SOCIAL SKILLS INTERVENTIONS FOR INDIVIDUALS WITH LEARNING DISABILITIES

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Abstract. **Social skill deficits have become a defining characteristic of students with specific learning disability (SLD). Attempts have been made to enhance social functioning through structured training approaches. The effectiveness of these efforts was evaluated in a quantitative research synthesis (meta-analysis), which revealed a "small" effect with very few differences among teachers, peers, or students with SLD themselves who judged the efficacy of training. The relatively modest effects are discussed in relation to a number of theoretical psychometric and design issues that might account for the limited treatment outcomes.**

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During the 1970s, increased attention was directed at the social-emotional side of "specific learning disability" (SLD). It soon became evident that students with SLD were characterized by social skill deficits surrounding the ways individuals (a) view themselves, (b) are viewed by others as socially competent, (c) are viewed as effective in social interactions, and (d) behave in social situations (Bryan, 1991). Social skill deficits assume importance because of their potential to adversely affect, not only the social domain but also the achievement domain (LaGreca & Stone, 1990). Thus, the complex interactions may produce significant difficulties (Gresham & Elliot, 1989) that persist beyond the elementary and secondary school years (Gerber & Reiff, 1994).

Social Skill Deficits and SLD

Several comprehensive reviews have described the social functioning of students with SLD (e.g., LaGreca & Vaughn, 1992; Pearl, 1992; Swanson & Malone, 1992). In concluding their review, Hazel and Schumaker (1988) suggested that, "social problems are a reality for a significant number of LD youths" (p. 337). The potential problems cover a wide spectrum and may include difficulties in social competence (Gresham, 1988); social cognition (Maheady & Sainato, 1986); social behavior (Thompson & Kronenberger, 1990); social relationships (Pearl, Donahue, & Bryan, 1986); peer status (Wiener, 1987); self-concept (Chapman, 1988); interpersonal skills (LaGreca, 1987); social adjustment (Bruck, 1986); classroom behavior (Bender & Smith, 1990); communicative competence (Donahue, Pearl, & Bryan, 1983); motivation (Licht & Kistner, 1986); anxiety (Margalit & Zak, 1984); and locus of control (Bryan & Pearl, 1979).

Kavale and Forness (1995) found this array of social skill deficits to be a prominent feature of SLD, with about 75% of students with SLD manifesting deficits in the social skill area that differentiate them from their non-SLD counterparts. The levels of differentiation were consistent across evaluators (teachers, peers, and students with SLD themselves) and across individual social skill deficit. However, while social skill deficits appear to be significant correlates of LD, difficulties remain in specifying the nature of the relationship between social skills and SLD because of limited insight into how cognition, language, memory, and perception

interact to influence social ability. Fortunately, the investigation of social skill deficits as primary and secondary influences on school performance continues with enhanced understanding about the role of social skill deficits in the SLD construct (e.g., Bryan, 1997; Sridhar & Vaughn, 2001; Vaughn, LaGreca, & Kuttler, 1999).

The increased recognition of social skill deficits in describing SLD led the Interagency Committee on Learning Disabilities (see Kavanagh & Truss, 1988) to include social skill deficits as a primary form of SLD: "Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities, or *of social skills*" (p. 550). Although the merits of including social skill deficits in the definition of SLD are open to question (see Forness & Kavale, 1991), social skill deficits have become a primary target for remediation. Consequently, social skills training has become a major intervention activity for students with SLD.

Social Skills Training

The rationale for social skills training is predicated on its importance for academic and vocational success as well as long-term adjustment (Vaughn, 1985). Social skill deficits may occur either because a skill has not been learned and thus cannot be performed, or because a competing deficit (e.g., anxiety) inhibits the acquisition or performance of a particular social skill. To promote more effective social functioning, a number of structured social skill training programs have been developed.

To assess the validity of these programs, Schumaker, Pederson, Hazel, and Meyen (1983) advocated asking the following questions: (a) Does the program promote social competence? (b) Does the program accommodate the learning characteristics of students with SLD? (c) Does the program target the social skill deficits of students with SLD? (d) Does the program teach skills in a situational context? and (e) Does the program incorporate instructional methodologies found to be effective for students with SLD? Further, to help select appropriate social skills training programs, Sugai and Fuller (1991) developed a decision model that uses a series of questions to evaluate background, assessment, and instructional features. Examples of social skill training programs are listed in Table 1.

