

# Social Skills Training for Students With Emotional and Behavioral Disorders: A Review of Reviews

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*ABSTRACT: Teaching social skills to students with emotional and behavioral disorders (EBD) has become an accepted practice. Literally hundreds of social skills training (SST) efficacy studies for students with EBD appear in the literature. As a result, many authors have published both narrative and meta-analytic reviews of the literature. Reviews have highlighted various problem areas as targets for future research. Nevertheless, SST has subsequently often resulted in only modest changes in the social competence of students with EBD. The purpose of this article is to review the reviews on SST with students with EBD, discuss issues based on conclusions reached, and present implications for practice.*

■ The acquisition and performance of prosocial behaviors is part of normal human development (Alexander & Entwisle, 1988). Youths who lack social competence have been at risk for many difficulties, including, but not limited to, aggression, rejection by peers, academic failure, loneliness, social dissatisfaction, difficulty maintaining employment and relationships with others, mental illnesses, and contact with the legal system (Parker & Asher, 1987). Consequently, many social skill training (SST) studies have appeared in the literature during the past 25 years as a way to lessen the impact of these deleterious outcomes.

SST has been conducted with a variety of youngsters throughout the years, including those with mental illnesses; adolescents who have been adjudicated; students who are unpopular, rejected, or neglected; and students with disabilities (e.g., Forness, Kavale, Blum, & Lloyd, 1997; Nanyang & Hughes, 2002; Parker & Asher, 1987). Lack of social competence has been considered characteristic of students with emotional and behavioral disorders (EBD) (e.g., Kauffman, 2005). Many authors have discussed the relevance, effectiveness, and caveats of SST for students with EBD (e.g., Gresham, 1997, 1998; Mathur & Rutherford, 1996; Smith & Travis, 2001; Strain, 2001).

Reviewing the research on SST has become a daunting task simply because of the sheer number of published studies in existence. Therefore, it may be more judicious to review the reviews. In addition, most reviewers have pointed out methodological flaws and made recommendations for future research. A review

of reviews may provide clues about why some mythological flaws and recommendations have been addressed and others have been ignored. Reviews of SST began appearing in the mid-1980s (e.g., Ladd, 1984) and continue (e.g., Kavale, Mathur, Forness, Rutherford, & Quinn, 1997; Mathur, Kavale, Quinn, Forness, & Rutherford, 1998). Their foci have been vast and—besides different populations—included methods of skill selection, assessment techniques, training approaches, outcome evaluation, and lack of generalization (e.g., Landrum & Lloyd, 1992; McIntosh, Vaughn, & Zaragoza, 1991; Zaragoza, Vaughn, & McIntosh, 1991).

A particularly troubling issue has been the heterogeneity of participants who received SST under the umbrella terms “emotional and behavioral disorder” or “seriously emotionally disturbed.” These terms, for better or worse, are used to classify students as being eligible to receive special education services under federal and state guidelines (Forness & Kavale, 2000). Participants in many studies, however, did not meet any federal or state eligibility criteria and, instead, were those who had been diagnosed with psychiatric disorders (e.g., conduct disorder, oppositional-defiant disorder), adjudicated (e.g., juvenile delinquents), “at-risk,” or simply nominated by their teachers as having behavior problems (Maag, 2005). Consequently, all conclusions about SST for students with EBD are, to a certain extent, problematic.

Although heterogeneity of participants makes it difficult for interpretation, there are some constants. For example, Gresham

(1998) reached several conclusions from his analysis of nine reviews of the SST literature (six narrative, three meta-analytic). First, little correspondence existed between behaviors that were assessed and those targeted for intervention. Second, researchers often failed to match SST interventions to identified deficits. Third, there has been a long-standing failure of researchers to program generalization into SST studies. These conclusions were reached, however, from analyzing reviews conducted on various populations. To date, no literature has focused exclusively on conclusions garnered from reviews specifically targeting students with EBD. Therefore, this article presents the results from reviewing the reviews on students with EBD. It also discusses issues based on conclusions reached and presents implications for practice.

Before proceeding, however, it is important to set the groundwork by differentiating between *social skills* and *social competence*. Social skills are the specific behaviors targeted in SST. Social competence is a general idiom referring to the adequacy of a person's social functioning; it is typically inferred when the targeted social skills result in increased ratings of acceptance from peers and positive judgments from important others (i.e., teachers, parents, community leaders) in a youth's life (Gresham, 1998).

## Results From SST Reviews

Researchers have been investigating the effects of SST since Bandura (1977) conceptualized the skill deficit model—much of it resulting from his early investigations of modeling in the 1960s. A plethora of SST research articles with students with EBD began appearing in the late 1970s and early 1980s. Ladd (1984) was one of the first SST review articles. Since that time, there have been so many reviews that researchers have begun reviewing the reviews. For example, Forness et al. (1997) conducted what they called a "mega-analysis"—analyzing the results of meta-analyses on various interventions used in special education, including SST. Their conclusion was that SST had largely been ineffective. Besides Gresham's (1998) three conclusions described previously, he also found that the effect sizes (ESs) for the three meta-analytic reviews averaged only 0.35—a level associated with weak to moderate outcomes. The findings from these two reviews that SST, at

best, has been only marginally successful may be partially attributed to conceptual flaws in its implementation, which have been described in great detail (Maag, 2005).

