

# Self-Perceptions, Motivation, and Adjustment in Children with Learning Disabilities: A Multiple Group Comparison Study

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*This study examined the self-perceptions, motivational orientations, and classroom adjustment of children with learning disabilities (LD), matched-IQ non-LD, randomly selected non-LD, and low achieving children. Elementary-age children (N = 148; 37 from each group) completed domain-specific measures of their self-concepts, perceptions of control, and motivation. Teachers rated children on motivational and competence indices and classroom behavioral adjustment. Comparisons among groups indicated that children with LD were lower in perceived cognitive competence and academic self-regulation relative to the nondisabled control groups, but were comparable to the low achieving children. Children with LD were most likely to perceive academic outcomes as controlled by powerful others. No group differences were found for general self-perceptions of control or competence. Teacher ratings of children with LD were more discrepant from those of comparison groups than were self-ratings of children with LD. The results suggest the need for matched-IQ and low achieving control groups in research on children with LD. The origin and role of both environmental inputs and self-perceptions in the adjustment of students with LD are discussed.*

School-identified students with learning disabilities (LD) make up over 40% of the special education placements (Biklen & Zollers, 1986) and represent the largest group of classified children nationally (Algozzine & Ysseldyke, 1986). Yet, those labeled LD represent but a subgroup of low achievers; children with LD are those low achievers who have been identified for special education services on the basis of presumed cognitive differences (Adelman & Taylor, 1986). Currently, there is much controversy about whether school-identified children with LD in fact differ from their low achieving nonlabeled peers (Adelman & Taylor, 1986; Algozzine, 1985; Gallagher, 1986) and whether there is benefit from highly differential educational programming (Biklen & Zollers, 1986; Ysseldyke, Algozzine, Shinn, & McGue, 1982).

The purpose of the present investigation was to examine differences between school-identified students with LD and their normally achieving and low achieving counterparts with regard to self-perceptions, motivation, and classroom adjustment. Current literature suggests

that children with LD are different from non-LD children in terms of self-concept and motivation (e.g., Ceci, 1986; Sabatino, 1982). However, most such evidence has compared children with LD with either standardization samples or normal controls, failing to address the fact that children with LD are *both* low achieving and labeled. They also typically have IQs lower than comparison groups (Torgesen & Dice, 1980). The extent to which differences are specific to LD or generalizable to low achievers, generally an unresearched question, would have important implications for educational planning. Among the specific dimensions of focus in this study are those of perceived competence, perceived motivation and control, and teacher-rated competence, motivation, self-esteem, and adjustment.

## Self-Concept

For a number of reasons, one might expect that children classified as LD would have negative global and school-related self-concepts. First, it is generally the case that children so classified have

at some point experienced considerable failure and negative competence feedback at school. These experiences would likely be internalized and represented in a more negative view of self (Sabatino, 1982). Second, many investigators have suggested that the very fact of being labeled may negatively affect self-concept directly, as well as indirectly affecting it through the mechanism of the self-fulfilling prophecy (Good, 1982; Rosenthal & Jacobson, 1968). Third, there have been suggestions that the pullout of students with LD from regular classrooms for special programs may facilitate social stigma, create discontinuities with class activities, and, accordingly, highlight a sense of difference from others (Biklen & Zollers, 1986; Reynolds & Wang, 1983).

A number of studies have, in fact, found lower self-esteem in subjects with LD compared with non-LD samples, using a variety of scales (Black, 1974; Bryan & Pearl, 1979; Larsen, Parker, & Jorjorian, 1973; Rogers & Saklofske, 1985; Rosenthal, 1973). However, these findings become less compelling with regard to children with LD in light of corresponding findings that nonclassified low achievers also differ from normally achieving children in self-esteem (Shaw, 1961; Strang, 1968; Woolf, 1965). The complexities of this issue are further demonstrated in the fact that two studies comparing children in special class placements (resource rooms or self-contained classrooms) with those whose academic difficulties warranted special placement but who had not been placed, found higher self-esteem in the placed children (Coleman, 1983; Ribner, 1980). Thus, there may be advantages of LD placement for self-concept, insofar as placement may address existing problems or create a different reference group for social comparison (Marsh, 1987).