Social skill training programs typically include a comprehensive assortment of skills that cover areas such as social problem solving, friendship, conversation, planning, and dealing with feelings. Table 2 lists

Table 1
Examples of Social Skills Programs

ASSET: A Social Skills Program for Adolescents with Learning Disabilities
DUSO (Developing Understanding of Self and Others)
Learning to Get Along
PALS: Problem-Solving and Affective Learning Strategies
The SCORE Skills: Social Skills of Cooperative Groups
Skillstreaming the Adolescent: A Structured Learning Approach to Teaching Prosocial Skills
Skillstreaming the Elementary School Child: A Guide for Teaching Prosocial Skills
Social Skills Instruction for Daily Living
TAD (Toward Affective Development)
Walker Social Skills Curriculum: The ACCEPTS Program

Table 2
Examples of Social Skills

Starting a conversation	Working cooperatively
Asking a question	Dealing with frustration
Introducing yourself	Controlling anger
Asking for help	Using self-control
Learning how to listen	Keeping out of fights
Apologizing	Feeling sad
Expressing your feelings	Responding to aggression
Negotiation	Responding to failure
Goal setting	Decision-making

examples of specific skills that may be taught. The actual training procedures may include different forms and combinations of the following: (a) direct instruction, (b) coaching, (c) modeling, (d) rehearsal, (e) shaping, (f) prompting, and (g) reinforcement (e.g., Cartledge & Millburn, 1986; Combs & Slaby, 1978; Gresham, 1981). In all cases, the goal is to help develop effective social response patterns. For example, McIntosh, Vaughn, and Bennerson (1995) developed a strategy to assist students with SLD in social problem solving based on the acronym FAST. In potentially hostile social situations, the following steps are applied: F – Freeze and think about the problem; A – Alternatives to resolve the problem; S – Solution (i.e., choose the alternative that will best resolves the problem); and T – Try it. In other programs, skills are taught individually using a direct instruction approach.

Evaluating the Effectiveness of Social Skills Training

Remediating academic deficits remains the primary focus for students with SLD, but the recognition of social skill deficits has led to the increased inclusion of social skills training as an adjunct intervention. As with any intervention, the effectiveness of social skills training must to be evaluated: Is it possible to teach students with SLD to cope effectively and adaptively with the larger social environment?

A number of comprehensive reviews (e.g., McIntosh, Vaughn, & Zaragoza, 1991; Schneider & Byrne, 1985; Vaughn, 1991) have investigated the efficacy of social skills training, but the findings have been mixed and led to only tentative conclusions. Consequently, important questions remain unanswered: Is social skills training effective? If a student with SLD manifests social skill deficits, can the deficits be remediated? If there are positive effects associated with social skills training, what are their magnitudes? Are particular social skills deficits more amenable to treatment than others? How do different observers view the effectiveness of social skills training?

Meta-Analysis of Social Skills Training

Kavale and Forness (1995) (see also Forness & Kavale, 1996) used meta-analysis to gain greater insight into the efficacy of social skills training for students with SLD. Meta-analysis produces a quantitative research synthesis that offers the possibility of a more precise determination of intervention effectiveness (Lipsey & Wilson, 1993). The methods of meta-analysis are well known (e.g., Glass, McGaw, & Smith, 1981), and a number of advances have served to enhance the objectivity and verifiability of the technique (e.g., Cooper & Hedges, 1994; Hedges & Olkin, 1985; Mostert, 1996).

The initial step in meta-analysis is to collect a representative and inclusive set of research studies investigating the efficacy of social skills training. A sampling framework was constructed that included (a) online databases using the descriptors *SLD* and s*ocial skills training,* (b) reference lists from review articles, (c) bib-

liographies from individual research reports, and (d) a hand search of relevant journals. The search procedures identified a potential pool of 73 studies that was reduced by 20 because a given study was either (a) an expository article with no data, (b) an investigation without a clearly defined SLD population, (c) an investigation without an appropriate outcome assessment, or (d) an investigation with outcome data that did not permit the calculation of an appropriate meta-analytic metric. These exclusions left a pool of 53 studies of which 12 were dissertations, 2 were unpublished research reports, and 39 were published journal articles. (For a list of research studies, please contact the first author.)

