

CORRELATES OF LEARNING DISABLED STUDENTS'
SOCIAL ACCEPTANCE IN MAINSTREAM CLASSROOMS

by

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(ABSTRACT)

The present study investigated the social status of learning disabled (LD) students among their non-LD peers and explored how their social acceptance related to personal attributes, behavioral characteristics, and social information processing. Subjects were 22 white, third through fifth grade LD students and 347 of their non-LD classmates. Results showed that on a play rating scale, but not on a peer nomination measure, the LD group was rated lower than non-LD students. In addition, more LD than non-LD students were found to be rejected; however, LD students were equally represented in the popular, neglected, and controversial sociometric status categories. LD students were also found to be less well known than controls. Acquaintance ratings correlated highly with friendship ratings and moderately with peer nominations, suggesting that being less well known was significantly related to being rated as an undesirable

playmate.

Although LD students were perceived by peers as less physically attractive, less academically skilled, and less socially skilled, as a group, these findings appear to be clouded by the effects attributable to the low status LD children. Within the LD group, high social status children did not differ significantly from controls on dependent variables.

Multiple regression analyses showed that peer ratings of physical attractiveness were most predictive of peer nominations (multiple R square=.50), whereas athletic ability was found to predict 85% of the variance in friendship ratings. Social information processing deficits were not predictive of social acceptance. Results suggest that special skills or attributes appear to provide a boost needed for general social acceptance of LD students.

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v

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INTRODUCTION

The adjustment of handicapped children to mainstream classrooms has been of major concern to educators and other professionals since the passage of Public Law 94-142, The Education for All Handicapped Children Act of 1975. This legislation mandated the education of children with handicaps in "least restrictive environments". According to several sources, the basic principle underlying this regulation was that handicapped students could benefit educationally and socially from observing and interacting with non-handicapped students. In addition, it was hoped that non-handicapped children would become more sensitive to their handicapped peers and would develop more positive attitudes towards them. Kaufman, Gottlieb, Agard, and Kukic (1975) stated more specifically that the legislation was anticipated to enhance the social status of handicapped children among their non-handicapped peers.

Despite its original intent, many individuals maintain that P.L. 94-142 has resulted in what Gresham (1982) calls "misguided mainstreaming". Specifically, placing handicapped and non-handicapped students together does not necessarily result in the increased social acceptance of handicapped children. Sociometric

techniques, designed to investigate the social status of particular groups, have long been used by researchers to study the peer relations of children and adolescents. In a review of social perception literature, LaGreca (1981) reports that one group of handicapped children, the learning disabled, are consistently rated lower on indices of social acceptance and higher on measures of peer rejection than their nondisabled peers.

In the first and probably the most frequently cited study on the topic, Bryan (1974) reported that third, fourth, and fifth grade LD children were significantly less accepted and more socially rejected than their classmates (matched for sex and race). Measures used to determine this relationship included a combination of sociometric techniques: a) positive nominations of three classmates as friends, classroom neighbors, and invitees to a birthday party (Moreno, 1960, cited in Bryan 1974); b) negative nominations of three classmates who are not friends, not neighbors, and not invitees to a birthday party; and c) the Guess-Who Technique in which children provide nominations for positive and negative items such as, "Who finds it hard to sit still in class?, Who is always scared?, and "Who is handsome or pretty?" (Bryan 1974, p.32). The results indicate that LD children

received fewer social attraction nominations and a greater number of votes indicating social rejection.

A year after this study, Bryan (1976) replicated her results using 25 of the original LD fourth and fifth graders. She found that LD children again received a greater number of negative nominations and fewer positive nominations. These results led her to conclude that the relatively poor social status of LD does not appear to change substantially over time, even when the children are placed with a predominantly new group of peers.

Other research has led to the conclusion that relatively low social acceptance is common among the learning disabled (Bruininks, 1978; Garrett & Crump, 1980; Horowitz, 1981; Siperstein, Bopp & Bak, 1978). In one study, 100 LD students were randomly selected from the 350 children enrolled in the school system's LD program, and compared to a group of 100 non-LD subjects, matched for sex and classroom assignment, on "Guess Who" positive and negative nominations (Garrett & Crump, 1980). As found by Bryan (1974, 1976), LD subjects received a significantly lower social status score than non-learning disabled subjects. Similarly, Siperstein et al. (1978) found that LD students occupied a less popular social position than other fifth and sixth grade children

when compared on same-sex positive nominations.

However, a closer examination of these studies suggests that several qualifications must be made about their conclusions. For example, the Siperstein et al. (1978) data reveals that although LD students were never among the most popular, or what the author refers to as social "stars", the prevalence of LD children among the "isolates" (i.e., nominated by one or no peers) was similar to that of other children. Thus, while less popular, LD students were not found to be overly represented as social isolates. Furthermore, Horowitz (1981), who found LD students to be lower on a sociometric ranking measure, qualified the results of her study by noting that statistically significant differences between LD and non-LD samples were found only when there was no statistical control for the significantly lower intelligence scores of LD versus non-LD children. When an analysis of covariance was used to control for intelligence, no significant differences were noted between the two samples.

In addition, two peer-nomination studies (Bursuck, 1983; Prillaman, 1981) failed to support the conclusion that LD students are less likely to be accepted and/or more likely to be rejected. Prillaman (1981) examined

the social status of 362 students (grades 1-6), 28 of whom were learning disabled and receiving resource room intervention, but who were mainstreamed into regular classrooms during part of the school day. When the social status of the 28 LD students was compared on a positive nomination measure to that of the remaining non-LD children, no significant differences were found for social acceptance at any of the age levels. In direct contrast to Siperstein et al. (1978), chi square analyses showed no group differences between the number of "stars", but found 32% of the LD sample in the "isolate" category, as compared to 16% of the non-LD sample. The Prillaman (1981) findings indicate that a greater percentage of LD students are social isolates, as they are less likely to receive positive nominations, but the author points out that the results do not necessarily suggest that the group is rejected. Isolation is not equivalent to rejection, nor is rejection required for fewer nominations. Isolation reflects few positive nominations, whereas rejection reflects active dislike, which is measured by negative nominations or ratings of 1 on a 1 to 5 scale. Furthermore, Prillaman concludes that the results do not support the hypothesis that LD children rate significantly lower in terms of popularity

and are all more rejected by their peers. Rather, some LD students may in fact be as accepted by their peers as those who are not classified as LD.

In another study, Bursuck (1983) asked students to indicate classmates whom they "especially liked". Using a comparison group of low-achieving students (matched on classroom and reading achievement), no significant differences in the peer-nomination scores of LD students were found. The findings suggest that LD students are not less popular, compared to other students who are experiencing academic problems. In this case, achievement, not handicap, may be mediating the reported differences in the social status of LD and non-LD children.

In addition to studies which utilized peer nomination measures, a few studies (Bruininks, 1978; Bruininks, Rydnars, & Gross, 1974; Bursuck, 1983; Coben & Zigmond, 1986; Perlmutter, Crocker, Cordray, and Garstecki, 1983) have used other kinds of sociometric techniques to compare the social standing of LD students, with similarly contradictory findings. For example, Coben and Zigmond (1986) found that LD students were less accepted, but not more rejected, when compared on the How I Feel Towards Others (HIFTO) rating scale (Agard,

Velman, Kaufman, & Semmel, 1978 cited in Coben & Zigmond, 1986). This instrument requires each student in a class to rate all others in the class by choosing one of four faces indicating a) acceptance b) indifference/tolerance c) rejection d) do not know. Using a 1 to 5 rating scale, on which children indicated how much they liked to play with the other children in their class, Bursuck (1983) found that children did not discriminate against LD children. There were no significant LD vs non-LD group differences. Also on a 1 to 5 rating, high school aged LD students, as a group, were found to be less well liked than non-LD students, however, a subgroup of the LD high school students were very well regarded by their classmates. Additionally, most of those LD students who were not very well liked were rated neutrally, rather than in the disliked range (Perlmutter et al., 1983).

Thus, sociometric data provided by peer ratings appear to be less conclusive about the social status of LD students among their non-LD peers. Inconsistencies in the data may in part be due to differences in sociometric techniques. Whereas peer nominations tend to measure high priority friendships, peer rating scales tend towards a more general acceptance dimension of likability (Asher & Taylor, 1981). Because of this distinction, it

is possible that a rating scale measure would reveal a more positive picture than a nomination sociometric with respect to LD children. These children may be less likely to be nominated as best friends, hence the relatively weak social status of LD children found with peer nominations measures, but they may not necessarily be more disliked. The studies may indicate that they simply are not popular enough to be nominated.