It may be premature to abandon SST—especially for students with EBD. Myriad methodological nuances affect the outcome of a study, including, but not limited to, subject selection criteria, fidelity of SST implementation, type of dependent and outcome measures (specifying vs. impact), and experimental design (single subject vs. group). Therefore, this section gives a descriptive analysis of SST reviews focusing solely on students with EBD.

The following parameters were used for selecting reviews: (a) published in peer reviewed journals, (b) focused on youngsters with EBD, and (c) used school-based participants. Reviews were located using four procedures. First, a search of the social skills training data base was conducted using multiple combinations of the following descriptors: reviews/critiques of social skills training, emotional or behavioral disorder, and seriously emotionally disturbed. This search began in 1980, several years before Ladd's (1984) review appeared, and continued to October 2005. Second, an ancestor search was conducted of all reviews that met inclusion criteria. Third, references from these reviews were examined. Fourth, key journals in the area of EBD were scrutinized for titles related to SST: *Behavioral Disorders*, *Journal of Emotional and Behavioral Disorders*, *Journal of Clinical Child Psychology*, *Journal of Abnormal Child Psychology*, *Education and Treatment of Children*, *Journal of Child Behavior Therapy*, and *Journal of Behavioral Education*.

A total of 13 reviews were obtained. *Table 1* presents a summary of the reviews obtained: The reviewers, type of review, number and type of study, and major conclusions. This section presents results from the reviews.

## Type of Review

Three types of review formats were evident. Nine reviews were narrative (Ager & Cole, 1991; Coleman, Wheeler, & Webber, 1993; Holinger, 1987; Landrum & Lloyd, 1992; Mathur & Rutherford, 1991; Olmeda & Kauffman, 2003; Schloss, Schloss, Wood, & Kiehl, 1986; Templeton, 1990; Zaragoza et al., 1991), three were meta-analytic (Beelmann, Pflingsten, & Losel, 1994; Mathur et al., 1998; Quinn, Kavale, Mathur, Rutherford, & Forness, 1999), and one was "quantitative" (Singh, Deitz, Epstein, & Singh, 1991). This last review

**TABLE 1**  
**Summary of Reviews of SST With Students With EBD**

<i>Review</i>	<i>Type of Review</i>	<i>Number and Type of Design</i>	<i>Major Conclusions</i>
Ager & Cole (1991)	Narrative	22 studies 16 group design 6 single-subject design	<ul style="list-style-type: none"> <li>• Inadequate treatment specification</li> <li>• Lack of investigation on different treatment outcomes</li> <li>• Lack of generalization/maintenance</li> <li>• Need to determine optimum ranges of training time necessary</li> </ul>
Beelmann et. al. (1994)	Meta-analytic	49 studies All group design	<ul style="list-style-type: none"> <li>• Lower ESs than those obtained for general treatment evaluation for children</li> <li>• Lack of generalization</li> <li>• Lack of process analysis to clarify how children change and breadth of modifications</li> <li>• Greatest effects for at-risk groups, lowest effects for externalizing disorders</li> </ul>
Coleman et. al. (1993)	Narrative	9 studies All group design	<ul style="list-style-type: none"> <li>• Social problem-solving can be learned by a variety of students</li> <li>• Little impact on observed behaviors</li> <li>• Lack of generalization</li> <li>• Need to individualize training</li> </ul>
Hollinger (1987)	Narrative	15 studies Design type not specified	<ul style="list-style-type: none"> <li>• Need to consider influence of peers and their perceptions</li> <li>• Failure to produce consistent treatment effects</li> <li>• Social perception bias among peers</li> <li>• Need to conduct training in peer group</li> </ul>
Landrum & Lloyd (1992)	Narrative	12 studies Design type not specified	<ul style="list-style-type: none"> <li>• Researchers rely on least analytic approaches to generalization</li> <li>• Generalized responding inadequately explored</li> <li>• Studies provide no analysis of presence or absence of generalization</li> <li>• Lack of assessing transfer effects of self-management techniques</li> </ul>
Mathur et. al. (1998)	Meta-analytic	64 studies All single-subject design	<ul style="list-style-type: none"> <li>• Effects modest with a PND of 62%</li> <li>• Social interaction skills more amenable to treatment than social communication skills</li> <li>• Delinquents benefited more from training than students with autism or EBD</li> <li>• SST not adapted to preschoolers</li> </ul>
Mathur & Rutherford (1991)	Narrative	21 studies 4 group design 17 single-subject design	<ul style="list-style-type: none"> <li>• Increase in use of generalization techniques but lack of examining efficacy</li> <li>• Need for systematic peer training</li> <li>• Lack of ways to determine cost-effectiveness of training outcomes</li> <li>• Need to examine social significance of behavioral change</li> </ul>
Olmeda & Kauffman (2003)	Narrative	7 studies 6 group design 1 single-subject design	<ul style="list-style-type: none"> <li>• Limited reporting of cultural, linguistic, and community characteristics</li> <li>• Need description of trainer characteristics</li> <li>• Lack of family involvement</li> <li>• No differences in efficacy based on ethnicity</li> </ul>
Quinn et. al. (1999)	Meta-analytic	35 studies All group design	<ul style="list-style-type: none"> <li>• Obtained small ESs</li> <li>• Students with EBD require specially designed, individualized instruction</li> <li>• Type of social skill deficit not considered</li> <li>• Interventions not implemented long enough to be effective</li> <li>• Need for formative evaluation</li> </ul>

