consistency (Cronbach's alpha = 0.87) and test-retest reliability ($r = 0.82$) over a one-month period (Kovacs, 1992). The children's total score on the CDI was used in the statistical analyses.

Self-Perception Profile for Learning Disabled Students (SPPLDS; Renick & Harter, 1988)

The SPPLDS is a 46-item self-report questionnaire that measures self-esteem (or global self-worth) and domain-specific self-concepts. The scale was adapted from the Self Perception Scale for Children (Harter, 1985) by adding subscales that assess self-concept for specific academic subjects and general intellectual ability. The scale has the following domain-specific subscales: General Intellectual Ability, Reading Competence, Writing Competence, Spelling Competence, Mathematics Competence, Athletic Competence, Physical Appearance, Social Acceptance, Behavioral Conduct, and Global Self-Worth. Overall, the SPPLDS has acceptable psychometric properties. The internal consistency reliability of the subscales range from Cronbach's alpha 0.78 to 0.89, indicating that the factor structure of the SPPLDS is sufficiently robust to provide a differentiated and meaningful self-perception profile for children with LD (Renick & Harter, 1988). The children's total scores for each of the above subscales were used in the statistical analyses.

Social Skills Rating Scale (SSRS; Gresham & Elliot, 1990)

The teacher version of the "Social Skills Rating System" was employed to assess social skills and problem behavior. There are three main scales: Social Skills, Problem Behaviors, and Academic Competence. On the Social Skills scale, teachers rate 30 social skills on a three-point frequency scale (never, sometimes, very often) and a three-point importance scale (not important, important, critical). The subscales of the Social Skills scale are Cooperation, Assertion, Empathy, Responsibility, and Self-Control. The 18-item Problem Behaviors Scale uses the three-point frequency but not the importance scaling and measures Externalizing Problems, Internalizing Problems, and Hyperactivity. We did not use the Academic Competence scale in this study. The psychometric properties of the main scales of this instrument are relatively good, with internal consistency reliability coefficients on the teacher scale ranging from 0.88 to 0.95 and test-retest reliability coefficients from 0.85 to 0.93. Concurrent and construct validity are adequate, with moderate correlations with scores on behavior problem checklists, peer sociometrics, and natural classroom observation (Elliot, Gresham, Freeman, & McCloskey, 1988; Gresham & Elliot, 1990).

Procedure

The data were collected over a period of two school years with all of the data for the children in five of the schools collected in the first year, and for the children in the remaining four schools in the second year. Identical procedures and timelines were used each year. The participants received the SPPLDS and the Child Friendship Interview in January or February of the school year. They were interviewed individually by a research assistant in a private room in their schools. If their nominated friends' parents had consented for them to participate in the study, these friends were given the Child Friendship Interview during March. The telephone interviews with parents were done in February and March.

The teachers of the participants completed their friendship questionnaires and the SSRS in April. Special education teachers completed these questionnaires for the children in Inclusion and Self-Contained classes, and general education teachers completed these questionnaires for the children receiving In-Class and Resource Room Support.

The sociometric rating scale, FQQ-R, LSDS, and CDI data were collected in April and May of the school year. Students completed the questionnaires in groups of approximately 10 pupils. One research assistant read the items aloud to ensure that reading problems did not interfere with comprehension of the questionnaire, and a second research assistant circulated to ensure that the students were on track. Because the FQQ-R was administered to both participants and their single best school friends, the sociometric rating scale to all students in the classroom whose parents gave consent, and the LSDS and CDI to the participants only, these measures were given in three separate sessions. Students were pulled out of their classrooms to a room of sufficient size to allow their chairs to be separated so that they could not see each other's questionnaires.

RESULTS

We adopted a liberal data analysis strategy in order to accommodate potential concerns by proponents of inclusion that we might be missing differences between placement groups if we were more stringent. Thus, we used a MANOVA followed by univariate analyses to identify differences between placement groups on measures with several subscales, and reported significant univariate results even when the MANOVA was not significant. When we compared groups on single variables we used one-tailed *t*-tests, testing the hypothesis that the

more inclusive placement would result in enhanced social and emotional functioning. In the Discussion section of this article, however, we alert the reader to exercise caution in interpreting these specific findings and indicate which findings would still differentiate the groups had we adopted a more conservative data-analysis strategy.

Peer Relationships

After converting same-sex ratings to *z*-scores, two *t*-tests were performed, one comparing children receiving In-Class versus Resource Room Support and the other comparing children in Inclusion versus Self-Contained classrooms in terms of their peer ratings of social acceptance (see Table 2). Children receiving In-Class Support were more socially accepted by their same-sex peers than children receiving Resource Room Support. There were no differences in social acceptance between children in Inclusion and Self-Contained classrooms.

