Classwide Peer Tutoring
Collaborative Learning for All Students in Inclusive Classrooms

The idea of students teaching one another is not new (Lancaster, 1806). In traditional approaches to peer tutoring, the teacher identifies a high-achieving student to help a classmate who has not mastered a particular skill. In contrast, contemporary classwide peer tutoring (CWPT) models include low achievers and students with disabilities as full participants in an ongoing, whole-class activity in which all students help one another learn new curriculum content.

FOUR EVIDENCE-BASED MODELS

Four classwide peer tutoring models have emerged from more than three decades years of solid empirical research (Alber Morgan, 2006).

Juniper Gardens Children's Project CWPT. The Juniper Gardens Children's Project CWPT model was the brainchild of Greenwood, Delquadri, and Carta (1997). The whole class is divided into two weekly competing teams that are further broken into tutoring dyads and triads. Tutors present individual items, evaluate tutees' performance, and provide feedback and points. Daily and weekly public posting of team points serves as motivation.

A 12-year longitudinal study that compared groups of at-risk and nonrisk students who had or had not received CWPT instruction found that CWPT increased students' active engagement during instruction in grades 1 to 3; improved pupil achievement in grades 2, 3, 4, and 6; reduced the need for special education services by 7th grade; and decreased the number of students who dropped out of school by the end of 11th grade (Greenwood, Maheady, & Delquadri, 2002).

Peer-Assisted Learning Strategies. The Peer-Assisted Learning Strategies (PALS) program was developed by researchers at Vanderbilt University working collaboratively with local school districts (Morgan, Young, & Fuchs, 2006). The original PALS program was designed for use in reading and math by students in grades 2–6 (D. Fuchs, Fuchs, Mathes, & Simmons, 1996). K-PALS for kindergarten, First Grade PALS for beginning reading instruction, and High School PALS for content-area instruction have been added (D. Fuchs et al., 2001). PALS tutors and tutees interact in a set of structured activities for three 35-minute sessions per week. Examples of reading activities include Partner Reading with Retell, Paragraph Shrinking, and Prediction Relay. Teachers use brief scripted lessons to train all students to implement the activities independently. Over 15 years of research has demonstrated the effectiveness of this CWPT program in improving the reading performance of students at all performance levels, including students with disabilities and English language learners, from kindergarten through high school (McMaster, Fuchs, & Fuchs, 2006; McMaster, Kung, Han, & Cao, 2008).

SUNY Fredonia Classwide Student Tutoring Teams. The SUNY Fredonia Classwide Student Tutoring Teams (CSTT) model combines elements of Slavin's (1986) Student Team Learning approach with components from the Juniper Gardens CWPT model. Pupils work in four-member, heterogeneous learning teams and take turns reading and responding to items on teacher-developed study guides and/or concept cards. Tutor roles rotate clockwise on each item, and the process continues until a predetermined time limit (e.g., 20 to 30 minutes) has elapsed (Maheady, Mallette, & Harper, 2006). One study compared CSTT instruction to conventional teacher-led instruction on the math performance of 91 low-achieving ninth- and tenth-grade pupils enrolled in a program for potential high school dropouts (Maheady, Sacca, & Harper, 1987). During CSTT instruction, students' weekly math quiz scores increased by an average of 20 percentage points.

The Ohio State University Model. The Ohio State University CWPT model evolved from research in the late 1970s and early 1980s aimed at finding a low-cost approach for individualizing instruction of beginning reading and math skills for diverse groups of learners in the primary grades (Heron, Heward, Cooke, & Hill, 1983; Heward, Heron, & Cooke, 1982; Parson & Heward, 1979). The OSU model has been replicated and extended by hundreds of teachers in elementary, middle, and secondary classrooms across a wide range of curriculum areas such as spelling, science facts and vocabulary, algebra, geometry, reading fluency, foreign language vocabulary, and social studies (e.g., Gardner et al., 2001; Miller, Barbetta, & Heron, 1994; Wright, Cavanaugh, Sainato, & Heward, 1995). Daily sessions last about 20 minutes, with each student serving as both tutor and tutee during the session. When in the role of tutee, the child responds to questions presented by his or her partner (tutor) using a set of individualized task cards of unknown facts, problems, or items determined by a teacher-given pretest. The basic elements of the OSU model follow.