**TABLE 1 (Continued)**  
**Summary of Reviews of SST With Students With EBD**

<i>Review</i>	<i>Type of Review</i>	<i>Number and Type of Design</i>	<i>Major Conclusions</i>
Schloss et. al. (1986)	Narrative	25 studies Design type not specified	<ul style="list-style-type: none"> <li>• Lack of accepted conceptualization of social competence</li> <li>• Lack of attention to specific subject characteristics</li> <li>• Social validity ignored</li> <li>• Need for demonstrating integrity of training procedures</li> <li>• Lack of generalization</li> </ul>
Singh et. al. (1991)	Quantitative	28 studies 2 group design 26 single-subject design	<ul style="list-style-type: none"> <li>• Lack of subject classification criteria</li> <li>• Lack of functional analysis</li> <li>• Over-reliance on behavior-reduction procedures</li> <li>• Unsystematic use of training procedures</li> <li>• Lack of impact measures</li> <li>• Lack of individual-specific assessments</li> </ul>
Templeton (1990)	Narrative	5 studies Design type not specified	<ul style="list-style-type: none"> <li>• Evidence for efficacy inconclusive</li> <li>• Group format beneficial</li> <li>• Participants need cognitive ability to apply skills</li> <li>• Lack of instilling values during training</li> <li>• Lack of generalization/maintenance</li> </ul>
Zaragoza et. al. (1991)	Narrative	27 studies Design type not specified	<ul style="list-style-type: none"> <li>• Studies reported improvements</li> <li>• Lack of assessing subjects' type of social difficulty and matching training</li> <li>• Lack of positive changes in peer status</li> <li>• Subjects feel better about themselves after training</li> </ul>

used a method of developing coded categories across studies that could be numerically summarized.

One review focused solely on single-subject design studies (Mathur et. al., 1998) and four focused solely on group design studies (Beelmann et. al., 1994; Coleman et. al., 1993; Quinn et. al., 1999; Templeton, 1990). Four others explicitly stated that both single-subject and group designs were reviewed (Ager & Cole, 1991; Mathur & Rutherford, 1991; Olmeda & Kauffman, 2003; Singh et. al., 1991). A final set of four reviews did not indicate the design type in either narrative or tables (Hollinger, 1987; Landrum & Lloyd, 1992; Schloss et. al., 1986; Zaragoza et. al., 1991). It is likely, however, that these last four reviews included both single-subject and group design studies. This conclusion was reached by examining tables for number of subjects (ranging from 1 to more than 100) and study reference (e.g., *Journal of Applied Behavior Analysis* would indicate a single-subject design whereas the *Journal of Consulting and Clinical Psychology* would reflect group designs). There is, however, a

possibility of error when extrapolating design type when it was not specifically stated.

### **Subject Characteristics**

All but two reviews had in their title the following descriptors: students with emotional and behavioral problems, behavior-problem adolescents, students/youths with emotional or behavioral disorders, children with behavior problems, behaviorally disordered students/children, students who are seriously emotionally disturbed, or children/youth/adolescents with behavioral disorders. Two reviews were obtained from PsycINFO using the search terms described previously (Beelmann et. al., 1994; Coleman et. al., 1993). Nevertheless, both reviews had tables indicating subjects were youngsters with some type of emotional or behavioral disorder.

Titles, however, can be misleading. Upon examination of subject inclusionary criteria, only two reviews focused solely on students who were labeled seriously emotionally disturbed (SED) according to federal or state

special education eligibility criteria (Olmeda & Kauffman, 2003; Quinn et. al., 1999). Another review indicated that studies were included where participants were either formally (i.e., met federal or state SED criteria) or informally labeled as EBD (Singh et. al., 1991); however, nowhere in the review was "informally" ever defined. An additional review used the term EBD to describe subjects but never defined what was meant (Landrum & Lloyd, 1992). The remaining nine reviews included studies in which subjects were identified as displaying disruptive behavior, conduct disorders, autism, delinquency, or externalizing or internalizing syndromes; being rated by teachers or peers as aggressive, maladjusted, rejected, or neglected; having low social interaction; and being hospitalized psychiatric patients.