To evaluate friendship patterns, four *t*-tests were performed, two comparing children receiving In-Class versus Resource Room Support and two comparing children in Self-Contained versus Inclusion classrooms in terms of the number of their Nominated and Corroborated/Reciprocated friends (see Table 2). There were no significant differences between placement groups in numbers of Nominated and Corroborated/Reciprocated friends.

To examine friendship quality, two MANOVAs were performed, one comparing children receiving In-Class versus Resource Room Support and the other comparing children in Inclusion versus Self-Contained classrooms in terms of self-reports of quality of friendships with very best friends on the FQQ-R. Quality of friendship was significantly associated with Inclusion versus Self-Contained classroom setting ($F(9.34) = 3.23$; $p = 0.006$). Follow-up univariate analyses revealed that children in Inclusion classrooms perceived their very best school friendships as higher in school companionship than children in Self-Contained classrooms (see Table 3). Quality of friendship was not related to In-Class versus Resource Room type of support ($F(9,62) = 1.026$; $p = 0.43$).

TABLE 2
Social Acceptance and Number of Friends Across Special Education Placements

	In-Class Support (n = 28)	*Resource Room (n = 45)*	*t(71)*	*Inclusion Classroom (n = 21)*	*Self-Contained Classroom (n = 23)*	*t(42)*
Social Acceptance						
Mean	0.24	−0.23	2.21*	0.11	−0.16	0.82
(*SD*)	(0.66)	(1.02)		(1.14)	(1.03)	
Nominated Friends						
Mean	6.04	6.62	0.602	5.33	6.00	0.904
(*SD*)	(3.73)	(5.14)		(2.63)	(2.26)	
Corroborated/Reciprocated Friends						
Mean	3.57	3.24	0.580	3.10	2.65	0.844
(*SD*)	(2.35)	(2.34)		(2.17)	(1.23)	

*$p < 0.05$.

Self-Reports

Two *t*-tests were performed for each of the LSDS and CDI total scores, one comparing children receiving In-Class versus Resource Room Support and the other comparing children in Inclusion versus Self-Contained classrooms in terms of self-reports of loneliness and depression (see Table 4). Children in Inclusion programs reported lower levels of loneliness than did children in Self-Contained classes. None of the other comparisons were significant.

As the distributions of the Global Self-Worth and the Self-Perception of General Intelligence scales on the SPPLD were markedly skewed to the left and could not be transformed, nonparametric Mann Whitney Tests were performed on these data. We compared children receiving In-Class versus Resource Room Support and children in Inclusion versus Self-Contained classrooms (see Table 5). None of these comparisons were significant.

Two MANOVAs were performed, one comparing children receiving In-Class versus Resource Room Support and the other comparing children in Inclusion versus Self-Contained classrooms in terms of academic self-perceptions in the areas of reading, spelling, writing, and math (see Table 5). Academic self-perceptions were significantly related to In-Class versus Resource Room type of support ($F(4,68) = 5.294$; $p = 0.001$). Follow-up univariate analyses revealed that children receiving In-Class Support reported higher academic self-perceptions of math competence than children receiving Resource Room Support. There were no significant differences in the academic self-perceptions reported by children in Inclusion versus Self-Contained classrooms ($F(4,39) = 0.460$; $p = 0.77$).

In terms of nonacademic self-perceptions, two MANOVAs were performed, one comparing children receiving In-Class versus Resource Room Support and the other comparing children in Inclusion versus Self-Contained classrooms in the areas of social acceptance, behavioral conduct, physical appearance, and athletic competence (see Table 5). The results of the MANOVA did not reveal a significant difference in the nonacademic self-concepts of children receiving In-Class versus Resource Room Support ($F(4,68) = 0.370$; $p = 0.83$) or in the Inclusion versus Self-Contained classrooms ($F(4.39)_{=}1.697$; $p = 0.17$). However, a follow-up univariate analysis revealed that children in Self-Contained versus Inclusion classrooms reported having lower self-perceptions of behavioral conduct.

Teacher Ratings of Social Skills and Problem Behaviors

Two *t*-tests were performed for each of the Social Skills and Problem Behavior scores on the SSRS, one comparing children receiving In-Class versus Resource Room Support and the other comparing children in Inclusion versus Self-Contained classrooms (see Table 6). Teachers of children in In-Class Support programs rated the children as having lower levels of Problem Behavior than children in Resource Room programs, and teachers of children in Inclusion classes rated the children as having lower levels of Problem Behavior than

TABLE 3
Quality of Friendship with Very Best Friend Across Special Education Placements