Additionally, some studies have documented that IQ is positively associated with self-concept (Piers, 1969). Thus, IQ may represent another confluent factor in these studies.

To date, most of the studies on the self-concepts of children with LD have used generalized measures of self-esteem. Harter (1983) and others have stressed the importance of domain specificity in self-perception assessment. Two studies

have examined domain-specific self-perceptions in children with LD. Renick (1985b) found that children with LD were more negative in their self-perceptions across domains compared with non-LD children. In contrast, Lincoln and Chazen (1979) found that the more negative self-perceptions of students with LD were restricted to the cognitive domain. Neither of these studies, however, included matched-IQ or low achieving controls.

Based on prior research findings and theorizing, it was hypothesized that, because of their failure experience, children with LD would have more negative self-perceptions relative to matched-IQ and randomly selected non-LD groups but would not differ from children in the low achieving group. The expected differences were hypothesized to be strongest in the cognitive domain. To assess this hypothesis, we employed Harter's (1982) Perceived Competence Scale to obtain domain-specific scores for perceived competence in general and in the cognitive domain.

### **Motivation: Perceived Autonomy and Control**

To date, research on motivation and attribution in students with LD has been sparse (Deci & Chandler, 1986; Sabatino, 1982; Smith, 1986). Yet, as with self-concept, there are a number of reasons why differences from non-LD children would be expected. A history of school nonsuccess would be expected to decrease a child's sense of initiation and value for school (Ryan, Connell, & Deci, 1985) and undermine the interest and desire to learn. Furthermore, there is some evidence that interventions with children with handicaps tend to emphasize external contingencies and controls (Berkson & Landesman-Dwyer, 1977; Torgesen, 1986), which may lead to decreased perceived autonomy (Deci & Chandler, 1986; Ryan & Grolnick, 1986) and increased dependence on external sources of direction and reward (Grolnick & Ryan, 1987) for learning.

Evidence in support of this reasoning has been supplied by studies of both motivational indices and control attributions in LD samples. Both Renick (1985a) and Lincoln and Chazen (1979) found

low mastery motivation—that is, curiosity, desire for challenge, and independence in mastery attempts—in children with LD relative to non-LD children, using Harter's (1981) measure. With regard to control attributions, Fincham and Barling (1978) reported higher "external" orientations in children with LD versus non-LD children, while Hisama (1976) reported no differences. Again, none of these studies included low achieving or matched-IQ controls.

In the present study, we examined aspects of both motivation and perceived control in varied groups, using domain-specific measures. Motivation was assessed using Ryan and Connell's (in press) measure of self-regulation in school, while control was measured using Connell's (1985) Multidimensional Measure of Children's Perceptions of Control. It was hypothesized that children with LD would be lower in self-regulation (i.e., more dependent on external controls) and more likely to perceive powerful others as controlling success and failure outcomes relative to a non-LD control group, to a low achieving group, or to their matched-IQ non-LD counterparts.

### **Teacher Ratings**

Teacher ratings of students with LD versus non-LD students are of interest in several respects. Generally, teacher ratings of student motivation, competence, and self-esteem provide an independent source for the comparisons discussed above. Most studies on motivation and self-concept in LD samples have used student self-report exclusively. Beyond this methodological issue, however, it is important to know whether, in the eyes of teachers, children with LD differ from other groups in meaningful ways. Furthermore, classroom teachers are highly aware of those children who are classified as LD. The salience of the classification may itself result in differential perceptions, a point supported by some prior research (Delclos, Burns, & Kolewicz, 1987; Good, 1982). For example, Aloia and MacMillan (1983) found that teachers felt that children labeled educable mentally retarded would be more difficult to teach, have less potential, and be less capable than unlabeled children. We know of no research specifically examin-

ing teacher ratings of children with LD versus those low in achievement or matched in IQ.

Teachers in the current study were asked to rate individual students on dimensions of academic competence, motivation, and self-esteem. In addition, we asked teachers to indicate the extent to which they tended to prod or externally control the students in order to produce performance. Here we reasoned that students labeled as LD would elicit more external control, even when compared with other low achievers or those matched in IQ, in part as a function of the salient label itself. Children with LD were also expected to be viewed by classroom teachers as less competent and motivated than normally achieving controls, those matched in IQ, and those in a low achieving group.

