THE SOCIAL-EMOTIONAL SIDE OF LEARNING DISABILITIES: A SCIENCE-BASED PRESENTATION OF THE STATE OF THE ART

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Abstract. **For over 30 years, researchers have studied the social-emotional side of learning disabilities (LD). This article highlights the science-based research on three domains of social skills of children with LD: characteristics, interventions, and the impact of policy. The article concludes with concerns regarding the translation of research on social-emotional factors into practice and the likelihood that social-emotional problems are being adequately addressed in public schools.**

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In God we trust, from all else we expect data. (anon)

SCIENCE-BASED DECISION MAKING

Special education has long been an empirically based field. Special education policy and practice have been supported by scientific studies since the original IDEA (Public Law 94 142, 1975) included a provision for federal financing of special education research. Typically, special education research has focused on three basic goals: (a) to identify the characteristics that discriminate individuals within a particular disability category from typical individuals or individuals within another disability category; (b) to determine the effectiveness of intervention strategies; and (c) to assess the impact of public policy on constituents.

Today, requirements in IDEA and No Child Left Behind (NCLB) mandate the use of scientifically based assessments, curricula, and interventions. Thus, the results of research have become the criteria for selecting assessment measures and curricula, individualizing instruction, making instructional decisions, charting progress, and planning behavioral interventions at individual and schoolwide levels.

The topic of social-emotional factors in learning disabilities (LD) has benefited from special education's emphasis on science. Over the past 30 years, an impressive body of research has accumulated detailing the social problems experienced by students with LD, identifying promising classroom-based interventions for ameliorating some of these problems, and testing the effect of public policy (namely, class placement) on the social-emotional status of students with LD. The purpose of this article is to highlight the scientific base in each of three areas: characteristics, interventions, policy impact (i.e., full inclusion).

SCOPE OF THE PROBLEM

Estimates of the prevalence of social problems in students with LD in the United States range from 38% (Baum, Duffelmeyer, & Geelan, 1988) to 75% (Kavale & Forness, 1996). About 2,800,000 children have been identified as having LD; hence a sizable population of students has LD as social problems. Moreover, social problems have been reported across ages (preschool-elementary-junior-senior high schools-college-adulthood), race and ethnicity (some

inconsistencies), settings (rural-urban), raters (parents, teachers, peers, and self-assessments), methods and measures (surveys, observations, and laboratory studies), countries (United States, Canada, Israel, Australia, and South Africa), and time (30+ years). The results of studies on social problems have been replicated many times in many places, and appear to be resistant to the vagaries of time, place, and methodologies.

CHARACTERISTICS OF STUDENTS WITH LD: THE SOCIAL-EMOTIONAL DOMAIN

Self-Concept

Self-concept is one of the most widely researched topics in LD. One of the most frequently cited findings is that students with LD have lower academic self-concepts than peers. Although students with LD consistently and accurately rate themselves lower than achieving classmates on academic achievement, their self-concept for social status appears to be inconsistent. For example, Bursuck (1989) and Kistner, Haskett, White, and Robbins (1987) found students with LD accurate in evaluating themselves more negatively on social skills than comparison students insofar as they received lower peer ratings. But Bear and Minke (1996) and Clever, Bear, and Juvonen (1992) found inflated ratings on their self-esteem on social factors. If the sample included students with LD who did not have social problems (Vaughn, 2001), inflated scores may have reflected accurate social perceptions. On the other hand, inflated self-perceptions of social skills ratings may represent a deficit in social perception. It is also possible that if the child has one friend, the child could perceive him/herself socially skilled in spite of receiving lower sociometric ratings from peers. Moreover, in the absence of teasing or bullying, social status may be more amorphous than academic status.

While an accurate perception of social rejection is likely to produce sad, depressed feelings, deficits in social perception may help the child maintain positive feelings about the self. In sum, although students with LD are likely to perceive themselves more negatively on measures of academic self-concepts throughout their school years, their social self-concepts may vary depending on a variety of personal and situational factors.

Affect/ Emotions

A relatively ignored area in education is the impact of affect/emotions on social relationships and learning. Yet, research in psychology, medicine, and nursing has demonstrated strong relationships between positive and negative affect and most human functions, including learning, social relationships, and health. Negative affect (i.e., anger, fear, anxiety, disgust, depression)

depresses memory and produces inefficient information processing. It affects the performance of complex cognitive functions that require flexibility, integration, and utilization of cognitive material. In contrast, positive affect increases access to information stored in memory, boosts positive feelings about self, generosity and good will toward others, and facilitates conflict resolution (Baron, 1990). Moreover, affect is contagious. That is, we can "catch" elation, euphoria, sadness, anger, and depression from the people around us (Hatfield, 1994). As a result, people seek the company of those who exhibit positive affect, while avoiding people who are depressed, sad, or angry.