Friendship Domains	*In-Class Support (n = 28)*	*Resource Room (n = 45)*	$F_{(1/72)}$	*Inclusion Classroom (n = 21)*	*Self-Contained Classroom (n = 23)*	$F_{(1/43)}$
Help & Sharing						
Mean	2.96	2.62	2.35	2.70	2.88	0.36
(*SD*)	(0.94)	(0.88)		(1.08)	(0.89)	
Trust & Caring						
Mean	3.36	3.10	1.35	3.23	3.20	0.01
(*SD*)	(0.86)	(0.92)		(0.83)	(0.97)	
Disclosure						
Mean	2.73	2.60	0.30	2.51	2.73	0.40
(*SD*)	(1.03)	(1.10)		(1.20)	(1.07)	
Conflict						
Mean	0.87	0.95	0.17	1.17	1.58	1.74
(*SD*)	(0.74)	(0.75)		(0.88)	(1.15)	
School Companionship						
Mean	1.97	1.93	0.03	2.27	1.30	7.48*
(*SD*)	(1.00)	(1.05)		(1.12)	(1.22)	
Relationship Repair						
Mean	3.18	2.98	0.78	2.81	3.07	0.58
(*SD*)	(1.04)	(0.88)		(1.23)	(1.00)	
Validation						
Mean)	2.80	2.77	0.02	2.67	2.86	0.41
(*SD*	(1.05)	(0.88)		(1.02)	(0.96)	
Out-of-School Companionship						
Mean	2.70	2.63	0.09	2.90	2.46	2.29
(*SD*)	(1.09)	(1.01)		(0.80)	(1.10)	
Conflict Resolution						
Mean	2.57	2.17	2.31	2.69	2.63	0.03
(*SD*)	(1.04)	(1.12)		(1.22)	(1.10)	

*$p < 0.01$.

TABLE 4
Loneliness and Depression Across Special Education Placements

	In-Class Support (n = 28)	*Resource Room (n = 45)*	*t(df)*	*Inclusion Classroom (n = 21)*	*Self-Contained Classroom (n = 23)*	*t(df)*
Loneliness						
Mean	45.06	48.51	−0.87	51.16	59.24	−1.81*
(*SD*)	(16.99)	(15.58)	(71)	(15.95)	(13.67)	(42)
Depression						
Mean	7.52	8.52	−0.56	9.58	11.74	−1.03
(*SD*)	(7.77)	(6.99)	(69)	(6.32)	(5.67)	(33)

*$p < 0.05$.

children in Self-Contained classes. None of the comparisons regarding Social Skills were significant.

DISCUSSION

Does special education placement make a difference in terms of the social and emotional functioning of children with LD? Children with LD in the sample from the present study had fewer corroborated/reciprocated friends, lower quality of friendship, lower social acceptance, lower academic self-concept, poorer social skills, and higher levels of loneliness, depression, and problem behaviors than children without LD (Wiener & Schneider, 2002; Wiener, 2002). Nevertheless, there were few differences within the sample of children with LD on these variables as a function of special education placement. This suggests that for many children with LD, the social and emotional problems they experience are not associated with the type of special education they receive.

There were, however, several subtle differences between placement groups that are important. It is also noteworthy that when differences between placement groups occurred, it was always the children in the more inclusive settings who fared better. With regard to the comparisons between children receiving In-Class versus those receiving Resource Room Support, children receiving In-Class Support were better accepted by peers, had higher self-perceptions of mathematics competence, and fewer teacher-rated problem behaviors than children receiving Resource Room Support. With regard to the comparisons between children in Inclusion classrooms versus those in Self-Contained Special Education classrooms, children in Inclusion classrooms reported that their school friends were better companions, that they were less lonely, and that their behavior was less problematic than children in Self-Contained Special Education classrooms. The teachers concurred that the children in Inclusion classes

TABLE 5
Self-Perceptions Across Special Education Placements

	In-Class Support (n = 28)	*Resource Room (n = 45)*	*U(z)*	*Inclusion Classroom (n = 21)*	*Self-Contained Classroom (n = 23)*	*U(z)*
Global Self-Worth						
Mean	3.36	3.22	535.5	3.25	3.16	208.5
(*SD*)	(0.72)	(0.69)	(−1.081)	(0.77)	(0.58)	(−0.782)
Intelligence						
Mean	2.64	2.49	550.5	2.48	2.51	235.5
(*SD*)	(0.69)	(0.54)	(−0.913)	(0.76)	(0.51)	(0.887)
			$F_{(1/72)}$			$F_{(1/43)}$
Reading						
Mean	2.58	2.77	0.67	2.25	2.56	1.62
(*SD*)	(0.98)	(0.97)		(0.84)	(0.77)	
Spelling						
Mean	2.59	2.22	3.11	2.34	2.44	0.16
(*SD*)	(0.90)	(0.85)		(0.83)	(0.83)	
Writing						
Mean	2.76	2.52	1.38	2.46	2.42	0.03
(*SD*)	(0.92)	(0.78)		(0.80)	(0.89)	
Math						
Mean	3.04	2.31	12.79**	2.40	2.32	.09
(*SD*)	(.80)	(.87)		(1.02)	(1.00)	
Social Acceptance						
Mean	3.03	3.00	0.03	3.10	2.79	2.67
(*SD*)	(0.81)	(0.70)		(0.67)	(0.60)	
Behavioral Conduct						
Mean	2.95	2.94	0.00	2.86	2.41	4.25*
(*SD*)	(0.93)	(0.82)		(0.68)	(0.76)	
Physical Appearance						
Mean	3.15	2.94	0.26	2.99	2.88	0.36
(*SD*)	(0.87)	(0.73)		(0.88)	(0.70)	
Athletic						
Mean	3.13	3.03	1.27	3.05	2.91	0.22
(*SD*)	(0.75)	(0.83)		(0.79)	(0.69)	