The primary statistic in meta-analysis is the effect size (ES), which permits quantification and standardization of individual study findings. Methods for calculating ES outcomes may take several forms (see Bangert-Drowns, 1986). We chose the procedures suggested by Glass et al. (1981), where the ES for calculating the efficacy of social skills training was defined by:

$$ES = \frac{M_T - M_C}{SD_C}$$

where M_T = mean (average) score of the treatment (SLD) group on an outcome measure, M_C = mean (average) score of the control (comparison) group on an outcome measure, and SD_C = standard deviation of the control (comparison) group.

To enhance the ES estimates, procedures developed by Hedges and Olkin (1985) and Hunter and Schmidt (1990) were applied, when appropriate, to correct for either small sample size, violation of parametric assumptions, or artifactual variance. The Glass procedures for meta-analysis calculate an individual ES for each comparison in a study and then aggregate them into discrete groupings to investigate dimensions of interest. Before synthesis begins, the appropriate unit of analysis must be determined. Because studies may yield more than one ES measurement, analysis can be based on either individual ES regardless of the number calculated for a study or with a single ES per study based on a weighted average.

Three analyses were performed to determine which unit of analysis was appropriate. First, the correlation between ES and number of comparisons per study was calculated. It was found not to be significant (r = .062), indicating no pattern of statistical dependency. Second, the intrastudy correlation coefficient was calculated. The obtained value (p = .588) indicated that ES in the same study were more similar than ES in another study. Finally, individual ES versus weighted average study ES aggregations were tested for homogeneity (see Hedges & Olkin, 1985). The test statistic (Q) was not significant, indicating that pooling individual ES from different studies was appropriate. These analyses suggested that aggregation could proceed with individual ES.

Since the investigation did not sample from a single population, it was necessary to test whether the parameter variance was zero ($V^2 = 0$). The procedure suggested by Hedges and Olkin (1985), analogous to F tests in a random effects model, was used. The test statistic was not significant, suggesting that the studies used shared a common ES parameter and could be combined into more discrete aggregations.

Finally, it was necessary to determine whether the sample of studies obtained was large enough to answer questions about the efficacy of social skills training for students with SLD. Rosenthal (1979) addressed the so-called "file drawer" problem—potential bias caused by the greater likelihood of published research to show positive findings. Based on ES level, Orwin (1983) developed a method for calculating a fail-safe number (N_{fs}) of studies that would ensure an ES above the criterion level. The calculated N_{fs} of 17 indicates that the obtained database (n = 53) was sufficient to rule out the "file drawer" problem as a rival hypothesis.

An ES may be interpreted like a z-score, and thus shows the level of improvement associated with social skills training. An ES of +1.00 indicates a one standard deviation superiority for the training group, which means that 84% of those receiving training were better off than a comparison group receiving no training. On average, training would move subjects to the 84th percentile, which would indicate a 34 percentile rank gain on an outcome measure compared to comparison subjects who remained at the 50th percentile.

Effects of Social Skills Training

The 53 studies reviewed included 2,113 subjects who were 74% male, with an average age of 11.5 years and average IQ of 96. Across the 53 studies, 328 ES measurements were calculated, producing the following: average ES = .211 (SD = .618), ES range = -.674 to +1.190, and ES median = .182, indicating a modest positive skew, and 22% negative ES, indicating that in about one in five instances better outcomes were found for students receiving *no* social skills training. In relative terms, the ES of .211 indicates that the average student with SLD would advance from the 50th percentile to the 58th percentile as a result of social skills training and would be better off than 58% of students receiving no such training. The obtained ES (.211) is indicative of only modest gains and, according to Cohen's (1988) classification of ES magnitude, would be deemed "small."

Next, comparisons were made to determine if social skills training differed as a function of dependent vari-

ables. For example, to investigate the age of subjects, the sample was divided into two groups: subjects up to 12 years of age and those 12 years of age or older. The "older" group (ES = .244) and "younger" group (ES = .183) did not differ ($t(291) = 1.11$, $p > .25$), nor was the correlation between ES and age significant ($r = .103$).

A similar analysis investigated length of training based on the average training program lasting 10 weeks with about 3 hours of training per week. The sample was again divided into two groups representing greater or less than 30 hours of training. The "greater than" group (ES = .238) did not differ from the "less than" group (ES = .193) ($t(324) = 1.00$, $p > .25$), nor was the correlation between ES and length of training significant ($r = .118$).