Another explanation for the low social acceptance of LD children when it is reported in the literature is that they may be less well known than their classmates; this anonymity might be expected to influence nominations more than ratings. Coben and Zigmond (1986) report findings suggesting that this is an important variable in social status. Specifically, the HIFTO rating scale results revealed that LD students were not only less well accepted but they were significantly less well known than their non-LD classmates. They found that with peer nominations, LD students were less likely to be accepted and less likely to be rejected. Furthermore, the authors suggest that other studies that report the low sociometric status for LD children may reflect anonymity rather than true peer rejection.

It is difficult to draw firm conclusions about the

social status of LD students in mainstreamed environments from the studies reviewed. In their review of the literature, Dudley-Marling and Edmiaston (1985) conclude that a re-evaluation of LD students' social adjustment may be necessary. Moreover, sociometric studies do not provide information on the type of problems the child is experiencing. While it is generally accepted (albeit controversial) that young LD children are not as well regarded as their nondisabled classmates, much less is known about the reasons behind this phenomenon. In discussing social status generally, Foster and Ritchey (1979) strongly suggest that social acceptance is a function of a number of variables, including the child's physical attractiveness; his/her special skills, especially athletic ability; academic competence; and social skills. A review of the findings of some of these studies, with an emphasis on those examining these factors for LD children follows.

Numerous attributes have been evaluated in attempting to explain low sociometric status in children.

One of the most researched variables is physical attractiveness. In an early investigation of factors that influence popularity, Young and Cooper (1944; cited in Asher, Oden, & Gottman, 1977) found that a child's

facial appearance was correlated more highly (with sociometric status) than 29 other variables examined. Similarly, physical attractiveness has been found to influence peer perceptions of social behavior. Dion & Bersheid (1974) found nursery school children attributed more antisocial behavior to their less attractive peers and more self-sufficient and independent behavior to their more attractive counterparts. Additionally, the authors report that unattractive children were relatively less popular than attractive children.

Athletic ability, as well as physical attractiveness, has also been found to be important in social status among children. Siperstein et al. (1978) collected same-sex nominations for the best athlete, the best looking, and the smartest child in several fifth and sixth grade classes. They found that the LD children were less popular and were not nominated among the smartest in the class. However, in athletic ability and physical appearance factors, an equal proportion of LD and non-LD children received nominations--with a tendency for the best-liked LD children to be nominated as good athletes. The correlation between physical appearance and social status was the strongest; however, both athletic and academic abilities also correlated

significantly with social status. Combined, the three characteristics accounted for more than 35% of the variance in sociometric nominations.

In other studies, the academic achievement of children has also been found to relate to a child's social status. Bursuck and Asher (1986) found that children who were low in both achievement and sociometric status, based on peer ratings, did more poorly on measures of social behavior than did low-status, higher-achieving students. Green, Forehand, Beck and Vosk (1980) found significant relationships between positive peer nominations, negative nominations, and peer ratings of academic achievement. Specifically, children who were high on academic achievement were more accepted and less rejected, as measured by nominations and less disliked, as measured by low ratings. In the same study, teacher ratings of classroom behavior, using the Conners Teacher Rating Scale (Conners, 1969), indicated that children who were disliked and rejected by peers were also viewed negatively by their teachers. Perceived misbehavior and academic incompetence, as measured by the HIFTO and Guess Who sociometric measures, were also found to be related to the social acceptance of mainstreamed mentally retarded children in another study (Gottlieb, Semmel, &

Veldman, 1978). Peer and teacher perceptions of EMR pupils' cognitive ability, which were significantly correlated with each other, significantly predicted their social acceptance.

Children's social status has also been shown to correlate with their social behavior. Numerous studies which have examined children's social status as a function of their social behavior have found that unpopular children tend to be less prosocial and more aggressive than their more popular classmates (Carlson, Lahey, & Neeper, 1984; Ollendick, 1981; Coie, Dodge, & Coppotelli, 1982; Dodge, 1983; Putallaz & Gottman, 1981). Using positive and negative nominations, Carlson et al. (1984) found rejected second and fifth grade children to be viewed by their peers as exhibiting more aggression and acting-out behaviors. Hutton and Roberts (1982) found a significant relationship between the sociometric status of first, third, and fifth graders (as measured by peer nominations) and teacher ratings of school behavior. The most robust correlation ($r=.72$) indicated that students who were rated as exhibiting the highest number of aggressive behaviors were also those nominated by peers as children by whom they would least like to sit.

Recently, a social-cognitive model has been

developed to explain the relationship of social cognition to social behavior, particularly aggressive behavior in normal children. Dodge (1986) proposed a social information-processing (SIP) model to describe how children process social information in sequence in order to respond competently in social situations. According to the model, the first step of processing is to encode accurately the relevant social cues in the environment. The second step involves a mental representation of these encoded cues and an accurate interpretation of them. The third step requires the generation of a response repertoire, from which the child can access possible behavioral responses. The fourth step is response evaluation and choice-making. And finally, when a choice has been made, the fifth step of processing, is enactment of the chosen behavior.

Dodge (1986) purports that each stage of the model is related both independently and collectively to patterns in social behavior. In a test of the model, Feldman and Dodge (1987) administered an interview in which children responded to a situation in which they were teased by their classmates. This situation had been identified by teachers as particularly problematic for boys and girls. In their sample of 95 girls and boys in

the first, third, and fifth grades, the authors found that relative to average and popular peers, unpopular children more often interpreted peers in this situation as being hostile, they generated fewer competent and more aggressive responses to it, and they evaluated aggressive responses presented by the examiner as being more acceptable. Differences between status groups were, however, not found in group entry or ambiguous provocation situations.

As LD children have often been found to be less socially accepted and/or overly represented in socially rejected groups, they may also exhibit some of the social information processing deficiencies found in the rejected non-LD children interviewed by Feldman and Dodge (1987). It seems plausible that LD children may be more at risk for social information processing difficulties, due to their cognitive processing deficits. If so, the SIP model could potentially add much to the explanation of the social experience of LD children.

In summary, the sociometric status of LD children may be lower than that of non-LD peers. However, there are some inconsistencies in the literature relating to how sociometric status is measured and how best to interpret these discrepant findings. Additionally, some

evidence suggests that social status may be influenced by how well-known the LD students are among their classmates, a factor that has seldomly been acknowledged. Even if one accepts that LD students are less popular, little is known about the determinants of the low status. Variables which have been found to influence status in "normal" populations (social skill, physical attractiveness, athletic ability and academic performance) have not been fully explored for LD children.

The present study attempted to add to the current literature concerning the social status of LD students and to explore additional factors which might relate to social acceptance in mainstream classrooms. First, the relative social status of learning disabled children, who receive services in an LD resource classroom, but who spend at least some portion of their school day in regular classrooms, was compared to their non-learning disabled peers. It was expected that LD children would be significantly lower than their non-LD peers when compared on nomination sociometric measures but not when compared on sociometric ratings. A measure of how well the LD children are known was also collected to assess their classmates' familiarity with them. This

acquaintance score was hypothesized to be highly correlated with both sociometric variables.

Secondly, variables that might predict social adjustment in the mainstream classroom were examined, looking specifically at factors associated with physical attractiveness, athletic ability, academic performance, and social skill. These factors were assessed with both peer and teacher ratings in an LD sample and were anticipated to add significantly to the prediction of sociometric status.

Finally, in order to assess the cognitive components of learning disabled students' social behavior, an exploration of Dodge's (1986) model was conducted to determine the extent to which LD children's ability to process social information was related to sociometric status. Dodge's (1986) four processings steps were assessed in the manner described by Feldman and Dodge (1987). Consistent with their findings, lower status children were expected to show deficiencies in social information processing. Thus, the four social information processing steps were expected to add independently and collectively to the prediction of social status of LD children.

METHOD

Subjects

A group of 22 learning disabled third, fourth and fifth grade children (17 boys and 5 girls) from three southwestern Virginia public elementary schools served as the subjects of primary interest in this study. The children were all caucasian and ranged in age from 8 to 12 years, with a distribution as follows: one eight year-old, six nine year-olds, seven ten year-olds, four eleven year-olds, and four twelve year-olds. As there were typically only one or two LD children in a classroom, the subjects represent fifteen different classrooms; approximately five classrooms (7 children) from each school. Out of a total of 32 children invited to participate, the subjects represent 68% of the LD children of this age group. Approximately 18% (n=6) of the parents of LD children did not respond to letters requesting their permission for their child's participation in the study, while 13% (n=4) of the parents refused to grant permission.