It is difficult to generalize from conclusions reviewers made based on the extreme variability of participants of studies described as having an "emotional or behavioral" disorder. On the other hand, excluding these samples who have often been identified as SED at some point in their school years would ignore a large body of pertinent literature. Therefore, it is important for researchers to carefully examine subject characteristics. Researchers often conduct studies to duplicate and extend the data base on SST efficacy. Science progresses, and conclusions are more robust on a construct, when a large body of research has accumulated. Currently, the large body of research on SST with students with EBD is so variable that conclusions should be reached cautiously. This limitation presents a major area of future research: conducting SST studies with students who meet federal or state eligibility criteria. This recommendation does not advocate any "trait-treatment" approach to SST. Students identified as EBD are a heterogeneous group and interventions should be tailored to their individual-specific deficits. Rather, research with students identified as EBD and receiving special education services in public schools would help identify the range and limitations of SST in this setting. Otherwise, educators may assume a particular SST procedure would be effective when, in fact, resources, personnel, or the logistics may not exist to implement them.

### **Types of Interventions**

Social skills training is not actually an intervention but rather an outcome: improved social skills and social competence. There is no one intervention technique to train social

skills. The techniques will vary based on a youngster's pattern of deficits. If a student knows how to perform certain skills but his negative self-talk interferes with performing them, then self-instruction training may be indicated. Conversely, if the youngster does not possess the requisite social skills, then direct instruction would be warranted. Consequently, reviews contained a variety of interventions. Seven of the reviews included studies using behavioral, cognitive, or cognitive-behavioral intervention techniques (Ager & Cole, 1991; Beelmann et. al., 1994; Olmeda & Kauffman, 2003; Quinn et. al., 1999; Schloss et. al., 1986; Singh et. al., 1991; Zaragoza et. al., 1991). Four reviews focused on specific intervention approaches or outcomes. Coleman et. al., (1993) included only social problem-solving interventions whereas Mathur et. al., (1998) focused strictly on behavioral approaches. Mathur and Rutherford (1991) reviewed peer-mediated interventions. Landrum and Lloyd (1992) examined generalization outcomes. Two reviews did not specify exact training techniques (Hollinger, 1987; Templeton, 1990). In some instances it was easy to extrapolate; for example, both unspecified reviews made reference to instructions and modeling, which are behavioral techniques. Most of the narrative reviews, however, described studies as "social skills training resulted in . . ."

Taken together, the following intervention techniques were used in studies reviewed: coaching, modeling, rehearsal, feedback, reinforcement, goal setting, instructions, discussions, peer training, problem solving training, self-instruction, self-monitoring, self-evaluation, and self-reinforcement. Consequently, a reasonably sound conclusion is that SST studies incorporate both behavioral and cognitive techniques both independently and jointly—in the latter case reflecting a cognitive-behavioral orientation. Cognitive-behavioral interventions (CBI) focus on targeting a youngster's private speech self-instruction training, problem-solving training, attribution retraining, and cognitive restructuring approaches (Maag & Swearer, 2005). In addition, virtually all effective CBI techniques with youngsters include behavioral components such as modeling, role playing, and positive reinforcement (Braswell & Kendall, 1988). These techniques may work well for students who display cognitive deficits or distortions that interfere with accessing and performing social skills in their repertoire.

## Results

Results from the three meta-analytic reviews are straightforward because effect sizes are calculated. The techniques vary, however, depending on whether group design or single-subject design studies were reviewed and analyzed.

Group designs use the *ES* statistic to depict the influence of the independent variable (i.e., SST) on the dependent variable (i.e., changes in measures of social skills). The level at which effect sizes approach significance is typically about 0.04, with effect sizes of 0.60 reflecting credible proof of a treatment being effective (Forness et al., 1997). Quinn et al. (1999) obtained a mean *ES* of 0.199, which was considered small. To place this in perspective, they stated that an *ES* of that magnitude indicates that only 58% of students with EBD will obtain any benefits from receiving SST. Meta-analytic results for Beelmann et al. (1994) fared somewhat better for one of the three groups: at-risk (*ES* = 0.85), externalizing syndromes (*ES* = 0.48), and internalizing syndromes (*ES* = 0.50). However, the effect of SST for two groups associated with EBD was small.

Meta-analyses of single-subject studies typically use the nonparametric approach developed by Scruggs, Mastropieri, and Castro (1987), which is based on the percentage of nonoverlapping data (*PND*) between baseline and successive intervention phases in graphic representations of data. Scruggs, Mastropieri, and their colleagues have provided guidelines for interpreting *PND* scores: > 50% = ineffective, 50%–70% = mildly effective or questionable, 70%–90% = moderately effective, and < 90% = highly effective (Mastropieri, Scruggs, Bakken, & Whedon, 1996; Scruggs & Mastropieri, 1994). Mathur et al. (1998) obtained a *PND* score of 64% for their sample of EBD studies, indicating that SST was mildly effective for this group.