An additional facet of the teacher ratings was the employment of a classroom behavioral adjustment rating scale (Hightower et al., 1986). The adjustment scale assesses the dimensions of acting-out, shy-anxious behavior, and learning problems. Previous research has suggested that learning and behavioral problems tend to co-occur (Sattler, 1982). Research on behavioral problems in children with LD has had mixed results, with some studies finding a greater number of emotional problems (e.g., Touliatos & Lindholm, 1980) in children with LD relative to non-LD controls and others finding the groups to be similar (e.g., Cullinan, Epstein, & Lloyd, 1981). However, the relative prevalence of such problems in LD, matched-IQ, and low achieving groups remains largely unexplored.

In summary, the current study was intended to examine differences between children with LD and others on dimensions of self-evaluation, motivation, teacher perceptions, and classroom adjustment, as seen by teachers. It should be noted that this study was designed to examine only school-identified children with LD and does not attempt to determine whether nonidentified low or normally achieving children actually meet criteria for learning disabilities but have not been targeted by the school district. The children with LD and the low achieving children are, thus, heterogeneous groups (Hammill, Leigh, McNutt, & Larsen, 1981). Information on character-

istics of the groups is provided in order to facilitate comparison with other studies (Keogh, 1986).

While differences were expected on most dimensions between the children with LD and randomly selected controls, many of these distinguishing characteristics were not expected to discriminate children with LD from other low achievers or those matched in IQ. Such findings would help to clarify attributes that are specific to the school-identified children with LD versus those general to low achievers. In addition, they would demonstrate the importance of low achieving and IQ-matched controls in research on school-identified LD groups.

## METHOD

### Subjects

Subjects in this study were 148 third-through sixth-grade students from a school district approximately 1 hour outside a midsized northeastern city. The school district serves students with family backgrounds ranging from lower to upper middle class, and over 90% of the families are Caucasian. Subjects were drawn from a population of approximately 500 third- through sixth-grade children. Thirty-seven children (25 boys, 12 girls; 8 third-grade, 12 fourth-grade, 10 fifth-grade, and 7 sixth-grade) composed each of four groups: learning disabled (LD), matched-IQ non-learning-disabled (matched-IQ non-LD), randomly selected (not matched for IQ) non-learning-disabled (randomly selected non-LD), and low achieving non-learning-disabled. Subjects in the second through fourth groups, respectively, were matched on a one-to-one basis to children in the LD group on school grade and gender, while only the matched-IQ group was matched on a one-to-one basis for the IQ variable. The mean educational level of parents in the sample was 12.80 years ( $SD = 2.75$ , range = 8 to 20) for mothers and 12.67 years ( $SD = 2.41$ , range = 10 to 20) for fathers.

**Learning Disabled Group.** The group with LD was composed of children who had been classified by the school district, following teacher referral and a multi-disciplinary evaluation and conference,

as learning disabled. The school district's criterion for classification was a 40% discrepancy between intellectual ability, as measured by the Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974), and academic achievement, as measured by the Woodcock-Johnson Psycho-Educational Battery (Woodcock & Johnson, 1977). In the district's procedure, both scores are standardized, and a discrepancy table, which allows for measurement error, is used to determine whether the classification criteria are met. Seventeen of the children were labeled as LD in reading only, 1 in math only, and 19 in both reading and math. All students classified as LD attained a Full Scale IQ score of 80 or greater (at least within the low average range).

Within the school district from which our sample was drawn, children classified as LD attend regular classrooms in all areas except reading and/or math, depending on their disability. All students spend 1½ hours (reading or math) or 3 hours (reading and math) per day in a resource room working with a special education teacher in a small group.

**Matched-IQ Non-LD Group.** Children in this group were matched on the basis of their scores on the Otis-Lennon Mental Ability Test (Otis & Lennon, 1970), as well as on sex and grade, to children in the LD group. The researcher who assigned subjects to this group was blind to children's achievement test scores and had available only information on the grade, gender, and IQ scores of the subjects with LD and the larger sample. All children were attending regular classes.