Finally, research quality was investigated using criteria provided by Campbell and Stanley (1966) and Lytton and Romney (1991) to assign a rating to each study (high, medium, low). No differences emerged among studies rated low (ES = .258), medium (ES = .202), or high (ES = .187) ($F(2,235) = 2.11$, $p > .05$), nor was the correlation between these ratings and ES significant ($r = .083$). The research investigating social skills training appears generally well designed and adequate for the purposes of assessing efficacy. Thus, age, duration of training, and research quality did not appear to influence findings.

Efficacy of Social Skills Training

The outcomes of social skills training were typically rated by different individuals, most usually teachers, peers, and students with SLD themselves as shown in Table 3.

Students' self-ratings. When viewed in relation to the average ES (.211), self-ratings (i.e., students with SLD themselves) were the highest, indicating that almost 60% of students with SLD believed social skills training to be beneficial. Peers viewed effectiveness at about the average ES level, while the least improvement was perceived by teachers. All of these perceived improvement levels would be deemed "small" with the differences being nonsignificant ($F(2,325) = 1.81$, $p > .05$).

Even though rater differences were not significant, greater insight into the nature of social skills training may be gleaned from an analysis of individual raters. Students with SLD provided the most positive perception of training efficacy (ES = .244). The individual components contributing to their perception are shown in Table 4.

The largest ES was found for social status, where 65% of students with SLD perceived that social skills training enhanced their standing. According to Cohen's (1988) classification system, an ES of .379 approaches the "medium" effect level. Better than 6 out of 10 students with SLD perceived benefits from social skills training in self-concept, social problem solving, and social competence. The enhanced self-concept suggests that it may be possible to increase awareness of one's own characteristics and to improve feelings of self-worth.

The findings related to enhanced social competence and social problem solving suggested improved ability to interpret social cues and to provide appropriate responses. However, limited positive effects were found for interaction and attribution. Apparently, social skills training did not foster greater interaction and, although perceiving an enhanced social status, students with SLD remained relatively isolated from peers and teachers. With respect to attribution, social skills training apparently did not change the external locus of control and students with SLD continued to believe

Table 3
Effects of Social Skills Training Observed by Different Raters

Rater	Mean ES	Standard Error of ES	Number of ES	Percentile Equivalent	Power Rating
Self	.244	.063	117	59	Small
Peers	.205	.064	138	58	Small
Teachers	.163	.091	73	56	Small

Table 4

Effects of Social Skills Training on the Self-Evaluations of Students with Specific Learning Disability

Component Skill	Mean ES	Standard Error of ES	Number of ES	Percentile Equivalent	Power Rating
Social Status	.379	.126	16	65	Medium
Self-Concept	.280	.128	24	61	Small
Social Problem Solving	.279	.210	11	61	Small
Social Competence	.265	.088	30	61	Small
Interaction	.188	.125	17	58	Small
Attribution	.079	.173	19	53	Small

that success was associated with luck rather than effort or that failure was associated with a lack of effort. There were, however, no differences among the six outcome dimensions ($F(5,111) = 2.19$, $p > .05$), suggesting that, although the differences spanned about one third SD, all outcomes were, in actuality, modest and must be viewed in the context of limited treatment efficacy.

Peers. Peer evaluations of social skills training included the components shown in Table 5.

Peers found the greatest advantage for social skills training in the area of communicative competence, where about 60% of students with SLD were perceived as demonstrating enhanced understanding about the dynamics of communication in social settings. Modest effects were found for five areas concerned with social integration. Almost 6 out of 10 students with SLD were viewed as being somewhat less rejected and more accepted. Additionally, social skills training produced more interaction, enhanced cooperation, and improved friendships but, since the ES in these areas clustered around the overall average (.211), there were no particular advantages for any of these dimensions accruing from training.

In contrast to the self-perceptions of students with SLD, peers did not appear to change their views about the lower social status of their counterparts with SLD even though peers appeared more amenable to integrating students with SLD. The differences in ES between peers and students with SLD (.126 vs. .379) was significant ($t(35) = 2.12$, $p < .05$), suggesting that the same training produced far more positive perceptions about social status when evaluated by students with SLD themselves, but the reality appears far different, at least as perceived by peers without SLD.

Teachers. For teachers, the largest effects were perceived to be associated with adjustment, as shown in Table 6 along with five other dimensions. Social interventions were perceived by teachers to improve the adjustment in better than 6 out of 10 students with SLD. The other areas evaluated by teachers were also primarily behavioral in nature and showed mixed findings. Students with SLD were perceived as being less dependent, but there was no greater interaction. Although symptoms of conduct disorder showed a modest positive effect, hyperactivity was essentially not affected by social skills training. Social skills training seems to have almost no effect on making students with SLD appear more academically competent. When compared, no differences across ES were found ($F(5, 67) = 1.43$, $p > .05$), suggesting no advantage from training for any outcome area. In general, investigations appeared to ask teachers to evaluate primarily behavioral dimensions that demonstrated limited effects from social skills training.