Singh et al. (1991) indicated that they used quantitative analysis, although it was not meta-analytic. Instead, they developed coded categories across studies that could be numerically summarized on a 3 point scale: 0 = less than or equal to a 50% mean reduction from baseline; 1 = 51%–74% reduction, and 2 = 75%–100% reduction. They did not state how these criteria were generated. Nor did they submit the three group design/pre-posttest studies to this or any "quantitative" analysis. However, the majority (89%) of the single

subject studies reviewed obtained the following ratings: 16 received a rating of 2, seven were rated 1, and five were rated 0.

It is much more difficult to summarize the results from narrative reviews. The obvious reason is because the authors used their own internal professional judgment, which carries with it some subjectivity to appraise treatment efficacy. This assumption may account for the fact that four of the nine narrative reviews did not provide any statements regarding the efficacy of SST (Hollinger, 1987; Olmeda & Kauffman, 2003; Schloss et al., 1986; Templeton, 1990). They instead focused on issues for future research and implications for practice. The remaining five reviews reached conclusions regarding efficacy of SST using such words and phrases as "promising results," "cautious optimism," "lack of evidence," "marginal attention," "strong support," and "less positive" (Ager & Cole, 1991; Coleman et al., 1993; Landrum & Lloyd, 1992; Mathur & Rutherford, 1991; Zaragoza et al., 1991). Regardless of the subjectivity of the results provided in narrative reviews or the objective results of the quantitative reviews, they all raised numerous issues for future research and implications for practice.

## Issues Raised From SST Reviews

The issues and recommendations raised varied depending on which aspects of SST they chose to focus. Some reviewers emphasized methodological issues whereas others addressed conceptual flaws. Nevertheless, four general areas of consensus deserve attention. In some instances they confirm methodological flaws (e.g., lack of generalization and assessing individual-specific deficits) but in other instances affirm positive changes (e.g., peer-mediated techniques).

### Lack of Generalization

That lack of generalization was the prominent finding should not come as a surprise because it has been addressed and lamented in behavioral research since the seminal article by Stokes and Baer (1977). A decade later, Rutherford and Nelson (1988) reviewed 5,300 behavioral treatment studies and found that less than 2% addressed generalization and maintenance of educational treatment effects and less than 1% programmed for stimulus and response generalization. Landrum and

Lloyd (1992) reached similar conclusions when reviewing studies addressing the social behavior of students with EBD. Clearly, promoting generalization has been a thorny issue for basic behavioral treatment studies, let alone interventions as potentially complicated as SST. Ironically, several tactics for programming generalization could be infused in SST studies if researchers addressed three conceptual issues: selecting socially valid behaviors; focusing intervention on the peer group; and promoting entrapment.

*Selecting socially valid behaviors.* One of the most important issues when teaching youths social skills is determining whether targeted skills will enhance the quality of their lives—a concern often referred to as social validity (Wolf, 1978). Generalization will be enhanced when students with EBD see the relevance of using targeted skills in every day life. Unfortunately, the authors of some SST programs do not provide information on the social validity of the skills taught (e.g., Goldstein & McGinnis, 1997; Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1982; Walker et. al., 1988). In some instances, authors described more systematic approaches to selecting socially valid behaviors (e.g., Sheldon, Sherman, Schumaker, & Hazel, 1984).

Programming generalization also requires conducting functional assessment—specifically identifying and teaching students with EBD replacement behaviors (Maag & Katsiyannis, 1998). A replacement behavior is an appropriate behavior that serves the same function as the socially inappropriate behavior (Maag, 2005). Replacement behavior training (RBT) enhances generalization because if a student with EBD finds a replacement behavior to be an acceptable alternative that “gets him or her what he or she wants” (i.e., serves the same function), he or she is more likely to use that behavior outside the training setting. The very nature of replacement behaviors ensures that they will have greater social acceptability, which, in turn, may lead to two desirable outcomes: entrapment and improved peer status. The process of identifying replacement behaviors has been described previously (Maag & Kemp, 2003). Although it is not easy or frequently incorporated into SST, it nevertheless is an important component to promote generalization.

*Including the peer group and promoting entrapment.* Typically, a student who is socially incompetent is targeted for SST. Generalization is unlikely to occur, however, unless the peer group is included in intervention to promote

entrapment. Entrapment involves recruiting natural communities of reinforcement (McConnell, 1987). It occurs when peers reinforce a target student for performing a socially appropriate behavior. Strain, Odom, and McConnell (1984) coined the term *social reciprocity* to describe the mutually reinforcing interactions between individuals. Furthermore, certain categories of social initiations were found to have a high probability of gaining reciprocal responses from peers (Tremblay, Strain, Hendrickson, & Shores, 1981).