**Randomly Selected Non-LD Group.** The 37 children assigned to this group were randomly selected children who were the same gender and grade as children in the LD group. The researcher assigning these children was blind to IQ and achievement test scores and had available only a list of the grade levels and genders of subjects with LD and the larger sample of children. Children within this group had no other school-related disabilities.

**Low Achieving Group.** Children in this group were performing below the

25th percentile relative to their same-grade peers on either the Metropolitan Achievement Test (fourth and fifth graders) or Pupil's Educational Progress Test (third and sixth graders). Achievement test scores were standardized by grade before the children were selected. Students were assigned to this group if they were below the 25th percentile in combined reading and math scores (see Note) and were matched on grade and sex to one of the children in the LD sample. In assigning children to this group, the researcher was blind to IQ scores.

Table 1 presents the means and ranges for the Otis-Lennon IQs of children in the various groups and for achievement test scores where available. Students with LD do not take the same standardized achievement scales as children who are not so classified.

### Child Self-Report Measures

All questionnaires were administered to children in their regular classroom groups. Two experimenters were present for the administration of all questionnaires. One of the experimenters read the items aloud, while the other was available to answer questions and to assist students having difficulty responding.

**Perceived Competence Scale (Harter, 1982).** The Perceived Competence Scale was used to assess children's self-perceptions of competence and worth. This 28-item questionnaire assesses children's feelings of competence in three specific domains (cognitive, social, and physical) and general feelings of self-worth. Children decide which of two types of children, one representing a low and one a high level of competence, they are most like, then indicate whether the description is really true of just sort of true for them. The responses are scored on a 4-point scale ranging from least competent (1) to most competent (4). In the present study, only items from the Cognitive and General Worth subscales were included.

**Academic Self-Regulation Questionnaire (ASRQ) (Ryan & Connell, in press).** The ASRQ measures children's styles of regulating their school-related behavior on a continuum ranging from external

**Table 1**  
**Means and Ranges of IQ and Achievement Indices by Group**

	Group				Total population (N = 476)
	LD (n = 37)	Matched IQ non-LD (n = 37)	Randomly selected non-LD (n = 37)	Low achieving (n = 37)	
Otis-Lennon IQ					
Mean	93.7	94.5	114.2	99.5	108
Range	80-130	80-127	101-129	86-115	74-147
Achievement <sup>a</sup>					
Mean	NA <sup>b</sup>	60.2	75.8	40.1	68.8
Range	NA <sup>b</sup>	15-98.5	46-96.5	23-58.1	3.5-99

<sup>a</sup>Achievement test data (Metropolitan Achievement Test for Grades 4 and 5, New York State Pupil Educational Progress Test for Grades 3 and 6) are expressed as unstandardized percentile scores. <sup>b</sup>Achievement test scores were not available for the LD sample.

regulation to more autonomous self-regulation. The 26-item questionnaire includes reasons why children engage in behaviors such as "doing homework" and "doing classwork." Items are associated with four subscales, ranging respectively from low to high autonomy in self-regulation: External (i.e., because of teacher-imposed rules, contingencies, or sanctions), Introjected (to attain approval or avoid negative effects), Identified (for self-valued goals), and Intrinsic (because of inherent enjoyment of the activity). Alpha reliabilities for the four subscales range from .75 to .88. Scores are obtained for each subscale, then subscale scores are weighted according to their position along the self-regulation continuum to yield one score, referred to as the Relative Autonomy Index (RAI). This score represents the degree of autonomy in children's school-related self-regulation.

**Multidimensional Measure of Children's Perceptions of Control (MMPCP) (Connell, 1985).** The MMPCP is a self-report measure assessing children's understanding of who or what controls success and failure outcomes in general, and in three specific content domains (cognitive, physical, and social). Three sources of control are measured: internal (i.e., the child controls success and failure outcomes); powerful others (i.e., powerful others, such as the teacher, control such outcomes); and unknown control (i.e., the child does not know who or what controls outcomes). Children decide how true a series of statements about control are on a Likert-type scale. The focus of

the present study was on the extent of the child's belief in control by powerful others. The content areas of interest were cognitive and general.