Several studies have compared students with and without LD on their negative feelings; namely, depression, anxiety, and loneliness (Margalit, 1991; Margalit & Ben-Dov, 1995; Margalit & Zak, 1984; Wiener & Schneider, 2002). The results of these studies consistently have found that students with LD are more likely than comparison students to experience these negative emotions. Feelings of loneliness have been found to range from 10% to 18% in children without disabilities but to range as high as 25% or more among children with developmental disabilities (Pavri & Luftig, 2000). Feelings of loneliness appear to be rooted in reality. For example, Pavri and Luftig found that students with LD were also less popular and more controversial than their peers.

However, we should not assume that negative affect is the result of poor academic achievement and difficulty making friends. Data suggest that negative affect may well be the precursor of both. For example, Margalit and Al-Yagon (1994) reported that preschool students who were identified as learning disabled a year later were more depressed and lonelier than higher achieving classmates. Because preschool children's loneliness predates the experience of school difficulties and being identified as learning disabled, negative affect is not the result of academic difficulties. Furthermore, data showing that peer rejection predates identification as having LD (Vaughn, Hogan, Kouzekanani, & Shapiro, 1990) suggest that peers are reacting to social skill deficits and that young peers may avoid preschoolers who are sad in order to avoid the social contagion of negative affect.

Studying emotionality is another way to examine the impact of affect on social status. Eisenberg et al. (1996, 1997) hypothesized that high emotionality and poor emotional regulatory skills interfere with coding social cues and assessing situations from different cognitive and affective perspectives, thus preventing a flexible approach to goal selection. Highly emotional children, or children upset by others' emotionality, may experience difficulty focusing on a variety of responses and evaluating them. Elementary school students with high

emotionality and poor emotion regulation skills have been found at risk for behavior problems, but the research has not yet been extended to students with LD. Some of the behavior problems exhibited by students with LD may be traceable to poor emotional regulatory skills.

In sum, affect and emotions, which are regulated by the nervous system, have been implicated as a cause and/or correlate in LD because (a) negative affect has negative effects on learning and social relations and (b) problems in emotional regulation influence responses in social situations. Negative affect and/or poor emotional regulation are likely to "color" children's perceptions and interpretations of others' behaviors toward them as well as others' responses to them.

Social Information Processing

Social perception. Social perception is defined as the recognition and labeling of prosody, facial expressions, gestures, and body language (Semrud-Clikeman & Hynd, 1991). Accurate judgments of emotions and feelings can be made without verbal cues (Sincoff & Rosenthal, 1985), but require attention to often subtle, fleeting cues. Negative interactions with others have been related to neglect of subtle social cues or a lack of ability to perceive and accurately read social cues (Spafford & Grosser, 1993). A variety of methods have been used to study the social perception of students with LD, including their accuracy in perceiving others' attitudes or behaviors toward them.

Nonverbal perception. Studies of nonverbal perception have been based on children's accuracy in labeling photographs or silent-film scenarios, and auditory and visual recordings of everyday emotions (anger, disgust, surprise, sadness, fear, and happiness). Students with LD consistently perform worse than comparison students (Kavale & Forness, 1996; Swanson & Malone, 1992). The auditory-only input is more difficult than the combined auditory-visual input. Of note, teachers' ratings of children's social skills are significantly correlated with students' accuracy in labeling emotions (Most & Greenbank, 2000). Furthermore, students with LD appear to be aware of their deficiencies in nonverbal communication and social problem solving (Kavale & Forness; Swanson & Malone).

Social Cognition

When asked to generate solutions to social dilemmas, students with LD perform less ably than average-achieving and low-achieving peers in encoding the dilemmas and in generating competent solutions (Tur Kaspa & Bryan, 1993). Although students with LD are able to generate a diversity of potential competent solutions, they indicate a preference for significantly more incompetent solutions than average-achieving students.

Children's "reading" of their social environment may be the dominant factor that shapes their selection of responses. Donahue, Szymanski, and Flores (1999) suggest that what looks like an incompetent response may actually serve an important, adaptive, and strategic social purpose given a history of social difficulties and consequent social environments. That is, the incompetent response may reflect the role the child plays in his or her social milieu.

Communicative Competence

Communicative competence (i.e., pragmatics) refers to the functional use of language to express social intentions that are consistent with cultural norms (Owens, 1994). Acquisition of pragmatic skills requires learning the elements of the language system (i.e., vocabulary, syntax, semantics) and the rules for language use in social transactions (e.g., turn taking).