*$p < 0.05$; **$p < 0.001$.

had fewer problem behaviors than children in Self-Contained classes.

The finding that children receiving In-Class Support were better accepted by peers than children receiving special education support in a resource room is important because peer acceptance is a major risk indicator in terms of psychosocial adjustment in childhood and adulthood (Bukowski & Hoza, 1989; Hartup, 1983). The present study does not provide clear reasons for the lowered peer acceptance of children with LD withdrawn to a resource room. As claimed by several proponents of inclusion (e.g., Gartner & Lipsky, 1987; Stainback & Stainback, 1996), it is possible that being withdrawn from the classroom for special education is stigmatizing. Furthermore, children who spend the entire day in general education

TABLE 6
Social Skills and Problem Behaviors Across Special Education Placements

Teacher Ratings	*In-Class Support (n = 28)*	*Resource Room (n = 45)*	*t(7)*	*Inclusion Classroom (n = 21)*	*Self-Contained Classroom (n = 23)*	*t(42)*
Social Skills						
Mean	91.04	89.86	0.35	96.19	92.55	−0.76
(*SD*)	(16.05)	(12.33)		(17.05)	(14.87)	
Problem Behaviors						
Mean	105.82	110.56	−1.72*	106.33	113.53	−1.72*
(*SD*)	(12.14)	(11.04)		(14.52)	(13.27)	

*$p < 0.05$.

classrooms spend more time with children who do not have disabilities and presumably model appropriate behavior. This interpretation is supported by the finding that the children with LD receiving In-Class Support were rated by teachers as having fewer problem behaviors than the children receiving Resource Room Support.

An alternate explanation may be related to teacher beliefs about children with special needs. The decision to opt for a more inclusive model (i.e., In-Class Support or Inclusion) was made at the level of the school, with leadership provided by school administrators and special education teachers. P. J. Stanovich and Jordan (1998) found that teachers' beliefs about the process of including children with special needs in general education classrooms are generally consistent with those of the school leadership, possibly because of the influence of the school administrators, or because teachers who do not share the school administrator's beliefs request a transfer to another school. Furthermore, teachers who consult with the special education teacher, and who welcome the special education teacher into their classrooms to provide support for students, may have different beliefs and practices from teachers who prefer that their students go to a resource room for special education assistance. Thus, teachers who are in schools that choose to implement the In-Class Support and Inclusion models may have more interventionist beliefs and practices (P. J. Stanovich & Jordan, 1998). Interventionist teachers believe that children with LD can be included in the general education classroom if teachers modify their teaching approaches to meet the needs of these children, and that teachers can help children be accepted by their classmates. These teachers consult others frequently to enhance their techniques for assisting children and prefer to collaborate with special education teachers to deliver instruction to students. They develop proactive plans of action. Children with special needs in classrooms with interventionist teachers had a higher self-concept and were better accepted by peers than children in classrooms with teachers who were not interventionist in terms of their beliefs and practices (Jordan & Stanovich, 2001; P. J. Stanovich, 1994).

The differences in social and emotional functioning between children in Inclusion classrooms and Self-Contained classrooms tell a coherent story. Although they have the same number of friends as children in Inclusion classes, children in Self-Contained Special Education classes report a lower quality of friendship, experience more loneliness, and have more behavior problems than their counterparts in Inclusion programs. The lower quality of friendship with best friends reported by children in Self-Contained Special Education classes may be a key issue. The specific factor of the FQQ-R on which the two groups differed was the "School Companionship" factor. The "School Companionship" factor describes situations in which having a friend is extremely important to children because without a friend in those situations they are, in essence, alone in a crowd where other children all seem to have friends. These situations include sitting together at lunch, playing together at recess, picking each other as partners, and helping each other with schoolwork. For children in the age group studied (Grades 4–8), this type of companionship is often the essence of friendship. Only in adolescence do issues such as intimacy assume greater importance (Schneider et al., 1994). Furthermore, loneliness in children is highly correlated with quality of friendship in children with and without LD (Parker & Asher, 1993, Margalit, Tur-Kaspa, & Most, 1999).