### Teacher Rating Measures

Children's regular classroom teachers completed two rating scales for each child in the study. The teachers were not told the purpose of the study or given any indication that we were interested in specific groupings of children.

**Teacher Rating Scale (Grolnick & Ryan, 1989).** The Teacher Rating Scale was designed to assess teachers' perceptions of elementary students' competence, motivation, and self-esteem, as well as the degree to which the teacher tends to control or prod the child. This 8-item scale asks teachers how often a behavior occurs or how true a number of statements are for a given child in the areas of competence (e.g., How well does this child do in school?), motivation (e.g., How hard does this child try in school?), self-esteem (How good does this child feel about himself or herself?), and control (How much do you push this child to see that he or she does his or her classwork?).

**Teacher-Classroom Adjustment Rating Scale (T-CARS) (Hightower et al., 1986).** Children's behavioral adjustment was measured by teachers' ratings on the Teacher-Classroom Adjustment Rating Scale (T-CARS). This scale consists of 18 problem behaviors rated for severity on 5-point scales (1 = not a problem, 5 =

very serious problem). Six of the 18 items are associated with each of the following three factor clusters: (1) acting-out (aggressive, disruptive, impulsive behavior); (2) shy-anxious (shy, withdrawn, nervous behavior); and (3) learning problems (academic motivation and performance difficulties). Internal consistency coefficients range from .88 to .94 for the three subscales, while test-retest reliabilities range from .76 to .88.

## RESULTS

### Preliminary Analyses

Before examining group differences or specific hypotheses, a 4 x 2 (group x gender) analysis of variance (ANOVA) was performed on each of the child self-report variables and teacher ratings to examine main effects or interactions for the gender variable. One main effect for gender emerged on the Relative Autonomy Index derived from the ASRQ,  $F(1,147) = 4.78, p < .05$ . This finding indicated that, across groups, girls were more autonomously regulated than boys. No significant group x gender interactions were revealed. Next, a series of 4 x 4 (group x grade level) ANOVAs were conducted on outcome variables to examine any main effects or interactions for children's grade level. One main effect for grade was in evidence for cognitive powerful others' control,  $F(3,145) = 3.64, p < .01$ . Analysis of means indicated that sixth-grade children were higher in perceptions of control by powerful others than other children. There were no significant group x grade level interactions.

### Overview of Analytic Strategy for Examining Group Differences

In order to examine hypothesized differences between the LD group and each of the matched non-LD, randomly selected non-LD, and low achieving groups, a three-stage procedure was followed. First, in order to guard against spurious findings associated with the large number of dependent variables, multivariate analyses of variance (MANOVA) were conducted, with group as the independent variable and each of the sets of child self-report and teacher rating variables as the

dependent variables. The results of these analyses yielded highly significant effects of group for the child self-report set, Wilks' lambda (15,384) = 2.78,  $p < .001$ , and the teacher rating variables, Wilks' lambda (21,398) = 3.28,  $p < .001$ . Next, ANOVAs were conducted for each of the child self-report and teacher rating outcomes. These results are presented below, first for the child-administered measures and next for the teacher ratings. When appropriate, ANOVAs were followed by planned comparison  $t$  tests contrasting the LD group with the two normally achieving control groups and the low achieving group.

### Child Self-Report Measures

The ANOVA analysis with group as the independent variable and cognitive perceived competence as the dependent variable was significant (see Table 2 for  $F$  values). Planned comparison  $t$  tests (see Table 2 for means and standard deviations by group) indicated that children with LD perceived themselves as significantly less competent in the cognitive domain than their matched-IQ counterparts,  $t(72) = -2.17$ ,  $p < .04$ , and than the randomly selected control group,  $t(72) = -3.96$ ,  $p < .001$ . However, as predicted, there was no significant difference between the LD and low achieving groups,  $t(72) = -1.32$ ,  $p < .20$ .

The ANOVA for general self-worth was nonsignificant. Thus, no further analyses on this variable were conducted.