Learning disabled students were identified by criteria specified by the school system (see Appendix A). On the average, these children had been labeled learning disabled for approximately 2 years ($\bar{x}=1.9$, $SD=1.4$) and

spent approximately 22 hours ($x=22.4$, $SD=4.1$) out of 30 hours per week in mainstreamed classrooms. Their mean full scale IQ, as measured by the Weschler Intelligence Scale for Children-Revised or the Stanford-Binet Intelligence Scale, was 98 ($SD= 16.4$); mean maternal and paternal education levels were 12.1 and 11.6 years, respectively. Using the Hollingshead Socioeconomic Index, the following distribution was found on the occupation levels: six parents at levels 1 and 2, 13 at level 4, 2 each at levels 5-8, and 1 parent at level 9. On the education levels, 1 parent was scored at level 1, 2 at level 2, 9 at level 3, 20 at level 4, 4 at level 5, 5 at level 6, and 1 at level 7 (Hollingshead, 1975). A summary of demographic information is presented in Table 1.

Insert Table 1 about here

Conner's Teacher Rating Scale (CTRS) subscale scores (Conners, 1969) indicate that this LD sample, as perceived by regular classroom teachers, exhibits slightly more problem behaviors relating to conduct, inattention and anxiety, than were identified in a normal sample of children of similar ages, as scores fell

between one and two standard deviations above normative means. Scores on the hyperactivity subscale did not exceed the norm (Werry, Sprague, & Cohen, 1975) (see Table 2).

Insert Table 2 about here

Sociometric data and peer and teacher ratings were collected for the classmates of these LD children in order to provide relevant non-LD comparisons. The total control sample consisted of 347 children (172 boys and 175 girls). These children were members of regular academic classrooms into which the LD students were mainstreamed.

Procedure

After obtaining permission from school administrators and classroom teachers, all LD and non-LD students completed the group administered sociometric assessment, conducted by a graduate student in psychology. Following completion of the sociometric rating, peer ratings of academic achievement, athletic ability, physical attractiveness, and social skill were obtained.

On the same day, regular classroom teachers were asked to complete ratings of academic achievement, athletic ability, physical attractiveness, and social skill on all class members, as well as the Conners Teacher Rating Scale (CTRS) (see Appendix B).

In the second phase of the study, each of the learning disabled children were individually interviewed in the manner described by Feldman and Dodge (1987). The social information processing (SIP) interviews were audiotaped and required about 20 minutes to complete. As a few parents granted permission at the close of the school year, several subjects completed the interview outside of the school setting. One LD subject was unable to be interviewed due to family relocation, thus reducing the sample size to 21 in all SIP analyses. The rest of this subject's data was collected and is included in the other analyses.

Measures

Peer friendship ratings. Peer ratings of each child in the mainstreamed classroom were gathered using a class roster listing every child's name. All children were asked to respond on a 1-5 (1=not at all, 2=a little, 3=some, 4=quite a bit, 5=a lot) scale to the question

"How much do you like to play with _____?" for each member of the class. Faces ranging from a frown to a smile accompanied the scale to help communicate the meaning of each of the numbers (see Appendix C). The scale was explained using examples of food (e.g. "How much do you like ice cream?"). Confidentiality was explained and students were encouraged not to disclose their answers to others.

An average sociometric rating of each student, by both same and opposite-sex classmates, was obtained and converted to z scores within each classroom so that standard cross-classroom comparisons could be made. Both-sex ratings, which have been shown to be moderately correlated to same-sex ratings (Asher & Hymel, 1981), were used to ensure that each target child's average rating was derived from a sufficiently large and representative pool of raters.

Rating scale sociometrics have been shown to have good test-retest reliability over a 6-week period ($r=.84$) (Oden & Asher, 1977) and have also demonstrated concurrent and predictive validity (Asher and Taylor, 1981). The standardized ratings reflect each child's general acceptance or likability among his or her classmates.

Peer nominations. On the same class roster, children were asked to circle the names of three classmates with whom they "would like to play with the most". The total number of nominations received for each child was used to indicate peer popularity; these scores also were standardized across classrooms. Nomination measures have been found to be reliable and valid, however, test-retest reliability coefficients are found to be somewhat lower than those for sociometric ratings (ranging from .67 to .84), with higher correlations occurring in the older elementary school grades (Asher and Taylor, 1981).

Peer acquaintance. Following these sociometric procedures, children were given another class roster and asked to rate how well they knew each of their classmates. Again, a 1 to 5 point rating scale was used (1=not at all, 2=a little, 3=some, 4=quite a bit, 5=a lot) (see Appendix C) from which standard scores were computed. This information was obtained to determine the extent of children's familiarity with their classmates.

Peer ratings of Personal Characteristics. Students in the mainstream classrooms rated their peers' academic achievement, physical attractiveness, athletic ability, and social skill on 1 to 5 rating scales (see Appendix D

for specific directions).

Teacher ratings of Personal Characteristics.

Similarly, teachers in the mainstream classroom rated the children's academic achievement, physical attractiveness, athletic ability, and social skill (see Appendix E).

Social Information Processing Interview. A

cognitive measure of social information processing was collected following the procedures of Feldman and Dodge (1987). The 21 LD children were asked to provide four kinds of responses to a social situation, corresponding to four of the five information processing steps (steps 2 through 5) proposed in Dodge's model (1986). The scenerio presented involves a situation where a child is being teased by some of his or her classmates. This particular situation was found to produce significant differences between high and low status children in the Feldman and Dodge (1987) study.

The following protocol illustrates the procedure. A female narrator told the following hypothetical situation (presented on audiotape, in conjunction with cartoon visual aids) involving peers who were the same gender as the subject. The scene read as follows:

"Pretend that you come to school one morning all dressed up because you have to go out with your parents

right after school. When you walk into your classroom you see two girls (boys) whom you know, and they are looking at you and laughing".

Following this story, the subject was asked to interpret the intentions of the children involved in the situation, answering the question "Why do you think the girls (boys) are laughing?" (step 2 of processing). The subject's responses were scored as 1 if the interpretation failed to ascribe hostile intent or as a 2 if the interpretation denoted hostile intent.

Next, the subject's response repertoire (essential to step 3 processing) was assessed by asking the subject to generate as many responses as possible to solve the hypothetical problem (e.g., "Now you really want them to stop laughing, so what could you do? What else could you do? What else could you do? What else could you do?"). These responses were transcribed and categorized according to content (competent, aggressive, passive, withdrawn, or appeal to authority) by two adult coders. Following the method of Feldman and Dodge (1987), three measures of this stage were coded: (1) the number of solutions generated, (2) the proportion of solutions generated that were rated by the adult coders as competent, and (3) the proportion of solutions generated

that were rated as aggressive.

The subject's response evaluation tendencies (step 4) were assessed independently of the responses s/he generated by presenting to the subject each of five possible responses to the situation (generated by Feldman & Dodge, 1987). The responses were as follows: (1) competent (2) aggressive, (3) passive-ineffective, (4) withdrawn, or (5) appeal to an authority figure for intervention. The script read as follows:

"Now I am going to tell you some things that you could do when this situation happens to you. Here is one thing; you could ignore them and not pay any attention to them (passive). What would happen if you ignored them? Do you think they would stop laughing? Here is another thing: You could get really mad and hit them (aggressive). What would happen if you hit the girls (boys)? Do you think they would stop laughing? Here is another thing: You could walk away from the girls (boys) and feel really bad because you thought they were laughing at you (withdrawn). What would happen if you walked away: Do you think they would stop laughing? Here is another thing: You could ask them why they are laughing and could explain to them why you were dressed up (competent). What would happen if you asked the girls

(boys) why they were laughing? Do you think they would stop laughing? Here is another thing: You could tell the teacher that the girls (boys) are laughing (appeal to authority). What would happen if you told the teacher? Do you think they would stop laughing?"

The subject's evaluation of each response was coded according to whether the subject indicated the response was (1) likely to be ineffective in solving the problem or (2) likely to be effective. Consistent with the procedures of Feldman and Dodge (1987), subjects' evaluations were judged to indicate a strategy would be ineffective if any portion of the response suggested a negative outcome (e.g., getting sent to the principal's office). A positive (effective) evaluation was indicated by complete endorsement of a particular response.

A second rater (blind to the subject's sociometric status) was used to compute reliability of the scoring of the above three processing steps. The audiotaped responses of a random sample of 11 subjects yielded Pearson correlation coefficients of $r=1.0$ for steps 2 and 4 and $r=.86$ for processing step 3.