Judging the Effectiveness of Social Skills Training

Although social skill deficits have become an integral part of the SLD symptom complex, efforts to remediate the problems through training have met with only limited success. Only about 58% of students with SLD would evidence demonstrable effects from social skills training. The refinement of ES data across different evaluators and across social skill dimensions showed no particular instance where social skills training was more than modestly effective.

In statistical power terms, an ES of .211 is "small," but left unanswered is the question whether or not any positive effect might be practically or clinically meaningful in the contexts where the intervention is applied (Sechrest & Yeaton, 1982). Rosenthal and Rubin (1982) provided an intuitively appealing way to index practical significance in the binomial effect size display (BESD); that is, the proportion of treatment versus control subjects above a common success threshold (defined arbitrarily as the median). The BESD statistic addresses the question: What is the percentage increase in the number of successful responses to social skills training? For example, in an evaluation of the efficacy of 156 psychological, educational, and behavioral treatments, Lipsey and Wilson (1993) calculated a mean ES of .47. In BESD terms, that means a 62% success rate for the treatment group compared to a 38% success rate for the control (comparison) group. In statistical terms, an ES of .47 is termed "medium" but the 24-percentage-point spread between treatment and control success rates may also be considered "medium," and the intervention may be considered to possess *practical* significance. For social skills training, the ES of .211, in BESD terms, translates into a 55% versus 45% success rate for treatment and control groups, respectively. The 10-percentage-point spread in intervention success rates is "small," suggesting not only a small statistical effect, but also a lack of practical significance for social skills training.

Questioning the Efficacy of Social Skills Training

Social skill deficits seem to be characteristic of students with SLD but appear to be resistant to treatment. The small effects associated with social skills training seem to be at variance with the conventional wisdom, making it important to ask: Why does social skills training meet with such modest success?

Nature of program. One potential reason for the limited success of social skills training may be related to the training packages used. Almost all studies used a social skills training program designed specifically for the particular research investigation. These programs usually represented an amalgam of techniques and procedures gleaned from the literature that often presented no

Table 5

Effects of Social Skills Training on Peer Evaluations of Students with Specific Learning Disability

Component Skill	Mean ES	Standard Error of ES	Number of ES	Percentile Equivalent	Power Rating
Communicative Competence	.250	.221	19	60	Small
Acceptance	.230	.062	25	59	Small
Cooperation	.222	.128	13	59	Small
Friendship	.217	.161	13	59	Small
Rejection	.202	.172	23	58	Small
Interaction	.198	.135	24	58	Small
Status	.126	.096	21	55	Small

Table 6

Effects of Social Skills Training on Teacher Evaluations of Students with Specific Learning Disability

Component Skill	Mean ES	Standard Error of ES	Number of ES	Percentile Equivalent	Power Rating
Adjustment	.294	.184	15	62	Small
Dependency	.250	.244	10	60	Small
Conduct Disorder	.218	.207	8	59	Small
Interaction	.113	.074	17	54	Small
Hyperactivity	.074	.212	9	53	Small
Academic Competence	.049	.205	14	52	Small

clear rationale and little pilot testing. Thus, while "research" programs may possess face validity, without information about how well the program met its intended purpose, it is difficult to reliably characterize the type of social skills training provided. Although a number of potentially effective training packages are available (see Table 1), they were seldom used in the studies reviewed for the meta-analyses. Therefore, it may well be that social skills training works but that it could not be demonstrated with the intervention programs used.

Intensity of training. Besides the nature of the training programs, the intensity of training may provide another possible explanation for the modest success found in this analysis. The average duration of social skills training tended to be 30 hours or less; fewer than 3 hours per week for less than 10 weeks. Although ES and length of training were not significantly correlated, it is possible that longer training periods are necessary to produce significant change. Since the average treated student with SLD was in the 6th grade, it seems reasonable to assume that associated social skill deficits were relatively long-standing, and 30 hours of intervention may simply be insufficient to ameliorate enduring social problems. For older students with SLD, academic remediation tends to be less effective (Kavale & Forness, 1995). Consequently, it is not surprising that even intensive interventions show only modest outcomes or positive responses during some periods and not others (Vaughn & Hogan, 1994).