Next, group differences were examined for autonomy in children's self-regulation by testing for group differences in children's scores on the Relative Autonomy Index derived from the ASRQ. As indicated in Table 2, there was a significant group effect for the RAI. Children with LD were significantly less autonomous than the random non-LD controls,  $t(72) = 3.38$ ,  $p < .001$ , but, contrary to prediction, were not significantly different from either the matched-IQ or low achieving children.

The ANOVA examining group differences in cognitive powerful others control was significant. Results revealed that children with LD were higher in perceived control by powerful others than the random non-LD group,  $t(72) = 3.49$ ,  $p < .001$ , and higher than children in the

**Table 2**  
Means, Standard Deviations, and  $F$ -Values for Dependent Variables by Group  
( $n = 37$  for each group)

	Group				$F$ (3,144)
	LD	Matched-IQ non-LD	Randomly selected non-LD	Low achieving	
<b>Self-Report Variables</b>					
Cognitive Perceived Competence	2.54 <sub>a</sub> (.54)	2.84 <sub>b</sub> (.63)	3.05 <sub>b</sub> (.56)	2.72 <sub>a</sub> (.65)	3.28*
General Perceived Competence	2.86 (.43)	2.87 (.69)	2.96 (.56)	3.03 (.49)	.66
Cognitive Powerful Others Control	2.29 <sub>a</sub> (.93)	1.90 <sub>c</sub> (1.05)	1.62 <sub>b</sub> (.67)	1.81 <sub>b</sub> (.72)	4.37**
General Powerful Others Control	2.70 (.79)	2.52 (.85)	2.68 (.78)	2.43 (.81)	1.02
Relative Autonomy Index <sub>a</sub>	-2.37 <sub>a</sub> (1.78)	-2.01 <sub>a</sub> (2.19)	-.60 <sub>b</sub> (2.49)	-1.47 <sub>a</sub> (2.46)	5.32**
<b>Teacher Rating Variables</b>					
Teacher-Rated Competence	1.81 <sub>a</sub> (.69)	2.61 <sub>b</sub> (.60)	3.01 <sub>b</sub> (.75)	2.34 <sub>b</sub> (.64)	17.70***
Teacher-Rated Motivation	2.34 <sub>a</sub> (.69)	2.85 <sub>b</sub> (.77)	2.89 <sub>b</sub> (.81)	2.66 <sub>c</sub> (.72)	3.53*
Teacher-Rated Self-Esteem	2.28 <sub>a</sub> (.69)	2.79 <sub>b</sub> (.66)	3.11 <sub>b</sub> (.70)	2.68 <sub>b</sub> (.66)	7.53***
Teacher-Rated Control	2.78 <sub>a</sub> (.69)	2.23 <sub>b</sub> (.90)	2.15 <sub>b</sub> (.87)	2.38 <sub>b</sub> (.66)	4.45**
Acting-Out	1.75 <sub>a</sub> (.84)	1.58 <sub>a</sub> (.76)	1.61 <sub>a</sub> (.87)	1.32 <sub>b</sub> (.44)	2.32
Shy-Anxious	1.91 <sub>a</sub> (.88)	1.62 <sub>a</sub> (.72)	1.36 <sub>b</sub> (.47)	1.61 <sub>a</sub> (.67)	3.57**
Learning Problems	3.06 <sub>a</sub> (1.04)	2.21 <sub>b</sub> (1.02)	1.81 <sub>b</sub> (.91)	2.35 <sub>b</sub> (.93)	9.47***

Note. Standard deviations are in parentheses. Means with subscripts of  $a$  do not significantly differ from the mean of the LD group. A subscript of  $b$  denotes a mean significantly different from the LD group at  $p < .05$ , while a subscript of  $c$  denotes a difference from the LD group at  $p < .10$ .

<sup>a</sup>Possible range of scores for Relative Autonomy Index is -9 (highly external) to +9 (highly autonomous).

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

low achieving group,  $t(72) = 2.52$ ,  $p < .01$ . There was a nonsignificant trend for the LD group to be higher than the matched-IQ controls,  $t(72) = 1.63$ ,  $p < .11$ . There was no group difference for general powerful others control, as indicated by a nonsignificant  $F$  for the ANOVA analysis.