Lastly, to assess the subject's enactment skills (step 5) independently from the responses that he or she generated, the subject was asked to role-play a competent

response presented by the experimenter: "One thing that some girls (boys) might do when they want somebody to stop laughing is to ask them why they are laughing. Show me how you could do that."

The subject's enactment was rated by the experimenter on a 5-point scale (5= incompetent, 1= highly competent) assessing the overall competence of the role-play. Another rater observed half of the SIP interviews and provided ratings of the fifth processing (enactment) step. A Pearson correlation coefficient of $r=.90$ reflects the inter-rater reliability on the 5 point Likert scale. It should be noted that Feldman and Dodge (1986) did not utilize two independent raters for processing step 5, as they used audiotapes as the sole means of computing inter-rater reliability. Since much non-verbal information cannot be obtained via audiotapes, the additional reliability was deemed necessary in the present study.

RESULTS

Data were analyzed in the following steps: 1> Chi square analyses were used to compare the distribution of sociometric status (SMS) groups among LD and Non-LD children; 2> analyses of variance were conducted to examine differences between the two groups on both criterion and predictor variables; 3> Pearson correlations were calculated to further describe relations between variables; 4> regression equations were completed separately for LD and non-LD groups to identify variables predictive of SMS.

Distribution of Sociometric Status

For descriptive purposes, the Asher and Dodge (1986) categorization procedure that combines nomination and rating procedures (see Appendix F for detailed description) was used to obtain the distribution of status within the LD and non-LD samples. This categorization method has been found to be particularly valid in identifying rejected children (Asher & Dodge, 1986; Ollendick, Greene, Hicks, Knowles, Francis, & Baum, 1988).

Table 3 shows the percentage of children from both groups in each of the status categories. For the Chi square analyses, the distribution of LD and non-LD within

the popular, average, neglected and controversial status groups was found not to be significantly different ($p > .05$). However, there were significantly more rejected LD children (32%) than rejected non-LD children (13%) ($\chi^2(1) = 6.55, p < .02$).

 Insert Table 3 about here

Sociometric Status of LD and Non-LD Children

A multiple analysis of variance (MANOVA) was computed to examine the effect of group (LD or non-LD) on the pattern of sociometric status, acquaintance, peer rating and teacher rating variables. As the MANOVA indicated significant group effects ($F(11,352) = 1.97, p < .03$), individual analyses of variance were conducted to compare the ratings of the learning disabled children to their non-LD peers on each of the criterion and predictor variables.

The results of comparisons of the criterion variables indicate that LD children differed from non-LD children on play and acquaintance ratings, but they did not differ in terms of peer nominations. Standardized play ratings of LD children ($z = -.39$) were significantly lower than that of their non-LD peers ($z = .02$),

$F(1,362)=3.93$, $p<.05$. Similarly, acquaintance ratings of the LD group ($z=-.48$) were significantly lower those for the non-LD group ($z=.03$), ($F(1,362)= 5.89$, $p<.01$). On standardized peer nominations, however, LD children ($z=-.27$) were not significantly different from non-LD children ($z=.02$), ($F(1,362)= 1.90$ $p<.16$), although a marginal trend was evident.

Comparisons of LD and non-LD ratings on the predictor variables of social skill, athletic ability, physical attractiveness, and academic performance were completed separately for the peer and teacher ratings. As shown in Table 4, peer ratings of social skill ($F(1,362)=6.87$, $p<.009$), physical attractiveness ($F(1,362)= 4.76$, $p<.02$), and academic performance ($F(1,362)= 16.0$, $p<.0001$) were found to be significantly lower for LD than non-LD groups. A comparison of peer ratings of athletic ability ($F(1,362)= .95$, $p<.33$), however, did not yield significant group differences.

Teacher ratings of the same four predictor variables revealed that teacher perceptions of physical attractiveness ($F(1,362)= 1.65$, $p<.20$) and athletic ability ($F(1,362)= .97$, $p<.32$) were not significantly different for the LD children than they were for the non-LD children. However, teacher ratings of academic

performance ($F(1,362) = 6.91, p < .009$) and social skill ($F(1,362) = 10.44, p < .001$) were found to be significantly higher for non-LD children (see Table 4).

Insert Table 4 about here

Comparisons of High and Low Social Preference Groups

Based on sociometric ratings and nomination scores, LD students were divided by a median split into low and high social preference rating groups based on the description Asher and Dodge (1986) (see Appendix F). Essentially, social preference is determined by subtracting the number of "1" ratings from the number of positive nominations. A MANOVA was computed to examine the effect of group on the pattern of composite peer, teacher and SIP variables. Because the MANOVA barely missed statistical significance ($F(3,17) = 3.07, p < .056$), a conservative approach to conducting followup analyses was taken. Composite peer, teacher, and SIP scores were compared prior to comparing individual peer, teacher, and SIP items as a means of reducing the chances of making Type 1 errors. These analyses revealed significant effects for peer ($F(1,19) = 7.45, p < .01$), but not teacher ($F(1,19) = 1.69, p < .21$) or SIP ($F(1,19) = .11, p < .74$)

measures. Thus, individual peer (but not teacher or SIP) items were then compared using ANOVAs. As shown in Table 5, the high social preference group was found to be rated significantly higher than the low social preference group on peer ratings of physical attractiveness ($F(1,20)=12.03, p<.002$), athletic ability ($F(1,20)=8.82, p<.007$) and social skill ($F(1,20)=5.27, p<.03$). Peer ratings of academic performance were not found to be significantly different for the two groups ($F(1,20)=2.44, p<.13$) (see Table 5).

Insert Table 5 about here

Comparison of High Social Preference LD Group to Non-LD Sample

Next, the high social preference LD group was compared to the non-LD sample. When compared to the non-LD sample, the LD group was not found to be significantly different on any of the criterion variables or predictor variables (see Table 6). That is, the high preference LD group was indistinguishable from their non-LD counterparts. Although the number of subjects in these groups differed greatly, analyses of variance were justified as t-tests showed no significant differences in

sample variances.

Insert Table 6 about here

Interrelationship Among Measures.

Pearson correlation coefficients were used to assess the interrelationship among the measures collected on the LD sample. First, no significant correlations were found between the demographic variables (i.e., FSIQ, parental education, and SES) or the number of months the LD child had been in the resource program and the sociometric predictor variables. Non-significant relationships were also found between the amount of time spent in the LD/Resource classroom and both measures of social status ($r = -.18$, $p < .41$ and $-.01$, $p < .95$, for rating and nominations, respectively). In the LD sample acquaintance ratings were significantly correlated with standardized play ratings ($r = .70$, $p < .0003$) and peer nominations ($r = .55$, $p < .008$), indicating that likability and popularity were associated with how well the student was known.

Additional correlations of the predictor variables indicates that peer and teacher ratings for the non-LD sample were highly inter-related. The highest

correlations were found between peer and teacher ratings of academic performance ($r=.70$) and athletic ability ($r=.55$). Teacher ratings of social skill not only correlated highly with peer ratings of social skill ($r=.52$), but also with peer ratings of physical attractiveness ($r=.53$) and academic ability ($r=.50$), suggesting that those children whom teachers perceived as socially skilled, were viewed by their peers as being socially skilled, physically attractive and performing well academically.

In the LD sample, similar intercorrelations were found between peer and teacher ratings. Two of the highest correlations were found between peer and teacher ratings of athletic ability ($r=.80$) and social skill ($r=.84$). Teacher ratings of athletic ability and social skill also correlated highly with all peer ratings. Similarly, peer ratings of social skill correlated highly with teacher ratings of athletic ability ($r=.78$) and physical attractiveness ($r=.53$). Agreement between peers and teachers was less strong, although significant ($p<.05$), when correlating academic performance ($r=.47$) and physical attractiveness ($r=.49$) (see Table 7).

Insert Table 7 about here

Next, Pearson correlations between the criterion variables (peer ratings and nominations) and the predictor variables (peer and teacher ratings of social skill, athletic ability, physical attractiveness and academic ability) were computed for non-LD and LD students. In the Non-LD sample, all peer and teacher evaluations significantly correlated with play ratings and nominations. The highest correlations were found between peer evaluations and play ratings (ranging from $r=.64$ to $r=.83$).

In the LD sample, even higher correlations were found between peer evaluations and play ratings (ranging from $r=.74$ to $.92$). Peer evaluations significantly correlated with the nomination sociometric measure, with the exception of peer ratings of academic performance. Likewise, teacher evaluations of academic performance were the only teacher ratings that were not found to be significantly correlated with play ratings. Teacher ratings of athletic ability significantly correlated ($r=.55$) with peer nominations. No other teacher evaluation correlated with the nominations (see Table 8),

although some of the coefficients were actually higher than those for the non-LD analyses.