A meta-analysis of pragmatic language skills (Lapadat, 1991) found that students with language and/or learning disabilities demonstrated consistent and pervasive pragmatic deficits in conversation across settings, conversational partners, age groups, and types of pragmatic skills measured. Specifically, children and adolescents with LD display problems in topic selection, initiation and maintenance, conversational turn taking, requesting and producing clarification, narrative production, presenting logical opinions and different points of view, gaze and eye contact, being tactful in formulating and delivering messages, and comprehension of humor and slang (Donahue & Bryan, 1984; Henry & Reed, 1995; Nippold, 1993).

Lapadat (1991) attributed the deficits to underlying language deficits rather than insufficient social knowledge. Considering that decades of research have linked language and reading skills, it is notable that Most, Al-Yagon, Tur-Kaspa, and Margalit (2000) found that preschool children differed from comparison children on measures of phonological awareness, loneliness, and social acceptance. This study suggests a connection between language skills, academic performance, and social status.

Social Behavior

A host of negative or inappropriate behaviors have been attributed to students with LD, including a lack of skills in initiating and sustaining positive social relationships (Gresham, 1997; Heiman & Margalit, 1998), acting more aggressively, and exhibiting more negative verbal and nonverbal behaviors than classmates (McConaughy, Mattison, & Peterson, 1994; Sigafoos, 1995). Some tend to be withdrawn whereas others behave disruptively (Clare & Leach, 1991; McIntosh, Vaughn, & Zaragoza, 1991). Teachers report that children with LD are more disruptive, less coopera-

tive, insensitive, less tactful (Pearl, Donahue, & Bryan, 1985), and engage in more attention-seeking behavior than classmates (Perlmutter, 1983). Parents rate them as less attentive, more active, not following directions or completing tasks (e.g., Gresham & Reschly, 1986). Peers rate them as more aggressive or disruptive (Perlmutter). Finally, a meta-analysis indicated children with LD are more likely than others to suffer personality or immaturity problems (Swanson & Malone, 1992).

INTERVENTIONS

Several studies have attempted to teach the social skills that have been identified in the research as being problematic among students with LD. Although positive effects have been reported in some research (Greenberg, Kusche, Cook, & Quamma, 1995; McIntosh et al., 1991), meta-analytic analyses have found limited positive effects on social behavior (Kavale, Mathur, Forness, Rutherford, & Quinn, 1997). These intervention studies were based on group designs and classroom-based interventions.

Researchers have been testing the impact on children's academic and social status of various classroom-based interventions. For example, Charles Greenwood and colleagues at Juniper Gardens (2001) have demonstrated, time and again, the positive effects of peer tutoring on academic learning and social relationships. Another promising method is cooperative goal structures (Jenkins, Leicester, O'Connor, Jenkins, & Troutner, 1994). For a time, having teams of children work on thematic units was a popular way to integrate children's learning across subjects, and to provide opportunities for children to work collaboratively in ways that promote friendships and collegiality. More recently, Vaughn, Elbaum, Schumm, and Hughes (1998) found a moderate increase in the friendship quality and peer acceptance of students with LD in classrooms using a consultation/collaborative teaching model. The Circle of Friends model (Davis & Fuchs, 1995), bibliotherapy (Sridhar & Vaughn, 2002) or writing groups (Wong, 2003) are other methods that could integrate social skills training into language arts curricula. Bryan and Bryan (1998) developed Amazing Discoveries, a program that integrated social skills training into science.

Although teachers are more likely to find classroom-based interventions acceptable than individualized social skills training, interventions that are individualized are more likely to be effective. That is, group designs may teach important social skills but not address the actual social deficits of the students in a particular sample. A mismatch between the needs of the student and the instruction may explain the relatively weak results of these studies. Positive results have been found when interventions are matched to student problems. See, for example, the attribution retraining studies by Borkowski, Weyhing, and Carr (1988) and Schunk and Cox (1986). These studies demonstrated that academic achievement and self-perceptions could be systematically improved. Indeed, students receiving attribution retraining plus academic instruction did better academically than students who received only academic instruction.

Affect interventions have also been demonstrated to be effective in laboratory and classroom settings. A series of studies found that 45-second affect inductions using self-induced positive thoughts, happy music, room freshener, or teacher pep talks had positive effects on social problem solving, math, spelling, learning to read unfamiliar words and students' willingness to help out at a school event (Bryan & Burstein, 2000; Bryan, Sullivan-Burstein, & Mathur, 1998; Yasutake & Bryan, 1995). Although these effects have been estimated to be effective only for about 20 minutes (Isen, 1984), generating positive moods in the classroom is likely to have a positive impact not only on learning but on cooperative behaviors and conflict resolution (Baron, 1990).