Tutoring Folders and Task Cards. Each student in the class has a tutoring folder (see Figure A) containing a set of task cards on specific curriculum content. Each card identifies one word, problem, concept, or fact to be taught
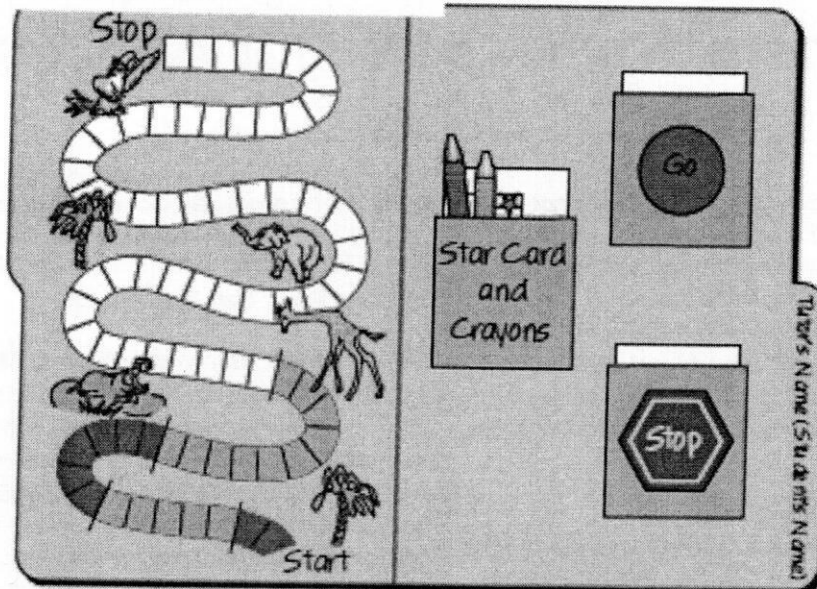
Source: Adapted from "Total Tutoring for Special and General Educators (Instructor's Manual)" by T. E. Heron & W. L. Howard, 2000. Columbus, OH: The Ohio State University Special Education Program. Used by permission.

to the child's tutoring partner. The task cards are in a GO pocket on one side of the folder. Also in the folder are a STOP pocket to collect learned cards, a track chart to record the tutee's progress, and markers to use for recording.

Practice. One child begins in the role of tutor, presenting the task cards as many times as possible during a 5-minute practice period and shuffling the set of cards after each round. The teacher trains tutors to praise their partners' correct responses and to say, "Try again," when the tutee makes an error. If the tutee still does not respond correctly, the tutor says, for example, "This word is tree; say tree." A timer signals the end of the first practice period, and the partners switch roles. While students are tutoring, the teacher walks around the room, prompting and rewarding good tutoring behaviors, answering questions, and generally supervising the activity.

Testing. After the second practice period, the students reverse roles again; and the first tutor tests her partner by presenting each task card once with no prompts or cues. The teacher gives tutors about 5 minutes each to test and record their tutees' progress.

- The tutor places cards that a tutee reads or answers correctly in one pile and missed cards in another.
- The students then switch roles again, and the first tutor is now tested on the words she practiced.
- The tutors then mark the back of each card to identify if it was "correct" or "incorrect" during the test. Each tutor records his tutee's daily progress on the chart.
- When a child correctly responds to a task card on the test for three consecutive sessions, that item is

considered learned, and the tutor moves it to the folder's STOP pocket.
- When the students have learned all 10 cards, the teacher places a new set of words in the GO pocket.
- Each session ends with the partners praising and complimenting each other for their good work.

CHARACTERISTICS COMMON TO ALL FOUR MODELS

- **Clearly defined learning tasks/responses.** CWPT programs are based on clearly defined learning tasks and explicitly defined peer tutoring roles and teaching responsibilities. Tutoring procedures are often scripted, and each tutor is expected to use standard procedures with little variation.
- **Individualized instruction.** Frequent pre- and post-tests are used to determine individualized learning tasks for each student. Additionally, because CWPT uses one-to-one instruction, each learner's performance can be observed, checked, and redirected in ways more frequent and continuous than in teacher-led group instruction.
- **High rates of active student responding (ASR).** Well-designed CWPT programs provide each student with many opportunities to respond. Depending on the curriculum content, a student may make 50 or more responses during a 10-minute peer tutoring session. Total ASR increases further in reciprocal CWPT programs because each student responds to each item in the role of tutee (initial responses to tutor's prompts, repeating missed items) and tutor

(prompting responses, discriminating between correct and incorrect responses, and providing feedback).

- **Immediate feedback and praise for correct responses.** Peer tutors provide feedback and praise to their tutees, and the teacher provides feedback to the tutors as a means of promoting high-quality peer teaching and learning during CWPT sessions.

- **Systematic error correction.** Tutors immediately and systematically correct mistakes by their tutees. Materials that reveal the correct response to the tutor enable students who are themselves learning the material to detect and correct errors.

- **Continuous monitoring of student progress.** All evidence-based CWPT models incorporate direct and frequent measurement of students' progress. These data are obtained in a variety of ways, such as end-of-session assessments by tutors, regularly scheduled, teacher-administered "check-outs" of students' performances, weekly pre- and posttests, and curriculum-based measures. In some models, items missed on follow-up assessments are returned to the student's folder for additional practice and relearning.

- **Motivation.** Students have fun doing CWPT. Participation and learning are motivated by game-like formats, individual and team goals, charting their progress, and point/reward systems.

HOW TO GET STARTED

1. **Identify curriculum area and measurable learning outcome.** What should students know or be able to do as a result of CWPT?