Insert Table 8 about here

Prediction of Sociometric Status.

For non-LD and LD students, separate multiple regression analyses were conducted to predict social status as defined by play ratings and peer nominations. For each of these two criterion variables, four stepwise multiple regression analyses were conducted for the non-LD and LD students, using peer, teacher, SIP, and composite scores, respectively, as the predictor variables.

Sociometric status: Friendship ratings. Stepwise multiple regression analyses were conducted, using the four peer ratings of social skill, physical attractiveness, athletic ability, and academic ability to predict standardized play ratings. Table 9 shows that in the non-LD sample (n=347), the most significant predictor (R square=.69) of SMS was peer ratings of social skill ($p < .0001$). Unique variance was added by peer ratings of athletic ability (R square change=.07) and physical attractiveness (R square change=.02), with a total of 79%

of the variance accounted for by the three ratings ($p < .0001$). In the LD sample ($N=22$), the most significant predictor of sociometric play ratings was peer ratings of athletic ability ($R^2 = .85$, $p < .0005$). Peer ratings of social skill also contributed uniquely to the model ($R^2 \text{ change} = .04$). Peer ratings of physical attractiveness were not found to add significantly to the prediction of sociometric status in this sample, however.

Insert Table 9 about here

Secondly, stepwise regression analyses were conducted using teacher ratings of social skill, physical attractiveness, athletic ability and academic performance as the predictor variables (see Table 10). As with peer ratings, teacher ratings of social skill were the most significant predictors ($R^2 = .22$, $p < .0001$) of social status in the non-LD sample ($n=347$). Teacher ratings of athletic ability and physical attractiveness also entered into the model ($R^2 \text{ change} = .04$, $p < .0001$ and $R^2 \text{ change} = .02$, $p < .0004$, respectively) to predict a total of 26% of the variance. Within the LD sample ($n=22$), teacher perceptions of athletic ability ($R^2 = .58$, $p < .003$) and social skill ($R^2 \text{ change} = .10$, $p < .02$)

were significant predictors of sociometric play ratings (see Table 10), accounting for 68% of the variance.

Insert Table 10 about here

Thirdly, stepwise multiple regression analyses were conducted using the four processing steps of the SIP interview to predict sociometric status. Compared to peer and teacher evaluations, the experimental measure correlated less highly with sociometric ratings (all correlations less than .35). The analysis showed none of the social information processing steps to enter significantly into the prediction equation at the .05 or .15 levels of significance.

The last regression conducted to predict play ratings utilized a composite peer rating score, a composite teacher rating score, and a composite SIP interview score as the three predictor variables. Peer and teacher scores were obtained by adding together the four standardized ratings of physical attractiveness, athletic ability, academic performance, and social skill to obtain a single peer and a single teacher score. Similarly, the total SIP score was obtained by adding the standardized scores of each of the four processing steps.

Of the three composite variables, only the composite peer rating score significantly contributed to the prediction of sociometric play ratings ($R^2=.86$, $p<.0001$). Neither teacher nor experimental composite scores added to the model (see Table 11).

Insert Table 11 about here

Sociometric status: Nominations. In general, peer ratings accounted for a smaller amount of the variance in sociometric status when the index measure was defined by the total number of nominations (most liked to play with) that each child received. The results of the multiple regression analyses, shown in Table 12, indicate that peer ratings of physical attractiveness accounted for the most variance in both the Non-LD ($R^2=.41$) and LD ($R^2=.50$) samples. Although physical attractiveness was the only variable to enter the model at the $p<.05$ level in the LD sample, athletic ability and academic performance added significantly to the model (R^2 change=.03 and .008, respectively) in the non-LD sample.

Insert Table 12 about here

Analyses of teacher ratings again revealed that when using peer nominations as the criterion variable, less variance was accounted for by the predictor variables. Teacher ratings of athletic ability ($R^2=.14$) were most significant, with social skill ($R^2 \text{ change}=.06$) and physical attractiveness ($R^2 \text{ change}=.06$) adding to account for a total of 20% of the variance in the non-LD sample. With the sample of LD children, teacher ratings of athletic ability were the only significant predictor ($R^2=.31$) (see Table 13).

Insert Table 13 about here

As in the case of play ratings, SMS as defined by peer nominations could not be significantly predicted by the SIP interview. The SIP processing steps did not enter into the prediction equation at the .05 or .15 levels of significance.

Lastly, in the composite analysis (computed as described above for the LD sample only), the composite peer rating score was a significant predictor of sociometric nominations ($R^2=.35$, $p<.005$). Composite teacher and SIP scores did not contribute independently to the model (see Table 14).

Insert Table 14 about here

DISCUSSION

One major purpose of this study was to further delineate the social status of LD children by comparing LD and non-LD students on various measures of sociometric status and a measure of social acquaintance. Often previous studies have found that the social status of learning disabled students is lower than that of non-LD students. However, these studies vary in sociometric techniques, with some using positive nominations (Prillaman, 1981), some using positive nominations and peer rating scales (Bursuck, 1983; Siperstein et al., 1978), others using positive and negative nominations (Coben & Zigmond, 1986; Garrett & Crump, 1980; Horowitz, 1981) and still others reporting a combination of positive nominations and another sociometric (Bryan, 1974; Bryan, 1976). In addition, the more recent studies reported no differences between LD and non-LD students (Bursuck, 1983; Prillaman, 1981) or found higher status for non-LD students, but related it to other factors such as higher intelligence (Horowitz, 1981) or increased familiarity (Coben & Zigmond, 1986). Peer nomination studies, which have been most frequently reported in the literature, are most suggestive of the negative status of LD students, with studies of peer ratings being less

conclusive. Because of differences in the measurements, nomination studies may be more likely to indicate group discrepancies (Asher & Taylor, 1981), as LD students may simply not be popular enough to be nominated. Therefore, it was hypothesized in this study that LD students would differ from non-LD peers less on the sociometric measure of play ratings than on "most like to play with" nominations. LD students were also hypothesized to be less well known than their non-LD peers.

Contrary to the a priori hypotheses, the social status of LD students was lower than that of non-LD peers when compared on the 1-5 Likert play ratings but not when the number of nominations they received were compared. Thus, the notion (suggested above as a possible explanation for lower status among LD children) that LD students are not popular enough to be nominated was not supported. The findings suggest that LD students are as popular or as likely to receive positive nominations, but overall, the group is not as well liked as non-LD children.

The results of a previously cited study (Perlmutter et al., 1983) are consistent with the present findings. Perlmutter et al. (1983) found in their high school sample, that LD children, as a group, were less well

liked, based on 1 to 5 point ratings. However, when the scores of individuals within the sample were examined, they found that some individuals were very well liked. Similarly, while LD children were found to be less well liked as a group in this study, the lack of significant differences in nominations indicates that some individuals within the LD sample are found to be very well liked, indeed.

The sociometric findings are also consistent with the findings of Coben and Zigmond (1986), in that LD students in the present sample were also found to be significantly less well known than their non-LD peers. The positive correlations between peer acquaintance and SMS status variables suggest that the degree of familiarity of an LD student may be a mediating factor in his/her status among peers. That is, students who spend time away from their classmates may have more difficulty establishing positive relationships in the mainstreamed environment. However, within the LD group, the amount of time mainstreamed or the number of years in the LD/Resource program was not significantly correlated with social status. Thus, while the amount of time spent within the mainstreamed environment is important for LD children, as compared to non-LD children, the variable

does not sufficiently explain differences in acceptance among LD students. As suggested by LaGreca (1981) and supported by the findings discussed below, qualitative as well as quantitative aspects of interactions are important in establishing and maintaining peer relationships.

The lower acquaintance ratings received by LD children may also partially explain the different pattern of findings for the play and nomination scores. Since acquaintance ratings were more highly correlated with ratings ($r=.70$) than nominations ($r=.55$), the significantly lower acquaintance scores received by LD children may have more negatively influenced ratings than nominations. This relationship was somewhat surprising, since it was hypothesized that low acquaintance would put a child "at risk" for not being nominated, but would not necessarily result in their receiving lower play ratings. At least for the current sample, however, being less known was significantly related to being rated as an undesirable playmate.

The greater degree of relationship between acquaintance and ratings may also result from methodological differences between ratings and nominations. Specifically, a greater number of children

determine the average rating, as children receive ratings from all of their classmates. This difference leads to greater reliability of play ratings and perhaps to a greater degree of sensitivity (Asher & Taylor, 1981). The effects of acquaintance, then, are more likely to be seen on the more sensitive measure of play ratings.