The children with LD in Self-Contained Special Education classes and their teachers both report that the children have more problem behaviors than do children with LD in Inclusion programs. There are several possible interpretations of this finding. It is likely that the proximity of positive peer models in the Inclusion classes was a positive influence on the behavior of the children with LD. It is also possible that children with LD in Self-Contained classes are labeled as troublemakers in the school. As children with LD in the Inclusion programs are not so easily identified as being different, they may not have been so labeled. Finally, children with LD in Self-Contained classes may be very unhappy about their placement, and may have acted out as a result. In a qualitative study involving intensive interviews with children with LD in self-contained special education settings, Demchuk (2000) found that many of them were angry about their situation, felt powerless, and described themselves as being "educated in exile."

After analyzing our data, we had several questions about the organization and dynamics of Inclusion classes. Consequently, we interviewed the teachers and vice-principal of one of the Inclusion classes in our study, and observed in the classroom on three different days for approximately 90 minutes per day. The observations were carried out at different times of the school day. The classroom we observed was a split Grade 4/5 class with 29 students, 10 of whom were students with identified learning disabilities. The school had two split Grade 4/5 classes. The children without LD in the class were chosen for the Inclusion class because they were middle achievers and thought to be nurturing. Five of the students with LD came from outside the catchment area of the school and were transported to school by school bus. The remaining children walked to school. The classroom was a double pod (i.e., the size of two classrooms). The classroom had a male general education teacher and a female special education teacher, who claimed that they enjoyed team-teaching and were committed to both including children with LD and providing them with excellent instruction.

Although the children with LD were identified as such by the school district, the children in the class were not aware of this. The children with LD were seldom taught as a segregated group. Instead, the children were grouped in different ways for instruction. The teachers used similar-ability groups for skill instruction in reading, writing, and mathematics, and mixed-ability groups for content subjects such as social studies and science. We also observed one teacher providing individual instruction to a child while the other teacher worked with the remaining children in the class. Groups were carefully selected for cooperative learning activities to make sure that the children with LD were not clustered in a group, and to have groups comprised of children with different strengths. We observed the teachers providing frequent positive reinforcement to children, and providing recognition for both achievement and effort of both children with and without LD. There was also a focus on social problem solving and helping others.

As stated in our introduction to this article, the current prevailing philosophy in special education is to include children in general education classrooms (Elbaum, 2002). Although the empirical evidence is scant, many educators are very passionate about this and may be looking for places where we might have missed a possible finding showing the superiority of inclusive placements. Consequently, as indicated above, our strategy for analyzing our data involved a deliberate bias in favor of minimizing Type 2 error. We used one-tailed *t*-tests for most of our analyses, only using multivariate analyses when we were analyzing an instrument with several subscales. Had we used two-tailed *t*-tests, the differences between children in Inclusion and Self-Contained classes in loneliness, and the differences between all the placement groups in teacher-rated problem behavior, would not have been significant. Had we not done univariate comparisons following a nonsignificant MANOVA, the differences between children in Inclusion and Self-Contained Special Education classes with regard to self-perception of behavioral conduct would not have been evident. Furthermore, the analyses involved a very large number of comparisons, which means that some of the findings that occurred with an alpha of $p < 0.05$ might have been spurious. Had we adopted a more stringent alpha of $p < 0.01$, only two of our findings would have been significant (the difference between the children in Inclusion and Self-Contained classes on the School Companionship factor of the FQQ-R and the difference between the children receiving In-Class and Resource Room Support in self-perception of mathematics competence).

The sample from this study came from nine different elementary schools and 55 different general education classrooms. The children with severe LD came from three Inclusion and three Self-Contained Special Education classrooms, mitigating against the likelihood that the findings were due to the characteristics of a single class. Nevertheless, the sample size was sufficiently small that one exemplary program might have influenced the results. One of the strengths of the study with regard to exploring the impact of different special education placements is that the type and process of identification of children receiving In-Class versus Resource Room Support, and of children in Inclusion versus Self-Contained classrooms were identical. The reason for the more inclusive placement of some children was the philosophy of the school, not the children's specific needs. The study would have been strengthened, however, had the children been assigned to placements randomly, but for ethical and practical reasons, this could not be done.