It is not easy to incorporate peers into training because of the many variables and dynamics of social networks that exist in schools. It is becoming increasingly evident that peer affiliations and classroom social positions influence the development of antisocial behaviors. For example, students who are highly aggressive tend to be members of peer groups characterized by high levels of antisocial behavior and low levels of prosocial behavior (Farmer & Hollowell, 1994). Similarly, a student's social prominence within a classroom or school social structure (i.e., social network centrality) has implications for the display of antisocial behavior. There are four prominence hierarchies: (1) highly prominent students in highly prominent peer groups are considered nuclear in the social structure; (2) average students in the social structure are secondary; (3) low prominence students are peripheral to the social structure; and (4) students who are not members are socially isolated (Farmer, Van Acker, Pearl, & Rodkin, 1999). Several researchers have found that aggressive and acting out behaviors are ways for some students to attain high status and that these behaviors are associated with high social positions (e.g., Adler, Kless, & Adler, 1992; Farmer & Farmer, 1996; Farmer & Rodkin, 1996; Xie, Cairns, & Cairns, 1999).

Promoting entrapment is not easy when social network researchers have found a respectable amount of aggressive and disruptive behaviors in general education classrooms (Farmer et. al., 1999). This social dynamic may encourage, or at least condone, antisocial behaviors that are characteristic of students with EBD. Surprisingly, Farmer et. al. (1999) found that in their study, the majority of students nominated as highly aggressive were students without disabilities, although there was a high level of variability in the nominations of students with disabilities. They also found that students with disabilities were part of a peer group within their classroom social

network. The implication is clear: Promoting generalization of SST involves not only the peer group but also the classroom social structures in which they reside. Farmer and his colleagues noted that generalization and maintenance of learned social skills depend on being able to embed the target student in a social system that supports learned behaviors.

There is some evidence for including peers and their social networks for students with learning disabilities. For example, Vaughn, Lancelotta, and Minnis (1988) conducted a case study of a female with learning disabilities in which they focused assessment, intervention, and outcome evaluation on the significant peer group. Results were profound—the girl's posttest peer status scores were significantly higher than those obtained before intervention. Equally impressive, gains were maintained over 12 months. Despite the impressive albeit preliminary results, few researchers have conducted similar studies, although the idea of conducting intervention within an interrelated context continues to be advocated (Smith & Travis, 2001).

### Conducting Assessments

Reviewers brought up a variety of assessment related issues. The two most frequently cited problems were (a) SST not tailored to the individual student's deficiencies and (b) the lack of socially valid outcome measures. These two issues have been raised by other authors for more than 20 years but still are ignored to this day.

*Assessing individual specific deficiencies.* Gresham and Elliott (1984) categorized social skill problems into four general areas: skill deficits, performance deficits, self-control deficits, and self-control performance deficits. Distinctions between these four categories were based on whether or not a person knew how to perform the target skill and the existence of emotional arousal responses (e.g., anger, impulsivity) that may interfere with performance. Hughes and Hall (1987) described a similar model by combining correct and incorrect social perceptions with the following strategic repertoires: no error, behavioral skill deficit, cognitive deficit, and cognitive-behavioral deficit. Similar models have been proposed to guide intervention for students with attention deficit hyperactivity disorder (Maag & Reid, 1994).

Although these models have existed for some time, and techniques have been developed

to assess individual specific deficiencies (e.g., Maag, 2005), assessing deficiencies is rarely undertaken, probably because it is viewed as too complex and time-consuming. Nevertheless, without conducting this type of assessment, it is impossible to tailor specific SST interventions to identified deficits, which is important to enhancing treatment outcomes (Maag, 1989, 1990). Goldstein (1999) addressed this issue in his comprehensive *Prepare Curriculum*. He devoted chapters to various approaches for teaching social skills, such as behavioral skills training, problem solving training, and moral reasoning training, to name a few.

*Lack of socially valid outcome measures.* Outcome assessment has been characterized as an exercise in social validation (Elliott, Gresham, & Heffer, 1987). Gresham (1983) suggested that changes in targeted social behaviors should predict a youngster's status on socially important outcomes. In a review of 38 SST studies, however, Hughes and Sullivan (1988) concluded that the majority did not conduct a functional analysis of the relation between target behaviors and socially valid outcomes such as improved peer status. Addressing this issue involves selecting outcome evaluation measures—both specifying and impact.

Specifying assessment focuses on whether targeted behaviors are being performed in naturalistic settings. The most socially valid specifying procedure is naturalistic observation in which social behaviors are targeted and operationally defined, a recording technique is selected, and observations are made in relevant situations. Analogue (role play) assessment and tests of social cognition have also been used, although they are only minimally related to performance in naturalistic settings (Gresham, 1985). The problem with naturalistic observation is that it will not provide information on whether performance of the target behaviors will improve the quality of youngsters' lives in such areas as academic achievement, improved friendships, fewer disciplinary referrals, and contact with the juvenile justice system. Consequently, impact measures should also be used because they answer the question of whether or not SST produced improvements on socially consequential outcomes. Impact assessment procedures include sociometric techniques (e.g., nomination and rating scale methods), teacher ratings of social competence, and measures of academic performance.