Further social status comparisons within the two groups reveal that LD students were overrepresented in the rejected category of SMS, as defined by a combined rating and nomination score. Interestingly, however, LD students were equally represented in the popular, average, neglected and controversial categories. Earlier research, which found the LD children to be equally represented as "isolates" (but underrepresented as stars) (Siperstein et al. 1978), used only positive nominations to compare the groups. The Siperstein et al. (1978) results could be more accurately reported by stating that an equal proportion of students in LD and non-LD groups were unlikely to receive positive nominations. Stated in this manner, the results are consistent with those in the present study. This is a particularly interesting finding since this is the first study to report findings related to status groups. As stated by Newcomb and Bukowski (1983), forming status groups offers richer data

because it allows a multi- rather than a unidimensional evaluation of children's social status. Previous studies, reporting mean ratings, positive nominations or negative nominations do not adequately reflect the social standing of LD children.

A second goal of this study was to add to the understanding of the reasons for social acceptance or rejection among children. Factors that had been found to relate to social status (peer and teacher ratings of physical attractiveness, athletic ability, academic performance, and social skill) were hypothesized to independently and significantly predict the sociometric status of both LD and non-LD groups, as defined by peer ratings and nominations. Also, as learning disabled students may be described as evidencing difficulty in processing academic information, an examination of their social information processing was conducted. It was hypothesized that this too, would contribute significantly to the prediction of LD students' sociometric status.

Analyses revealed that almost all of the proposed factors, with the exception of SIP measures, correlated highly with variables of social status for both LD and non-LD groups. Comparisons of LD and non-LD children

indicated that learning disabled students were perceived lower than non-LD students on several factors: peer ratings of social skill, physical attractiveness, and academic performance as well as on teacher ratings of social skill and academic performance. As Siperstein et al. (1978) found with positive nominations, peer (or teacher) ratings of athletic ability were not significantly different for the two groups.

Given that the status group comparisons suggested that the LD group was heterogeneous with regard to status (many rejected as well as popular), analyses were conducted to compare high status to low status LD children. The high social preference LD group was not found to be significantly different from the non-LD group on any of the peer ratings. Thus, although it can be said that LD students are perceived by peers as less physically attractive, less academic, and less socially skilled, as a group, these findings appear to be clouded by the effects attributable to the low status LD children. Within the LD group, popular children were similar to non-LD children in many important ways. Additionally, high status LD children were found to differ from low status LD children on all of the peer ratings. This significant finding provides further

evidence of the wide range of acceptance within the LD population.

Taking into consideration the high degree of intercorrelation among the factors relating to sociometric status, the regression analyses show what factors are the most independently related to the criterion variables. In the non-LD sample, the strongest relationships to sociometric play ratings were peer and teacher ratings of social skill (defined as how well the child gets along with other children). This relationship supports an earlier finding that teacher ratings of likeability contributed significantly to the prediction of children's play ratings (LaGreca, 1981) and suggests that peers and teachers perceptions of children's interpersonal skills are similar. Peer and teacher perceptions of athletic ability and physical attractiveness also added to the prediction of play ratings in the non-LD sample.

In the LD sample, however, the most significant predictor of play ratings by both peers and teachers was their perception of LD students' athletic ability. Eighty-five percent of the variance in play ratings was accounted for in the peer rating (58% in teacher ratings) suggesting that others' perceptions of an LD student's

athletic talent is strongly related to his or her social status--even more strongly so than for non-LD students. Peer and teacher ratings of social skill added to the models, with peer ratings of the two variables predicting a total of 89% of the variance in play ratings and teacher ratings predicting a total of 68% of the variance.

That well-liked LD children were perceived by their peers as athletically skilled, suggests that this is one of the "special skills" needed to boost social acceptance in mainstream classrooms. The greater their strengths in areas other than academics, such as athletics, the less likely the chances are of being socially rejected. Asher, Oden, and Gottman (1977) aptly stated, "One way for a child to gain peer acceptance is to be very good at something valued by other children" (p.48). Anecdotally, Asher et al. (1977) reported increasing one child's social status by teaching him a skill which was valued by his peers. For the LD child, increased athletic ability may be a special skill that can serve to "innoculate" him or her against social rejection.

The results of the nomination data suggest that athletic ability, as perceived by adults, is also predictive of peer acceptance. Teacher ratings of

athletic ability were the sole contributor to the prediction equation in the LD sample, accounting for 31% of the variance. Similarly, in the non-LD group, teacher ratings of athletic ability contributed the most unique variance, with ratings of social skill and physical attractiveness also adding to the model.

In contrast to the teacher ratings, peer ratings of physical attractiveness contributed all of the unique variance in the LD sample and most of the unique variance in the non-LD groups in the prediction of nominations. Thus, peers perceive physical attractiveness to be a particularly salient factor related to general popularity, whereas teachers may underestimate its importance. Peer ratings of athletic ability were the second highest predictor in the non-LD group, with academic performance also adding to account for a total of 45% of the variance. These results match those of Siperstein et al. (1978), who report accounting for 35% of the variance in positive peer nominations, with peer ratings of academic ability, athletic ability, and physical attractiveness. Overall, the ratings of social skill and physical attractiveness were most predictive of non-LD student ratings and nominations, respectively, while athletic ability and physical attractiveness were

most predictive in the LD sample. For the most part, however, LD and non-LD students' social status appears to be determined by similar variables.

It is interesting to note that in the prediction of both peer nominations and play ratings, teacher and peer ratings were more predictive for the smaller group of LD students than for the group of non-LD students. This finding suggests that a stronger relationship exists between the criterion and predictor variables for the group of learning disabled students. Although it is difficult to explain this pattern of findings, it could be attributable to the LD students' more limited amount of social contact. Alternatively, since a greater proportion of LD students are rejected, this group may be more predictable as they are more likely to receive extreme scores. This latter explanation is consistent with the greater standard deviation of scores on the dependent variables found with LD students. For the less sociometrically extreme non-LD students, these variables were less predictable.

The lack of any predictive value with the SIP interview is surprising. Since cognitive processing problems may be likely to generate or exacerbate social problems, LD students would seem to be at greater risk

for SIP deficits. These data suggest that LD students, unlike aggressive children, do not exhibit the social processing difficulties noted by Dodge (1986). The quality of their interaction skills may be superior to that expected by their academic difficulties. This interpretation is supported by the fact that very few of the subjects in this sample were rated as interpreting hostility, generating fewer competent and more aggressive alternatives or endorsing aggressive responses generated by the examiner. As Bursuck (1983) found in his use of hypothetical situations, LD children's responses to the items were quite prosocial and they appeared to understand what they "should" do in a problematic situation.

Social information processing deficits, as defined in this study, dealt with the constructs of aggression and/or hostility. While these LD children did not display this type of deficit, other types of SIP deficits were not investigated and therefore cannot be dismissed. Perhaps there are other information processing factors that are more salient for the social acceptance of LD students than for the group of aggressive normal children studied by Feldman and Dodge (1987).

As few subjects provided deviant responses on the

SIP measure, one may interpret the data as resulting from a lack of variability in the present sample. However, the LD children were well represented at both extremes of status groups (popular and rejected). Even when low and high status LD children in this sample were compared on SIP data, no significant differences in SIP emerged. While it is still possible that LD students were all such poor information processors that even the extreme comparison would not show significant results, this explanation appears unlikely since mean scores on the individual processing steps are similar to the mean scores of the popular children reported by Feldman and Dodge (1987). In the final analysis, at least for this sample, the SIP variables do not appear to be important in explaining low status for LD children.

Despite these important findings, this study is limited by a number of factors. First, the small sample size limits both the amount of comparison and the statistical power. Secondly, as noted by other researchers (LaGreca, 1981), LD students are a heterogeneous group of students, and LD vs. non-LD comparisons are inherently limited because of this quality. Because this study also examined within group differences, however, this criticism is less relevant.

Thirdly, some might argue that the study does not control for Halo effects associated with multiple ratings for the same sources. The lack of a one to one correlation among measures, however, suggests that children were able to discriminate among ratings. More investigation into the psychometric properties of these ratings, however, would do much to justify their use.

In summary, LD students, as a group, were found to be significantly less well accepted (as measured by play ratings), but not less popular (as measured by peer nominations) than their non-LD peers. While LD students were overrepresented in the rejected category, many LD children were as well accepted as their non-LD counterparts. Sociometric results were mitigated somewhat by the finding that LD students were also less well known by their peers. Peer and teacher perceptions of athletic ability, social skill, physical attractiveness, and academic ability were highly related to social status-- with athletic ability being particularly salient for peer acceptance of LD students.