Implications

There are several important implications of this study. Although the results suggest a slight superiority of the more inclusive programs in terms of the social and emotional adjustment of children with LD, the differences between groups were not large. The differences are especially small in contrast to the differences between children with and without LD. Therefore, it would be inappropriate to conclude that the major variable influencing the social and emotional adjustment of children with LD is their special education placement. Furthermore, as suggested by Elbaum (2002), there may have been several children for whom the less inclusive option might enhance their social and emotional adjustment. Consequently, school districts should have a range of special education placements for children with LD. In the present study, the majority of children ($n = 68$) were in Resource Room or Self-Contained Special Education classes, with a smaller number ($n = 49$) in the more inclusive placements. This reflected the distribution of placements in the two school districts that participated in the study. The results suggest that expanding the number of more inclusive placements might be appropriate.

It should be noted that all the inclusive placements investigated in this study provided a similar amount of special education support to students as did the placements involving withdrawal from the general education classroom. There is some evidence that children with LD who are in general education classrooms without special education support have the worst social and emotional outcomes (Coleman, Angevine McHam, & Minnett, 1992; Elbaum, 2002). Furthermore, all the placements in the present study were situations with direct special education teacher involvement. We did not investigate the social and emotional adjustment of children with LD who are placed in a general education classroom and receive most of their special education support from an educational assistant.

The early meta-analyses of research on the differential impact of special education placement (Carlberg & Kavale, 1980; Wang & Baker, 1985–1986) included few studies on children with LD, and did not include studies involving the types of inclusive placements that mostly emerged during the 1990s. The present study supported Elbaum's (2002) conclusion that investigation of the differential impact of placement is complex, demanding several researchers who compare different types of contexts. Therefore, we conclude with a plea for more empirical research on the academic, social, and emotional impacts of various special education placements for children with LD.

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REFERENCES

Asher, S. R., & Dodge, K. A (1986). Identifying children who are rejected by their peers. *Developmental Psychology, 22,* 444–449.

Asher, S. R., Hymel, S., & Renshaw, P. D (1984). Loneliness in children. *Child Development, 55*(4), 1456–1464.

Bak, J. J., Cooper, E. M., Dobroth, K. M., & Siperstein, G. N. (1987). Special class placements as labels: Effects on children's attitudes toward learning handicapped peers. *Exceptional Children, 54,* 151–155.

Battista, A. B. (2000). *The impact of inclusion upon sixth graders' attitudes, self-esteem and academic performance*. Unpublished doctoral thesis. Hofstra University.

Bear, G. G., Clever, A., & Proctor, W. A. (1991). Self-perceptions of nonhandicapped children and children with learning disabilities in integrated classes. *Journal of Special Education, 24,* 409–426.

Bear, G. G., Juvonen, J., & McInerney, F. (1993). Self-perceptions and peer

relations of boys with and boys without learning disabilities in an integrated setting: A longitudinal study. *Learning Disability Quarterly, 16,* 127–136.

Berman, M. S. (2000). *Self-concept and academic differences between students with learning disabilities in inclusive and non-inclusive classrooms*. Unpublished doctoral thesis. Temple University.

Berndt, T. J. (1984). Sociometric, social-cognitive, and behavioral measures for the study of friendship and popularity. In T. Field, J. L. Roopnarine, & M. Segal (Eds.), *Friendships in normal and handicapped children* (pp. 31–52). Norwood, NJ: Ablex.

Bryan, T. (1974). Peer popularity of learning disabled children. *Journal of Learning Disabilities, 7,* 621–625.

Bukowski, W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement, and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child development* (pp. 15–45). New York: Wiley.

Canadian Achievement Tests. (1981). Toronto, ON: McGraw-Hill Ryerson.

Carlberg, C., & Kavale, K. (1980). The efficacy of special versus regular class placement for exceptional children: A meta-analysis. *Journal of Special Education, 14,* 25–52.

Chapman, J. (1988). Learning disabled children's self-concepts. *Review of Educational Research, 58,* 347–371.

Coben, S., & Zigmond, N. (1986). The social integration of learning disabled students from self-contained and mainstream elementary school settings. *Journal of Learning Disabilities, 19,* 614–618.

Coleman, J. M., Angevine McHam, L., & Minnett, A. M. (1992). Similarities in the social competencies of learning disabled and low achieving elementary school children. *Journal of Learning Disabilities, 25,* 671–677.

Connolly, A. J. (1991). *Canadian edition of Keymath-revised: A diagnostic inventory of essential mathematics*. Toronto, ON: Psycan.

Demchuk, L. (2000). *Children's perceptions and attitudes about special education*. Unpublished doctoral thesis. University of Toronto.

Elbaum, B. (2002). The self-concept of students with learning disabilities: A meta-analysis of comparisons across different placements. *Learning Disabilities Research & Practice, 17,* 216–226.

Elliot, S. N., Gresham, F. M., Freeman, T., & McCloskey, G. (1988). Teacher and observer ratings of children's social skills: Validation of the Social Skills Rating Scales. *Journal of Psychoeducational Assessment, 6,* 152–161.