Measurements. Measurement issues represent another possible explanation for the modest positive effects found for social skills training. Assessing social skills has been problematic because of issues involving poor rationale for inclusion of items, dubious psychometric properties of instruments, failure to account for contextual variables that influence expression of social skills, and the like (e.g., Gresham, 1986; Maag, 1989; Vaughn & Haager, 1994). The measurement problems have been addressed in instruments like the Social Skills Rating System (Gresham & Elliott, 1990) or the Walker-McConnell Scale of Social Competence and School Adjustment (Walker & McConnell, 1988), but again, these scales were not often used in the research studies reviewed. Instead of these norm-referenced measures, most studies used criterion-referenced measures often lacking reliability and validity data to support their use. Thus, the measurement problems make it difficult to demonstrate that an intervention actually worked.

Conceptual problems. Perhaps the major reason for the limited success of social skills training is related to conceptual problems surrounding the concept of social skills. For example, there is continuing controversy over how best to define social skills (Gresham, 1986). Walker, Colvin, and Ramsey (1995) defined social skills

as a set of behaviors that (a) allow individuals to initiate and maintain positive social relationships, (b) contribute to peer acceptance and to a satisfactory school adjustment, and (c) allow an individual to cope effectively and adaptively with larger (and therefore more demanding) social environments.

Ultimately, social skills represent behaviors that are assumed to define the theoretical construct of social competence (Dodge, 1986). For example, McFall (1982) distinguished between *social competence* as a summative judgment of an individual's behavior by significant social agents (parents, teachers, peers) and *social skills* as specific actions that individuals use in responding to everyday social tasks. For social competence, Vaughn and Hogan (1990) identified four components: (a) positive relations with others, (b) accurate and age-appropriate social cognition, (c) absence of maladaptive behaviors, and (d) effective social behaviors (social skills). The effectiveness of these skills in producing positive social outcomes is the basis for making judgments about social competence.

Construct validity. As a theoretical trait, social competence must demonstrate construct validity (Cronbach & Meehl, 1955). Social competence is depicted as a set of skills gleaned from theories of social functioning, but these skills may or may not be a true and accurate depiction of what it means to be socially competent. Construct validity problems are common in efforts to define cognitive and emotional function. The concept of intelligence provides a classic example. Early attempts to validate "intelligence" through the use of psychomotor and psychophysical skills were abandoned when they were found not to correlate with other behavioral evidence of intelligence (e.g., school grades). That is, the expected and logical relationships between variables were not confirmed. Later, Binet constructed alternative tasks assumed to be logically related to intelligence, and these tasks involving complex cognitive abilities were found to be related to other variables in a manner expected of a measure of intelligence. Henceforth, intelligence was characterized by construct validity.

The construct of social competence has been integral to the definition of mental retardation (MR). The definition of MR includes two relevant and necessary conditions: low intellectual functioning and inadequate adaptive behavior. Adaptive behavior refers to the effectiveness and degree with which individuals meet the standard of self-sufficiency and social responsibility expected of their age and cultural group (Leland, Shellhaas, Nihira, & Foster, 1967). To assess adaptive behavior, a number of adaptive behavior scales were developed, but all demonstrated some technical problems (Clausen, 1972). Nevertheless, adaptive behavior scales were periodically revised to improve their psychometric characteristics. Part of the process included attempts to move away from an implied face validity to studies of construct validation. Meyers, Nihira, and Zetlin (1979) reviewed 26 adaptive behavior measures and found a number with adequate construct validity. Thus, some adaptive behavior scales reflect universal and enduring dimensions that provide confidence in judgments about social competence. Without acceptable construct validation, it is possible that whatever is being measured may be neither a critical dimension of social competence nor defined in a manner that permits a logical undergirding to what is eventually verified as social competence.