Hughes and Sullivan (1988) provided several recommendations for conducting outcome assessment that are germane today

because it is rarely incorporated into SST studies. First, the observation system used to measure performance should correspond to skills taught during intervention. For example, observing rate of interaction would be insensitive to target behaviors such as responding to criticism or giving compliments. Second, outcome measures should reflect youngsters' individual-specific deficiencies identified before implementing SST. This recommendation is difficult to implement because so few researchers assess individual-specific deficiencies before implementing SST. Third, because behavioral characteristics of popular and unpopular students vary, a combination of peer ratings and naturalistic observations should be used. Fourth, outcome assessment should take place over an extended period of time. For example, Bierman and Furman (1984) found that peer acceptance of students who received SST did not improve after six weeks because peers did not have enough time to change their perceptions nor was this sufficient time for entrapment to occur regularly.

### Treatment Fidelity

Many authors of SST reviews concluded that SST lacked treatment fidelity. That is, no structured consistent steps were taken to train social skills across studies. Forness and Kavale (1996) observed that few studies used established SST packages and instead consisted of a mixture of techniques with no clearly stated rationale. Part of the treatment fidelity problem is understandable. After all, if students fail to perform social skills for a variety of reasons, then the specific interventions incorporated into SST should reflect these deficiencies (Maag, 2005). It has been known for decades that, at least for adult participants, social competence improves more when they receive training related to their identified problems (Trower, Yardley, Bryant, & Shaw, 1978). Consequently, training procedures will look different when teaching students specific behavioral skills versus training in social problem solving. Nevertheless, there are some sound pedagogical principles that can be applied across interventions, such as the use of instructions, modeling, rehearsal, role playing, and reinforcement.

There are some widely accepted social skills training packages that, if followed, may increase treatment fidelity (Goldstein & McGinnis, 1997; Hazel et al., 1982; Walker et al., 1988). One caveat is that most of these programs follow a skill-deficit approach. Currently, only

Goldstein's (1999) *Prepare Curriculum* provides interventions systematically geared toward different performance deficits.

The solution to the fidelity problem may not be totally based on the selection of a training program. Rather, a structured training format that also offers flexibility in which to implement SST may be required. Students with EBD present substantial educational and behavioral challenges. Consequently, a continuum of intervention is warranted. Maag and Swearer (2005) discussed how the Institute of Medicine's (IOM) clinically accepted framework of prevention, treatment, and maintenance can be adapted for use in schools for students who are depressed. Unlike the linear, case-based, and redundant traditional conceptualization of primary, secondary, and tertiary prevention, the IOM framework is risk/population-based, makes specific distinctions between prevention and treatment, and pays attention to multiple layers of risk and protective factors and their mutual effects. This model can easily be applied for students with EBD who need intensive long-term SST in a structured but flexible training format.

More than a decade ago, Maag (1992) suggested using Meichenbaum's (1985) stress inoculation training (SIT) as a training format for delivering SST because it provides a structured system for assessing youngsters' individual-specific deficits, implementing appropriate intervention strategies, and promoting generalization. It has been used with various child and adolescent populations to treat depression (Maag, 1988), manage anger and aggression (Feindler & Fremouw, 1983), and teach interpersonal coping skills (Maag, Parks, & Rutherford, 1988). SIT comprises interconnected techniques that are implemented in three phases: (a) conceptualization; (b) skills acquisition and rehearsal; and (c) application and follow-through. In Phase 1, youngsters are educated about the nature of interpersonal functioning and its components. Phase 2 involves training youngsters in relevant skills for increasing social competence. In Phase 3, they practice applying coping skills both *in vitro* and *in vivo* during exposure to regulated doses of stressors that arouse but do not overwhelm their newly acquired social skills. The last phase is relevant to SST because youngsters' inability to cope with stress often interferes with their production of newly acquired social skills.

Kendall and Bemis (1983) noted several advantages of SIT. First, because it is one of the most inclusive forms of cognitive-behavior

therapy, SIT can be adapted for use by various professionals working in diverse settings. Second, it reflects a deliberate plan with a plausible underlying rationale. Third, SIT presents a range of strategies from which the most relevant can be selected. Consequently, SST can be tailored to the individual-specific deficits of a particular youngster and still be implemented within a consistent, evidence-based format (Maag & Kotlash, 1994).

## Recommendations for Research

There have been many recommendations about how to improve SST. They have existed since the early 1980s through the present and were a product of thoughtful critiques of the literature. Very few of them have been implemented individually, let alone together, on a consistent basis. This article reviewed the reviews on SST with students with EBD and described the results and issues raised by these reviews. Results of this review and the issues it raised point to additional recommendations for researchers conducting future studies on the efficacy and generalizability of SST.

First, researchers should conduct studies on students who have been classified as meeting federal or state eligibility criteria for EBD in school settings. The focus of this research should be to delineate the parameters in which SST can be conducted in this environment. For example, would a school have the personnel and expertise for assessing students' individual-specific deficiencies or would an outside consultant be required? In the latter case, the practicality of using evidenced-based practices to conduct SST may require researchers to obtain external funding to assist schools that otherwise would not have the resources or expertise to undertake this process independently. Perhaps researchers would want to develop truncated or modified procedures and assess their efficacy using school personnel to conduct SST with students with EBD without outside assistance.