In general, the skills taught as part of classroom instruction are unlikely to generalize to other settings (Mathur & Rutherford, 1991). However, Elksnin (1994) described procedures that facilitate generalization of social skills. Extending special education's basic principles to teaching social skills, Elksnin suggests focusing on sequential modification, introduction of contingencies, training with several examples, training across settings, and mediating training generalizations. Further, Deshler and Schumaker (1993) established models for individualizing instruction and teaching generalization in learning many complex skills.

The scientific database delineating the social problems of students with LD is in place and foundations have been established for classroom-based interventions and individualized instruction. We can argue that the research has limitations and that more research is needed, but the fact is that the social difficulties of students with LD have been systematically demonstrated over and over again. We know what has to be done. We know how to do it. But if we are to effectively help children with LD improve their social status and social skills, a number of major issues must be addressed.

First, classroom-based interventions may reduce the factors that create negative academic and social self-perceptions and poor social relationships by reducing the visibility of individual performance and increasing the opportunity for legitimate, prosocial interactions. And it may be possible to weave individualized social skills training into academic curricula. Classroom-based

interventions hold the promise of establishing positive social environments for all students; they are feasible and promote academic learning. But for students who have problems in affect/emotions, perception, cognition, and language, it is critical that interventions address the needs of individual students. Thus, class-wide interventions are likely to provide the supports that must be in place to facilitate peer group acceptance, but are unlikely to provide the individualized instruction that children with learning/social disabilities need. Students with social LD require individualized instruction (i.e., special education that addresses their social needs).

Full inclusion is another common intervention for improving the social skills of children with disabilities. Part of the rationale for integrating children with special needs into general education classrooms was the opinion that the resource room pullout service delivery system contributed to low social status (Gartner & Lipsky, 1987; Giancreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Taylor, Asher, & Williams, 1987). It was believed that placing students with disabilities into general education classrooms would increase their opportunities to interact with typical children, learn social skills by observing good role models, gain peer acceptance, and feel better about themselves.

Several research studies have examined whether full inclusion has improved the self-perception and social status of students with LD. Based on meta-analyses, self-concepts are not influenced by class placement (Chapman, 1988; Elbaum, 2002). Regardless of whether students with LD are in general education classes, resource rooms, self-contained classes, or special schools, they have lower academic self-concepts than typically achieving students. In other words, there is no systematic association between self-concept of students with LD and their educational placement.

Similarly, the social competence of students with LD does not seem to be higher in inclusive than in noninclusive settings based on teachers' ratings (Jenkins et al., 1994). Students with LD were found to be less well liked and more frequently rejected than average-/high-achieving students, and the number of students with LD who were not liked by classmates in the fall increased in the spring despite placement in classes of teachers who were highly accepting of students with LD (Vaughn, Elbaum, & Schumm, 1996). In sum, merely placing students in inclusive classrooms is not sufficient to create social inclusion and acceptance.

POLICY IMPLICATIONS

The major stumbling block to providing social skills interventions rests with the school emphasis on academics to the exclusion of social development.

American teachers tend not to perceive children's peer relationships as being their responsibility. With increasing pressure to improve academic outcomes, as reflected in No Child Left Behind, teachers are under increasing pressure to prepare students for tests. Creating a prosocial, empathic classroom and school environment is not a central issue. The social skills that teachers respond to are related to maintaining control of the classroom, such as "ignores distractions from peers when doing seatwork assignments," "finds productive use of time while waiting for teacher assistance," and "continues working on a difficult task until it is completed" (Cruz, 1995). Teachers limit their concerns to on-task behaviors that affect classroom flow and discipline.

A second major stumbling block to the use of classroom and individualized social skills training is that social problems are not part of the LD definition, and social skills instruction is not mandated. School districts are not obligated to assess social problems and teachers are unlikely to include social problems in their referrals. Few teachers have been assigned responsibility for helping children overcome social skills deficits, even those deficits teachers have identified as affecting classroom behavior and performance (Baum et al., 2001).

In spite of the impressive scientific corpus available, definitions and guidelines in federal legislation do not include social problems as a type or subset of LD, or even as a trait or characteristic. Although professional and parental organizations concerned with LD recognize the scientific basis for including social problems (Association for Children and Adults with LD, 1986; Interagency Committee on LD, 1987; National Joint Committee on LD, 1982), no changes in the definition were made when IDEA was reauthorized. The rationale for excluding social-emotional factors was based on political grounds, which are driven by factors other than scientific evidence. Furthermore, the current movement to substitute "response to intervention" (Vaughn & Fuchs, 2003) would likely render social problems even more politically invisible.

Undeterred by these controversies, researchers have been steadily conducting programmatic, systematic research on social problems and interventions. This research has been progressing conceptually and methodologically, examining the relationships between the various components within and between the individual and significant others that constitute social competence. The results have broadened our horizons and understandings markedly.

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