The theoretical difficulties are seen in the conceptual tension surrounding the terms *social competence* and *social skills*. Although these two terms are often used interchangeably, they should not be considered equivalent. Social competence refers to an individual's overall interpersonal functioning, but may be viewed differently. For example, Hops (1983) asserted that "competence is a summary term which reflects social judgment about the general quality of an individual's performance in a given situation" (p. 4). Another view of social competence combines social skills and adaptive behavior (Gresham, 1986), which together promote independent social functioning (Leland, 1978). A contrasting view emphasizes social interaction and reciprocity as the basis of social competence (McConnell, 1987). According to Walker et al. (1995), social competence is demonstrated when students are capable of (a) maximizing their chances of reinforcement from support networks, (b) meeting task-related demands imposed by teachers and peers, and (c) demonstrating flexibility in their social functioning

On the other hand, social skills are situation-specific behaviors that enhance effective participation in social situations. The concept of social skills from a behavioral perspective is based on the assumption that "specific identifiable skills form the basis for socially competent behavior" (Hops, 1983, p. 4). Gresham (1986) defined social skills along three dimensions: peer acceptance, behavioral skills, and social validity. For *peer acceptance*, the effectiveness of social skills training is evaluated in terms of how well peers accept the target student as measured by sociometric assessment techniques. Therefore, the higher the acceptance of the target student by peers, the more successful the training is thought to be. The *behavioral skills* definition emphasizes functional behavioral assessment of antecedents and consequences of specific behaviors in order to first define the behavioral skills in operations terms and then to provide closely targeted remedial programming. Finally, from a *social validity* perspective,

the emphasis is on the social significance and meaningfulness of social skills. Here the goal of social skills intervention is to target specific social behaviors that predict important social outcomes that are commonly measured by behavioral rating scales to evaluate judgments about student social performance.

The question of construct validity assumes even more importance when a distinction is made between social skill deficits and performance deficits. A social skill deficit implies that a child does not possess the necessary skill levels to perform in a socially competent fashion. In contrast, a performance deficit suggests that the social skill is part of the child's repertoire but is not being performed. For performance deficits, teaching is not required; rather, they require an incentive-based management approach that prompts, cues, and reinforces existing social skills. Social skill deficits, on the other hand, require direct teaching. However, without higher levels of construct validation, questions arise about what exactly is being taught and whether or not the particular skill is an important contributor to social competence.

The issue of construct validity is also a factor affecting social validity. Essentially, social validity refers to the acceptance of an individual's behavior as it conforms to community and cultural standards of conduct. Gresham (1986) postulated three components for social validity. *Social significance* refers to perceptions about the goals and purposes of social skills intervention. Therefore, there must be a clear rationale for why social skills are being taught, which social skills are being taught, and what outcomes are expected. With enhanced understanding of social competence and the nature of social skills, a stronger rationale is possible to establish behavioral efficacy levels for success in home, school, and community.

The second component of social validity is *social importance,* which refers to the nature of the behavior change accrued from training and whether or not the change makes a difference for the student with SLD. These are important considerations when it has been shown that social skills training efforts too often focus on skills that have no demonstrated relationship to improved outcomes. Several training programs such as ASSET (see Sheldon, Sherman, Schumaker, & Hazel, 1984) and ACCESS (see Williams, Walker, Holmes, Todis, & Fabre, 1989) have been very careful in the rationale and procedures used to select social skills for their curricula. These efforts, however, deal with content validity and, while there was general agreement about the importance of the skills included, significant variation existed among consumers about the relative importance attached to individual skills. These variations might be minimized with enhanced construct validation.

The final component of social validity is *social acceptability*. Are the training methods and techniques acceptable to all parties involved? Did students approve of these methods? Would these methods be used again? Again, although the answers to such questions are essentially subjective judgments, construct validation might provide a more empirical basis in making these judgments more objective.

Construct validity is also an important consideration when dealing with forms of "process" training. Social skills represent "processes" that, if deficient, are trained in an effort to enhance functioning. The enduring problem surrounding process training is that processes are unobservable, and only outcomes can be observed. What can be concluded when the product (outcome) demonstrates limited improvement? In actuality, little can be concluded because there is little insight into the process, that is, the actual internal functioning that produced the social behavior. Poor outcomes may, therefore, be due to these unobservable factors or more overt factors like measurement problems or ineffective teaching strategies.

Issues related to social skills training for students with SLD parallel similar problems in other areas of special education. Specifically, special education has a long history of limited success with process training (see Kavale & Forness, 1999) that essentially reflects the poor construct validity of the underlying "process" being trained. For example, perceptual-motor training (ES = .08) and modality-matched instruction (ES = .15) are "process" interventions that demonstrate very limited effectiveness.