Table 1
 Subject Demographic Information (N=22)

	\bar{x}	SD	Range
Full Scale IQ	98	16.4	74 - 131
Achievement Scores			
WRAT-reading	74	20	46 - 113
WRAT-arithmetic	87	14	49 - 115
Mother's Education	12.1	2.4	7 - 16
Father's Education	11.6	2.4	6 - 16
# of years in LD program	1.9	1.4	.5 - 6.5
Hrs./week in			
regular class	22.4	4.1	9 - 29
Hollingshead SES Index			
occupation level	4.47	2.1	1 - 9
education level	4.02	1.2	1 - 7

Table 2

Conners Teacher Rating Scale Subscale Scores

	Normals (n=291)		LD Sample (n=22)	
	\bar{x}	SD	\bar{x}	SD
Conduct Problem	.14	.35	.70	.59
Inattention-Passive	.51	.57	1.25	.69
Anxiety	.32	.39	.83	.36
Hyperactivity	.40	.55	.58	.65

Note. Normative data from Werry et al. (1975).

Table 3
 Distribution of Social Status Classifications among
 Learning Disabled (N=22) and Non-LD (N=347) Children

	LD	Non-LD	χ^2	p value
POPULAR	3 (14%)	61 (18%)	.98	ns
AVERAGE	1 (4%)	59 (17%)	2.94	ns
NEGLECTED	4 (18%)	46 (13%)	.40	ns
REJECTED	7 (32%)	45 (13%)	6.55	<.02
CONTROVERSIAL	0 (0%)	12 (3%)	1.14	ns
N/A	7 (32%)	124 (36%)	.21	ns

Table 4

Comparison of mean standard scores of predictor and criterion variable ratings for LD (n=22) and Non-LD (n=347) groups

	Non-LD x	LD x	F obs	p value
<u>CRITERION VARIABLES</u>				
Play Ratings	.02	-.39	3.93	.05
Nominations	.02	-.27	1.90	.17
Acquaintance	.03	-.48	5.89	.01
<u>PREDICTOR VARIABLES</u>				
<u>Peer Ratings</u>				
Social Skill	.03	-.51	6.87	.009
Physical Attract.	.02	-.43	4.76	.02
Athletic Ability	.009	-.20	.95	.33
Academic Perf.	.05	-.79	16.0	.0001
<u>Teacher Ratings</u>				
Social Skill	.03	-.64	10.44	.001
Physical Attract.	.02	-.24	1.65	.20
Athletic Ability	.01	-.19	.97	.32
Academic Perf.	.03	-.53	6.91	.009

Table 5
 Comparisons of mean scores for High Social Preference vs.
 Low Social Preference LD Children

	High (n=11)	Low (n=11)	F obs	p value
	\bar{x}	\bar{x}		
CRITERION VARIABLES				
Play ratings	.25	-1.03	9.9	.005
Nominations	.42	-.97	12.26	.002
Acquaintance	.15	-1.13	7.96	.01
PREDICTOR VARIABLES				
<u>Peer Ratings</u>				
Social Skill	-.11	-.93	5.27	.03
Physical Attract.	.16	-1.04	12.03	.002
Athletic Ability	.42	-.82	8.82	.008
Academic Perf.	-.42	-1.15	2.44	.13

Table 6

Comparisons of mean scores for Non-LD vs. High Social Preference LD Children

	Non-LD (n=347)	High LD (n=11)	F obs	p value
	\bar{x}	\bar{x}		
CRITERION VARIABLES				
Play ratings	.02	.25	.58	.45
Nominations	.01	.42	1.83	.18
Acquaintance	.03	.15	.18	.67
PREDICTOR VARIABLES				
<u>Peer Ratings</u>				
Social Skill	.03	-.11	.23	.63
Physical Attract.	.03	.16	.20	.65
Athletic Ability	.01	.42	1.86	.17
Academic Perf.	.05	-.42	2.62	.10

Table 7

Pearson Correlations between peer and teacher ratings

(Non-LD, N=347)		PEER RATINGS			
	Acad	Ath1	Scsk	Phys	
TEACHER RATINGS					
Acad	.70**	.26**	.40**	.38**	
Ath1	.26**	.55**	.27**	.42**	
Scsk	.50**	.37**	.52**	.53**	
Phys	.32**	.35**	.29**	.42**	

(LD, N=22)		PEER RATINGS			
	Acad	Ath1	Scsk	Phys	
TEACHER RATINGS					
Acad	.47*	.20	.26	.14	
Ath1	.67**	.80**	.78**	.80**	
Scsk	.70**	.71**	.84**	.63**	
Phys	.32	.40	.53**	.49*	

*p<.05

**p<.01

Table 8

Correlations between Peer and Teacher Evaluations and Sociometric Scores of LD (N=22) and Non-LD (N=347) Students

	Play ratings		Nominations	
	LD	Non-LD	LD	Non-LD
<u>Peer Ratings</u>				
Social Skill	.91**	.83**	.52**	.52**
Physical Attract	.83**	.83**	.71**	.64**
Athletic Ability	.92**	.73**	.55**	.58**
Academic Perform	.74**	.64**	.31	.37**
=====				
<u>Teacher Ratings</u>				
Social Skill	.72**	.48**	.36	.36**
Athletic Ability	.76**	.36**	.55**	.37**
Physical Attract	.49**	.34**	.30	.29**
Academic Perform	.21	.33**	.00	.15**

*p<.05

**p<.01

Table 9
 Stepwise Multiple Regression Findings for Sociometric
 Play Ratings with Peer Evaluations

Variable Entered	F Value of increment	Increment in R ²	p level of incr.	multiple R ²
<u>NON-LD (N=347)</u>				
Social Skill	783.58	.69	.0001	.69
Athletic Ability	105.91	.07	.0001	.77
Physical Attract.	41.75	.02	.0001	.79
=====				
<u>LD (N=22)</u>				
Athletic Ability	110.43	.85	.0001	.85
Social Skill	7.55	.04	.01	.89

Table 10

Stepwise Multiple Regression Findings for Sociometric
Play Ratings with Teacher Evaluations

Variable Entered	F value of increment	Increment in R^2	p level of incr.	multiple R^2
<u>NON-LD (N=347)</u>				
Social Skill	96.09	.22	.0001	.22
Athletic Ability	19.22	.04	.0001	.26
Physical Attract.	8.42	.02	.0004	.28
<u>LD (N=22)</u>				
Athletic Ability	27.86	.58	.001	.58
Social Skill	6.00	.10	.02	.68

Table 11

Stepwise Multiple Regression Findings for Sociometric
Play Ratings with Composite Variables (Peer, Teacher and
Experimental)

Variable Entered	F value of increment	Increment in R ²	p level of incr.	multiple R ²
<hr/>				
<u>LD (N=22)</u>				
Peer Ratings	118.59	.86	.0001	.86

Table 12

Stepwise Multiple Regression Findings for Sociometric
Nominations with Peer Evaluations

Variable Entered	F value of increment	Increment in R ²	p level of incr.	multiple R ²
<u>(NON-LD N=347)</u>				
Physical Attr.	240.67	.41	.0001	.41
Athletic Abil.	21.29	.03	.0001	.44
Academic Perf.	5.36	.008	.0196	.45
=====				
<u>(LD N=22)</u>				
Physical Attr.	20.32	.50	.0002	.50

Table 13
 Stepwise Multiple Regression Findings for Sociometric
 Nomination with Teacher Evaluations

Variable Entered	F value of increment	Increment in R^2	p level of incr.	multiple R^2
<u>NON-LD (N=347)</u>				
Athletic Abil.	53.61	.14	.0001	.13
Social Skill	24.14	.06	.0001	.19
Physical Attr.	4.24	.01	.03	.20
=====				
<u>LD (N=22)</u>				
Athletic Abil.	8.93	.31	.007	.31

Table 14

Stepwise Multiple Regression Findings for Sociometric
Nominations with Composite Variables (Peer, Teacher and
SIP)

Variable Entered	F value of increment	Increment in R ²	p level of incr.	multiple R ²
<hr/>				
<u>LD (N=22)</u>				
Peer Ratings	10.14	.35	.0049	.35

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Appendix A

Criteria for Eligibility --Specific Learning Disabilities

1. The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed (below) when provided with learning experiences appropriate for the child's age and ability levels; and
2. The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the ...areas (listed).

The areas to be considered, as stated in the regulations, are oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, and mathematics calculation or reasoning.