### Teacher Rating Measures

Group differences in teachers' perceptions of children's competence, as assessed by ratings on the Teacher Rating Scale, were examined first. The ANOVA results were highly significant, as expected (see

Table 2). Children with LD were rated as significantly less competent than all other groups; the matched control,  $t(72) = -5.00$ ,  $p < .001$ , the random control,  $t(72) = -6.87$ ,  $p < .001$ , and the low achieving group,  $t(72) = -3.40$ ,  $p < .001$ . Ratings of learning problems, derived from the T-CARS, showed the same pattern. Children with LD were rated as having significantly more learning problems relative to the matched control,  $t(72) = 3.31$ ,  $p < .01$ , random control,  $t(72) = 5.27$ ,  $p < .001$ , and low achieving group,  $t(72) = 3.03$ ,  $p < .004$ . The results provide validity for group composition. By definition, all groups should differ on

these competence and learning indices.

The *F* for teacher ratings of motivation was significant. In contrast with the results for the child self-report of motivation, children with LD were rated as less motivated than both the matched control group,  $t(72) = -2.82, p < .004$ , and the random control group,  $t(72) = -2.97, p < .001$ . There was a marginally significant trend for teachers to rate students with LD as less motivated than children in the low achieving group,  $t(72) = -1.89, p < .06$ .

The ANOVA for ratings of teacher control also proved significant (see Table 2). Children in the LD group differed from each of the other groups: the matched control group,  $t(72) = 2.78, p < .007$ , random control group,  $t(72) = 3.33, p < .001$ , and low achieving group,  $t(72) = 2.51, p < .01$ , with teachers reporting that they provided more control in class to the children with LD. There was also a significant effect for teachers' ratings of children's self-esteem. Results of *t* tests revealed significant findings for all group comparisons. Teachers rated the students with LD as lower in self-esteem than the matched controls,  $t(72) = -3.11, p < .004$ , the random controls,  $t(72) = -4.95, p < .001$ , and the low achieving children,  $t(72) = -2.49, p < .02$ .

Finally, teachers' ratings of children's behavioral adjustment on the subscales of acting-out and shy-withdrawn were examined. The *F* for the ANOVA conducted on ratings of children's acting-out was marginally significant ( $p < .07$ ); however, *t* tests were conducted for hypothesized differences. Children with LD were rated as displaying more acting-out behavior than the low achieving group only,  $t(72) = 2.66, p < .003$ . The ANOVA for shy-anxious behavior was also significant, with teachers rating children with LD as more withdrawn than the random control group,  $t(72) = 3.17, p < .003$ , but as equivalent to the matched control and low achieving children.

## DISCUSSION

While psychologists and educators have formally and informally acknowledged the important role of self-perceptions and beliefs in maintaining and

exacerbating the school adjustment difficulties of children with LD, pervasive problems in the research literature have limited its contribution to knowledge about these children. Among the problems noted in studies with the LD population are a failure to match control groups for IQ, and a tendency to sample nondiagnosed children (Torgesen & Dice, 1980). With regard to self-perceptions, problems have included a lack of attention to domain specificity and a paucity of work in the area of achievement motivation. The present study sought to address some of these issues by examining the self-perceptions and motivation of school-diagnosed children with LD relative to matched-IQ non-LD, randomly selected control children, and a group of nondiagnosed low achievers.

Descriptive characteristics of the four groups support the suggestion of Torgesen and Dice (1980) that, despite the criteria that LD-labeled students attain a Full Scale IQ of at least low average, children with LD are, on the average, lower in IQ than their school population. This finding becomes especially relevant when considered in the context of the results of this study. For the self-related variables examined, in some cases children with LD differed from our randomly selected control group but did not differ from one or both of the other groups. Thus, failure to control for the IQ variable may lead to a biased view of whether the motivational and self-concept issues that psychologists and educators face with regard to children with LD are specific to this group. This issue was even more apparent for comparisons between the children with LD and the low achieving children. Our findings clearly underscore the need for relevant control groups when examining the characteristics of school-identified children with LD.