Fuchs, D., & Fuchs, L. S. (1994). Inclusive schools movement and the radicalization of special education reform. *Exceptional Children, 60,* 294–309.

Furman, W. (1996). The measurement of friendship perceptions: Conceptual and methodological issues. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep* (pp. 41–65). Cambridge: Cambridge University Press.

Gartner, A., & Lipsky, D. (1987). Beyond special education: Toward a quality system for all students. *Harvard Education Review, 57,* 367–395.

Gresham, F. (1986). Conceptual and definitional issues in the assessment of children's social skills: Implications for classification and training. *Journal of Clinical Child Psychology, 15,* 3–15.

Gresham, F. M., & Elliot, S. N. (1990). *The Social Skills Rating System*. Circle Pines, MN: American Guidance Service.

Harter, S. (1985). *Manual for the Self-Perception Profile for Children*. Unpublished manuscript. Denver, CO: University of Denver.

Hartup, W. W. (1983). Peer relations. In E. M. Heatherington (Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality and social development* (pp. 103–196). New York: Wiley.

Heath, N. L. (1995). Distortion and deficit: Self-perceived versus actual academic competence in depressed and nondepressed children with and without learning disabilities. *Learning Disabilities Research & Practice, 10,* 2–10.

Heath, N. L., & Wiener, J. (1996). Distortion and deficit: Self-perceived versus actual academic competence in depressed and non-depressed children with and without learning disabilities. *Learning Disability Quarterly, 19,* 34–44.

Howard, K. A., & Tryon, G. S. (2002). Depressive symptoms in and type of classroom placement for adolescents with LD. *Journal of Learning Disabilities, 35*(2), 185–190.

Jordan, A., & Stanovich, P. (2001). Patterns of teacher-student interaction in inclusive elementary classrooms and correlates with student self-concept. *International Journal of Disability, Development and Education, 48,* 33–52.

Juvonen, J., & Bear, G. (1992). Social adjustment of children with and without learning disabilities in integrated classrooms. *Journal of Educational Psychology, 84,* 332–330.

Kauffman, J. M. (1993). How we might achieve the radical reform of special education. *Exceptional Children, 60,* 6–16.

Kaufman, A. S., & Kaufman, N. L. (1985). *The Kaufman Test of Educational Achievement*. Circle Pines, MN: American Guidance Service.

Kavale, K. A., & Forness, S. R. (1995). Social skill deficits and training: A meta-analysis of the research in learning disabilities. *Advances in Learning and Behavioral Disabilities, 9,* 119–160.

Kovacs, M. (1992). *Children's Depression Inventory*. Toronto, ON: Multi-Health Systems Inc.

Klingner, J. K., Vaughn, S., Schumm, J. S., Cohen, P., & Forgan, J. W. (1998). Inclusion or pull-out: Which do students prefer? *Journal of Learning Disabilities, 31,* 148–158.

Leondari, A. (1993). Comparability of self-concept among normal achievers, low achievers and children with learning difficulties. *Educational Studies, 19,* 357–371.

Margalit, M., & Levin-Alyagon, M. (1994). Learning disability subtyping, loneliness, and classroom adjustment. *Learning Disability Quarterly, 17,* 297–310.

Margalit, M., Tur-Kaspa, H., & Most, T. (1999). Reciprocal nominations, reciprocal rejections and loneliness among students with learning disorders. *Educational Psychology, 19,* 79–90.

Merrell, K. W., & Merz, J. M. (1992). The effect of service delivery model on the social-behavioral competence of learning disabled students. *British Columbia Journal of Special Education, 16*(1), 82–91.

Parker, J., & Asher, S. (1993). Friendship and friendship quality in middle childhood: Links with peer acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29,* 611–621.

Pavri, S., & Monda-Amaya, L. (2000). Loneliness and students with learning disabilities in inclusive classrooms: Self-perceptions, coping strategies, and preferred interventions. *Learning Disabilities Research & Practice, 15,* 22–33.

Renick, M. J., & Harter, S. (1988). *Self-Perception Profile for Learning Disabled Students*. Denver, CO: University of Denver.

Sattler, J. M. (1992). *Assessment of children* (4th ed.). San Diego, CA: Jerome M. Sattler.

Schmidt, M. (2000). Social integration of students with learning disabilities. *Developmental Disabilities Bulletin, 28*(2), 19–26.

Schneider, B. H., Wiener, J., & Murphy, K. (1994). Children's friendships: The giant step beyond peer acceptance. *Journal of Personal and Social Relationships, 11,* 323–340.

Sexton, D., Hall, J., & Thomas, P. J. (1984). Multisource assessment of young handicapped children: A comparison. *Exceptional Children, 50,* 556–558.