Second, researchers should focus not only on students who are neglected—for which SST has been fairly effective—but also on those who are rejected by their peers even though results on this population have been less encouraging (e.g., Bierman & Furman, 1984; Henderson & Hollin, 1983; Maag, 2005; Nanyang & Hughes, 2002; Shamise, 1981). In addition, students with EBD are often rejected, rather than neglected, by their peers and, consequently, would be candidates for SST (Kauffman,

2005). These students display externalizing behaviors associated with aggression, bullying, noncompliance, membership in gangs, and substance abuse, and have frequent contact with the police (Kazdin, 1994; Maag, Vasa, Reid, & Torrey, 1995). Sociometric ratings have been used to identify students who are rejected by their peers (Hughes & Sullivan, 1988). An important consideration for conducting research with this group is identifying and analyzing classroom social networks. Researchers in this area have indicated that students who display antisocial behaviors may enjoy high peer status and social success within classroom networks (Farmer et. al., 1999). Consequently, students who are rejected may benefit the most from SST if researchers infuse them into peer groups that support prosocial attitudes and behaviors.

Third, generalization strategies should be built into any SST program from the inception of a study. Several specific research questions are pertinent in this area: (a) What is the effect of conducting functional assessment to find replacement behaviors that would promote generalization? (b) How is generalization enhanced when peers are incorporated into training programs to serve as common social stimuli and natural communities of reinforcement? (c) To what extent does incorporating self-management strategies (e.g., self-monitoring, self-evaluation, self-reinforcement) promote generalization of trained social skills? These questions may be best researched by embedding target students into classroom social networks.

Fourth, it is imperative that researchers conduct pretreatment assessment to determine the nature of participants' performance deficits. Research could be conducted to determine the differential efficacy between students with EBD who receive interventions that match their identified deficiencies and those receiving another type of SST intervention. Little to no research exists addressing this question with youngsters, although studies with adults who are depressed have indicated that greater improvements have been obtained when interventions are matched to identified deficits (e.g., Baker & Neimeyer, 2003; Beutler et. al., 1991). This information may help practitioners identify specific types of interventions for a particular student's deficits, thereby streamlining the SST process.

Fifth, SST will not result in maintenance and generalization of targeted skills when the typical intervention length is four to six weeks. Therefore, SST should be implemented

over extended periods of time—even six to nine months. The question is, how long is long enough? Future research should assess the effects of SST that has been conducted for different periods of time. For example, what is the differential efficacy of SST conducted for two weeks versus one month, two months, and so forth? The goal would be to obtain the most benefit in the shortest amount of time because students with EBD whose social skill deficits are severe often require long-term intervention (Kazdin, 1995). It may be that teaching students social skills is analogous to teaching them academics: Reading or math instruction would not be terminated after a brief, three to six week long unit, and nor should the teaching of social skills. Instead, SST may need to be a standard portion of the curricula for students with EBD.

Sixth, research should examine the differential efficacy of SST on students with varying levels of academic deficits. Students with EBD have been consistently found to display academic deficits that place them one or more grade levels below their nondisabled peers in most subject areas (e.g., Mattison, Spitznagel, & Felix, 1998; Meadows, Neel, Scott, & Parker, 1994; Scruggs & Mastropieri, 1986). Social skills training may be more effective for students with mild underachievement versus those with more severe academic deficits. This variable should be investigated because improving both their social competence and academic skills represents a daunting task because of their related, and profound, display of externalizing behaviors (McEvoy & Welker, 2000; Nelson, Benner, Lane, & Smith, 2004). Consequently, SST cannot be detached from evidence-based practices (i.e., Forness et al., 1997) for improving the academic skills of students with EBD.

## Conclusion

The state of SST with students with EBD seems to range from dismal to guarded optimism. Numerous methodological flaws in current research exist, and researchers continue to ignore long-standing recommendations for enhancing efficacy of SST and the potential for generalization. The problem may, however, be that public schools do not have the personnel, expertise, resources, or inclination to effectively implement SST. This assumption is not without basis. For example, Maag and Swearer (2005) reviewed 22 studies from 1980 to 2003 that used cognitive-behavioral interventions to treat

youngsters who were depressed. Only six studies were conducted in school settings and the most recent was more than 10 years ago (Clarke et al., 1995). Why would an evidence-based approach for treating childhood depression not have one study more recent than 1995 when the cumulative research accelerated dramatically since then with clinic-based samples? Perhaps the answer is the same as that for SST research: Schools lack personnel with expertise, time, and resources for turning evidenced-based practices into reality.

The crux of the matter, in terms of any SST intervention for students with intractable behaviors (regardless of the educational label), may be the feasibility of implementing and evaluating their effectiveness in public school settings. Otherwise, past recommendations would be irrelevant because the likelihood of them being implemented is problematic. For the SST knowledge base to grow, schools need to create and nurture a culture in which SST would be an important and ongoing component of the curriculum that benefits not only target students but also their peers because it facilitates a more supportive and inclusive student body. Researchers will have to work collaboratively with schools to the mutual benefit of both parties.

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