Comparisons between children with LD and other children were revealing in providing a picture of the motivational and self-perception profiles of children with LD. With regard to children's perceived competence, our findings suggest that children with LD see themselves as less competent than a matched-IQ control group. By contrast, the academic self-perceptions of the children with LD did not significantly differ from those of the low achieving children. These find-

ings support Harter and Connell's (1984) model of self-related cognitions and affects that identifies achievement as the point of origin of school-related self-perceptions and underscores the key role of environmental feedback in children's cognitive perceptions of competence.

For both general perceived competence and general control perceptions, there were no group differences. One possible explanation for these somewhat surprising findings is that students with LD may derive their general self-perceptions from areas other than school. Other research (e.g., Harter, 1983) has suggested that the emphasis and importance placed on a given domain may be an important determinant of whether performance in the domain will have an impact on self-worth. Given students' lack of a feeling of autonomy, it is likely that they do not have a sense of personal value for scholastic endeavors. This theory is supported by the finding that there was a nonsignificant correlation between cognitive perceived competence and self-worth ( $r = -.08, ns$ ) within the LD group, while for each of the other groups there was a strong positive correlation ( $r$ s ranged from  $.59, p < .001$ , to  $.68, p < .001$ ). Capitalizing upon what may be an adaptive capacity to sustain feelings of worth (Covington & Beery, 1976), psychologists and educators may be able to focus on building confidence in areas in which the student feels competent or worthy.

For students with LD, a pattern of findings suggesting a self-perpetuating cycle emerged with regard to the issue of school-related control. Children with LD were somewhat more likely than the matched control group and significantly more likely than the low achieving group to see control of success and failure outcomes as resting in the hands of powerful others. Teacher ratings suggested that more control is provided to children with LD who are seen as poorly motivated and as displaying behavioral problems, especially acting-out, in the classroom. Thus, in part because of behavioral difficulties, a cycle whereby children depend on teachers for their source of motivation and where teachers must continually provide it is perpetuated.

Generally, the LD group differed from the low achieving group more on teacher

ratings than on child self-reports. This was true for teacher ratings of motivation, self-esteem, and competence. This suggests that teachers perceive children with LD as especially problematic. Differences in children's self-beliefs and affects were most evident between normally and low achieving (including LD) children rather than the low achieving children and children with LD. While these results question the impact that the LD label may have on children, it is possible, as some have suggested (e.g., Coleman, 1983), that students begin to be affected by the label sometime after elementary school. In addition, the behavioral difficulties noted in the LD group may at least partially explain teachers' differential perception of the groups.

A number of tentative conclusions can be drawn from this study. First, research on the LD population would benefit from the inclusion of matched-IQ and low achieving controls. Second, many of the motivational and self-evaluative problems that children with LD have may be nonspecific (i.e., they may be apparent in other children who have difficulties in learning). This issue raises the complex question of whether resources should be targeted to the broader population of children having difficulties in school, or even if resources should be put into making "all education more special" (Algozzine & Ysseldyke, 1986, p. 397). In any case, attention to children's motivational and emotional adjustment in the school assessment process could facilitate identification of low achieving children with special needs, whether or not they qualify for an LD placement.

We would like to end with a note of caution. The control groups we used were not completely "pure" (e.g., our low achieving group was somewhat lower in IQ than the randomly selected control). However, we did not attempt to correct for this since we wished to identify a representative group of low achieving children, thus making the results generalizable to the population of low achieving children within a middle class, suburban/rural population. Nevertheless, comparisons between groups should be made with some caution. In addition, because the students with LD did not take a comparable achievement test, we

were not able to compare the actual achievement levels of our low achieving and LD groups. Furthermore, ideally, one would like to obtain individual IQ assessments of all children. Because of school constraints, the Otis-Lennon (a group-administered IQ test) was used to match children on IQ. Nevertheless, it is hoped that this study will serve as a stimulus for future research on the motivational and self-related characteristics of the LD population.

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#### NOTE

A number of researchers (e.g., Siegel & Heaven, 1986) have advocated the use of percentiles rather than years below grade level to define both low achievement and ability/achievement discrepancies.

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