In order for the team to identify the student as LD, the regulations specify that the disability may not be primarily the result of:

1. a visual, hearing or motor handicap;
2. mental retardation;
3. emotional disturbance; or
4. environmental, cultural or economic disadvantage.

When the criteria shown above have been met, further indication that a student is LD are the following:

--A wide spread between verbal and performance scores (if these are provided by the individually administered test of intelligence used); OR a wide spread among scaled subtest scores on an individually administered test of intelligence;

--Difficulty in interpreting information presented visually and/or auditorily;

--Evidence of reversals in letters, words, or numbers, or in concepts;

--A cluster of the characteristics

A severe discrepancy between expected achievement and actual achievement in one or more areas of learning based on age, ability and years in school, is a key determinant for classifying students as learning disabled. Usually, a fifteen (15) point difference between ability and achievement standard scores suggests that a severe discrepancy exists.

Appendix B

Teacher Rating Scale

Name of child _____ School _____
 Teacher _____ Date _____

	Not at all	Just a little	Pretty much	Very much
1.Fidgeting	_____	_____	_____	_____
2.Hums and makes other odd noises	_____	_____	_____	_____
3.Demands must be met im- mediately;gets frustrated	_____	_____	_____	_____
4.Coordination poor	_____	_____	_____	_____
5.Restless or overactive	_____	_____	_____	_____
6.Excitable, impulsive	_____	_____	_____	_____
7.Inattentive, distractable	_____	_____	_____	_____
8.Fails to finish things he starts; (short attention span)	_____	_____	_____	_____
9.Sensitive to criticism	_____	_____	_____	_____
10.Serious or sad	_____	_____	_____	_____
11.Daydreams	_____	_____	_____	_____
12.Sullen or sulky	_____	_____	_____	_____
13.Cries	_____	_____	_____	_____
14.Disturbs other children	_____	_____	_____	_____
15.Quarrelsome	_____	_____	_____	_____
16.Mood changes quickly	_____	_____	_____	_____
17.Acts "smart"	_____	_____	_____	_____
18.Destructive	_____	_____	_____	_____
19.Steals	_____	_____	_____	_____
20.Lies	_____	_____	_____	_____
21.Temper outbursts (explosive and unpredictable)	_____	_____	_____	_____
22.Isolates himself from other children	_____	_____	_____	_____
23.Appears to be unaccepted by group	_____	_____	_____	_____
24.Appears easily led	_____	_____	_____	_____
25.No sense of fair play	_____	_____	_____	_____
26.Appears to lack leadership	_____	_____	_____	_____
27.Does not get along with opposite sex	_____	_____	_____	_____

28. Does not get along with same sex	_____	_____	_____	_____
29. Teases other children or interferes with their activities	_____	_____	_____	_____
30. Submissive	_____	_____	_____	_____
31. Defiant	_____	_____	_____	_____
32. Impudent	_____	_____	_____	_____
33. Shy	_____	_____	_____	_____
34. Fearful	_____	_____	_____	_____
35. Excessive demands for teacher attention	_____	_____	_____	_____
36. Stubborn	_____	_____	_____	_____
37. Anxious to please	_____	_____	_____	_____
38. Uncooperative	_____	_____	_____	_____
39. Attendance problem	_____	_____	_____	_____

None Mild Moderate Severe

40. Considering your total teaching experience with children of this age, how much of a problem is the child at this time? _____

Other information: _____






Appendix C

Sociometric Measures

Friendship Rating and Nomination Scale

Directions: Listed below are the names of all the children in your classroom. First, find your name and draw a line through it. O.K. Now, for each of the students listed, circle the number which best describes "How much you like to play with this person." Circle the "1" if you don't like to play with this student at all, "2" if you like to a little, "3" if you like to some, "4" if you like to quite a bit, and "5" if you like to a lot.

Now, draw a circle around the names of the 3 classmates whom you like to play with the most. Remember, only 3 names.

					
	Not at all	A little	Some	Quite a bit	A lot
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5

etc.

Acquaintance Scale

Directions: Here is another list of the students in your class. This time, circle the number which best describes "How well you know this person." Circle the "1" if you don't know them at all, "2" if you know them a little, "3" if you know them some, "4" if you know them quite well, and "5" if you know them very well.

	Not at all	A little	Some	Quite well	Very well
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5

etc.

Appendix D

Peer Ratings

Physical Attractiveness

Directions: Find your name and draw a line through it. Now, rate each person according to how good you think s/he looks. If you don't think they look good at all, circle "1"; circle "2" if you think they look good a little; "3" if they look O.K.; "4" if they look pretty good; and circle "5" if you think they look very good.

	Not at all	A little	O.K.	Pretty good	Very good
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5

etc.

Athletic Ability

Directions: Find your name and draw a line through it. Now, rate each person according to how good you think s/he is at recess games and sports. If you think they are not good at all, circle "1". If you think they are good a little, circle "2"; if they are O.K., circle "3"; pretty good, "4"; and very good, circle "5".

	Not at all	A little	O.K.	Pretty good	Very good
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5

etc.

Academic Performance

Directions: Find your name and draw a line through it. Now, rate each of your classmates on how well you think he or she does in school work. If you think they don't do well at all, circle "1"; if you think they somewhat poorly, circle "2"; if they do O.K., circle "3"; pretty well, "4"; and if you think they do very well, circle "5".

	Not at all	A Little	O.K.	Pretty well	Very well
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5

etc.

Social Skill

Directions: Find your name and draw a line through it. Now, rate each of your classmates on how well you think s/he gets along with other children. Circle "1" if you think the child does not get along with others well at all; circle "2" if you think he or she gets along kind of badly; "3" if O.K.; "4" if pretty good; and "5" if you think the child gets along with other children real well.

	Not at all	A Little	O.K.	Pretty well	Very well
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5
etc.					

Appendix E

Teacher Ratings

Physical Attractiveness

Directions: Listed below are the names of all the children in your classroom. Please rate each of the children according to how physically attractive you think the child is, using the 1-5 scale, with "1" being "not physically attractive at all" and "5" being "very physically attractive." Circle one rating for each child in your class. If any child has been omitted, please add his or her name to the list and provide a rating. Thank you.

	Not at all				Very
	1	2	3	4	5
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5
etc.					

Athletic Ability

Directions: Please rate each of the children according to your perception of their athletic ability. A "1" rating would indicate very little athletic ability, "2" a little, "3" some, "4" quite a bit, and "5" a lot.

	None				A lot
	1	2	3	4	5
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5
etc.					

Academic Performance

Directions: Please rate each of the children according to his/her academic achievement in your classroom. A "1" rating indicates very poor performance and "5" indicates excellent performance.

	Poor	Fair	Good	Excellent	Superior
	1	2	3	4	5
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5
etc.					

Social skill

Directions: Please rate each of the children according to how socially skilled you think the child is, using the 1-5 rating, with "1" being "not at all socially skilled" and "5" being "very socially skilled." Social skills are those skills "which allow one to initiate and maintain positive relationships with others, contribute to peer acceptance and to a successful classroom adjustment, and allow one to cope effectively and adaptively with the social environment."

	Not at all				Very
Jane Doe	1	2	3	4	5
John Doe	1	2	3	4	5
etc.					

Appendix F

A combination of peer ratings and nominations were examined to obtain social preference and social impact scores. Using the procedure described by Asher and Dodge (1986), the number of positive nominations received by a child was calculated and transformed into standardized Positive Nomination (PN) scores within each classroom. Then, a lowest play rating (LPR) score was computed by tallying the frequency of "1" ratings in the classroom, and transforming the total into a standardized LPR score within each classroom. A social preference (SP) score was then computed by subtracting the standard LPR score from the standard PN score. Similarly, a social impact (SI) score was computed by adding the standard PN and LPR scores.

The procedures described by Asher and Dodge (1986) allowed children to be classified into one of the following groups: popular, average, neglected, rejected or controversial. Popular children were those who received a SP score greater than 1.0, a PN score greater than 0, and an LPR score less than 0. Average children received an SP score between -.5 and .5, and an SI score between -.5 and .5. Rejected children received a SP score of less than -1.0, a PN score less than 0, a LPR score greater than 0. Neglected children were defined as those children receiving an SI score less than -1.0, a PN score of less than 0, and an LPR score less than 0. Finally, controversial children consisted of those who receive an SI score greater than 1.0, PN score greater than 0, and a LPR score greater than 0. This classification system was used because it allows rejected and neglected subgroups to be identified without using negative nominations, a practice which has been criticized for its potentially harmful effects.

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