A classic example of the need for construct validity when using model-based practice is found in the area of visual perception and the Frostig program. The Frostig test was designed to assess five discrete and independent visual-perceptual subareas that could be trained as needed. However, construct validation efforts could not support these five areas as distinct entities. Consequently, it was not clear exactly what was being trained except visual perception in some general sense. Not surprisingly, Frostig training showed limited effectiveness (Kavale, 1984). Until construct validation of social skills is advanced, the problems experienced in other areas of special education in defining, measuring, and training process skills will tend to limit SLD research in enhancing social functioning.

Finally, the issue of construct validation is made more difficult by the different etiologies suggested for social skill deficits in students with SLD. As Gresham (1998) noted, many social skills research studies have employed social skills interventions without regard to the etiology of the social skills deficits. Thus, another

problem in operationalizing what is meant by social skills training is the tendency to treat the symptoms rather than the underlying cause and the assumption that different underlying causes dictate different training approaches. Therefore, a clear rationale for providing social skills interventions should rest on whether they are geared (a) toward students who have never learned the skills, or (b) toward those who possess the skills but have to shape, reform, enhance, or increase the frequency of these skills. Students with SLD may well possess both acquisition and performance deficits. Acquisition deficits may be associated with developmental delays or limited social opportunities for social learning. Performance deficits may be associated with, for example, a lack of motivation, the dominance of other psychological factors, and a lack of opportunity to use the social skills they possess.

A number of possibilities exist about the way social skill deficits develop in students with SLD (Gresham, 1992). Speculation enters in various hypotheses, including the possibility that SLD leads to low self-concept and peer rejection, that poor social relationships lead to underachievement and ultimately SLD, that both SLD and social skill deficits emanate from a common neurologic origin, or that SLD increases the risk for various psychiatric disorders, suggesting that comorbidity accounts for most instances of social skill deficits found in SLD samples.

The implications for social skills training are contingent upon the position taken about etiology. For example, if low achievement leads to poor self-concept or peer rejection, remedial efforts might be better directed at the primary feature of SLD – academic deficits – and not at social skill deficits. If, on the other hand, social skill deficits themselves lead to withdrawal from academic settings and poor self-esteem in learning situations, and ultimately to SLD, then social skills training seems absolutely necessary. This, however, is the least tenuous hypothesis about the link between SLD and social problems.

The common neurologic-origin hypothesis suggests that social skill training programs may have to include a greater emphasis on linguistic, cognitive, or other components that may comprise the core of a common etiology. Additionally, there may have to be closer coordination between academic remediation and social skills training, or possibly even that social instructional techniques need to be consistent with those used for academic instruction.

The comorbidity hypothesis about the link between SLD and social skill deficits offers insights into the possibilities about who needs social skills training. It is possible that the lower mean levels of social skill deficits demonstrated in some SLD samples are accounted for primarily by a subset of students comorbid for psychiatric disorders, such as attention deficit hyperactivity disorder, conduct disorder, or depression (Forness, San Miguel, & Kavale, 1996). This possibility suggests that there is only a subset of students in SLD samples who actually respond to social skills training because the nature of their deficits may require more intensive interventions than typically provided. The problem is that social skills training for students with emotional and behavioral disorders has also proven not to be especially robust (Mathur, Kavale, Quinn, Forness, & Rutherford, 1998; Quinn, Kavale, Mathur, Rutherford, & Forness, 1999).

CONCLUSION

Social skills interventions have become a popular adjunct treatment for students with SLD. Although social skill deficits appear to be an integral part of the SLD symptoms complex, social skills training does not appear to influence significantly the social functioning of students with SLD. In light of the importance of social skills in dealing effectively with social situations, the findings revealing limited efficacy for social skills training were disappointing.

Although disappointing, social skills interventions should not be dismissed as an important adjunct intervention, however. Presently, social skills training is best viewed as an experimental intervention. The theoretical structure of social skills is incomplete resulting in problems in definition, measurement, and design. Specifically, further research is necessary to resolve issues regarding, for example, duration of training, assessment instruments, packaging of training programs, contextual variables, and interventions for subgroups of students with SLD. Thus, further specification is necessary and especially critical for a "process" training approach that carries the burden of distancing itself from earlier "special" interventions (e.g., perceptual-motor training). As suggested by Gresham (1998), social skills interventions should not be "razed" or "remodeled," but instead "rebuilt" as part of a comprehensive treatment for students with SLD. Until the rebuilding process is complete, socials skills training is best viewed as an intervention that has received limited empirical support but, nevertheless, holds promise for improving the social functioning of students with SLD.

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