Shaw, S. F., Cullen, J. P., McGuire, J. M., & Brinckerhoff, L. C. (1995). Operationalizing a definition of learning disabilities. *Journal of Learning Disabilities, 28,* 586–597.

Siegel, L. S. (1989). IQ is irrelevant to he definition of learning disabilities. *Journal of Learning Disabilities, 22,* 469–478.

Siegel, L. S., & Heaven, R. K. (1986). Defining and categorizing learning disabilities. In S. Ceci (Ed.), *Handbook of cognitive, social and neuropsychological aspects of learning disabilities* (Vol. 1, pp. 59–122). New York: Academic Press.

Stainback. S., & Stainback, W. (1996). *Inclusion: A guide for educators*. Baltimore, MD: Brookes.

Stanovich, K. E. (1991). Discrepancy definitions of reading disability: Has intelligence led us astray? *Reading Research Quarterly, 26,* 7–29.

Stanovich, P. J. (1994). *Teachers' sense of efficacy, beliefs and practice, and teaching behaviors as predictors of effective inclusion of exceptional and at-risk pupils*. Unpublished doctoral dissertation. University of Toronto.

Stanovich, P. J., & Jordan, A. (1998). Canadian teachers' and principals' beliefs about inclusive education as predictors of effective teaching in heterogeneous classrooms. *Elementary School Journal, 98,* 219–236.

Stone, W. L., & La Greca, A. M. (1990). The social status of children with learning disabilities: A reexamination. *Journal of Learning Disabilities, 23,* 32–37.

Swanson, H. L., & Malone, S. (1992). Social skills and learning disabilities: A meta-analysis of the literature. *School Psychology Review, 21,* 427–443.

Valas, H. (1999). Students with learning disabilities and low-achieving students: Peer acceptance, loneliness, self-esteem, and depression. *Social Psychology of Education, 3,* 173–192.

Vaughn, S., & Elbaum, B. (1999). The self-concept and friendships of students with learning disabilities: A developmental perspective. In R. Gallimore (Ed.), *Developmental perspectives on children with high-incidence disabilities* (pp. 81–107). Mahwah, NJ: Erlbaum.

Vaughn, S., Elbaum, B. E., & Schumm, J. S. (1996). The effects of inclusion on the social functioning of students with learning disabilities. *Journal of Learning Disabilities, 29,* 598–608.

Vaughn, S., Elbaum, B. E., & Schumm, J. S., & Hughes, M. T. (1998). Social outcomes for students with and without learning disabilities in inclusive classrooms. *Journal of Learning Disabilities, 31,* 428–436.

Vaughn, S., & Haager, D. (1994). Social competence as a multifaceted construct: How do students with learning disabilities fare? *Learning Disability Quarterly, 17,* 253–266.

Vaughn, S., & Klinger, J. K. (1998). Students' perceptions of inclusion and resource room settings. *Journal of Special Education, 32,* 79–88.

Vaughn, S., McIntosh, R., Schumm, J. S., Haager, D., & Callwood, D. (1993). Social status, peer acceptance, and reciprocal friendships revisited. *Learning Disabilities Research & Practice, 8,* 82–88.

Vella, D. D., Heath, N. L., & Miezitis, S. (1992). Childhood depression assessment issues. In S. Miezitis (Ed.), *Creating alternatives to depression in our schools: Assessment, intervention, prevention* (pp. 95–106). Toronto, ON: Hogrefe and Huber.

Wang, M. C., & Baker, E. T. (1985–1986). Mainstreaming programs: Design features and effects. *Journal of Special Education, 19,* 503–521.

Wechsler, D. (1991). *Wechsler Intelligence Scale for Children—Third edition*. San Antonio, TX: Psychological Corporation.

Wechsler, D. (1992). *Wechsler Individual Achievement Test*. San Antonio, TX: Psychological Corporation.

Wenz-Gross, M., & Siperstein, G. N. (1997). Importance of social support in the adjustment of children with learning problems. *Exceptional Children, 63,* 183–193.

Wiener, J. (2002). Friendship and social adjustment of children with learning disabilities In B. Y. L. Wong & M. L. Donahue (Eds.), *The social dimensions of learning disabilities: Essays in honor of Tanis Bryan* (pp. 93–114). Mahwah, NJ: Erlbaum.

Wiener, J., Harris, P. J., & Duval, L. (1993). Placement, identification and subtype correlates of peer status and social behavior of children with learning disabilities. *Exceptionality Education Canada, 3,* 129–155.

Wiener, J., Harris, P. J., & Shirer, C. (1990). Achievement and social-behavioral correlates of peer status in LD children. *Learning Disabilities Quarterly, 13,* 114–127.

Wiener, J., & Schneider, B. (2002). A multisource exploration of friendship patterns of children with and without learning disabilities. *Journal of Abnormal Child Psychology, 30,* 127–141.

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