2. **Design a practice activity that will provide tutors and tutees with direct and repeated practice with this knowledge and/or skill.**

3. **Determine the sequence of steps that will make up each CWPT session.** For example, students obtaining materials and setting up, tutoring practice trials, testing, recording performance, and clean-up/putting materials away. For each component, specify (a) materials needed, (b) what the tutors and tutees will do, (c) what the teacher (you) will do, and (d) how many minutes it should take.

4. **Create tutoring folders, task cards, and other necessary materials.** Consider having students make their CWPT materials from models you provide.

5. **Build in a motivation component.** Specify how you will reinforce desired behavior by tutors (e.g., providing tutees with frequent response opportunities) and tutees (e.g., acquiring targeted knowledge and skills). Consider incentive systems such as "Mystery Motivators," described in Chapter 6.

6. **Train students to carry out the CWPT procedures.** Teach peer tutoring skills as you would any other skill: be explicit, provide models, have students discriminate correct and incorrect procedures, provide guided practice, give feedback, reinforce accurate responses, and correct errors.

7. **Implement and evaluate.** Collect data to answer three questions: Are students implementing the tutoring procedures correctly? Are students acquiring and maintaining targeted knowledge and skills? Do students enjoy the CWPT program? CWPT should be fun for students and their teacher.

MyEducationLab™

To observe teachers who have adapted the OSU CWPT model to fit the needs of their students, go to the book resources for this text on MyEducationLab.

Classwide Peer Tutoring:
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Teaching Students to Recruit Positive Attention: A Review and Recommendations[1]

Sheila R. Alber, Ph.D.,[2,4] and William L. Heward, Ed.D.[3,4]

Positive teacher attention and praise are powerful influences on student performance in the classroom. But the classroom is a very busy place, a place where important efforts by students can easily go unnoticed. In such instances, an existing and potentially effective natural contingency of reinforcement is "asleep" and needs to be "woken up." Teaching students how to recruit positive teacher attention is one way to activate dormant contingencies of reinforcement and help students take a proactive role in their learning. This paper reviews the recruitment research to date, discusses implications for practitioners, proposes a recruitment training package including strategies for promoting generalization of recruiting skills, and offers recommendations for future research.

KEY WORDS: generalization; inclusion; recruiting; reinforcement; special education; teacher praise.

One of the challenges of teaching children with disabilities is programming for maintenance and generalization of academic and social skills. Newly learned knowledge and skills are more likely to be used in post-instruction settings when they are reinforced in those settings. Students may initially emit desired academic and social skills in settings (e.g., the general education classroom) other than where they initially acquired those skills, but if those behaviors are not reinforced

in some way, students may cease to emit those target behaviors. Teachers in general education classrooms can help prevent such generalization failures by providing contingent praise and attention to students when they emit desired behaviors. However, classrooms are busy places where desired student behaviors can easily go unnoticed by and, hence, unreinforced by teachers.

Social approval, often conveyed through verbal praise, is a powerful reinforcer for most individuals. Behaviors valued by significant others in a person's culture are often maintained by some form of social approval. Approval usually occurs intermittently—that is, not every instance of a target behavior is followed by praise—which tends to strengthen and maintain behaviors already emitted with some frequency. If a newly acquired behavior does not initially contact a rich schedule of reinforcement (e.g., some form of approval), it may no longer be emitted (Cooper, Heron, & Heward, 1987; Malott, Whaley, & Malott, 1997; Skinner, 1953). Failure to maintain newly learned skills is a common problem for students with disabilities who are included in general education classrooms.

Teacher praise and attention is a primary form of social approval in school settings. The natural contingencies of the typical classroom, however, undermine teachers' frequent use of praise and strengthen their reprimanding behavior. Naturally existing contingencies make it more likely that teachers will notice and attend to a disruptive student than to a student who is working quietly and productively. Disruptive behavior often evokes teachers to respond immediately so disruptive behaviors will cease. When students yell out, tease one another, use profanity, or leave their seats and run around the classroom, teachers often provide negative attention (e.g., reprimands). Paying attention to students when they are behaving inappropriately (e.g., "Carlos, you need to sit down right now!") is negatively reinforced by the immediate cessation of the inappropriate behavior (e.g., Carlos stops running around and returns to his seat). As a result, the teacher is more likely to attend to student disruptions in the future.

The effects of reprimanding a child who misbehaves are immediate—the negative reinforcement in the form of cessation of the annoying behavior effectively and naturally teaches us to punish one another. But the effects of verbal praise are usually delayed, making it difficult for us to learn to use praise. These naturally occurring contingencies are so pervasive that Foxx (1992) suggested that praising others be considered "an unnatural act" for humans.

Although few teachers must be taught to reprimand students for misbehavior, many teachers need help increasing the frequency with which they praise student accomplishments. Teacher-praising behavior is usually not reinforced as effectively as teacher-reprimanding behavior. Praising a student for appropriate behavior usually produces no immediate effects—the student continues to do his work when praised. Although praising a student for working productively on an assignment may increase the future likelihood of that behavior, there are no immediate consequences for the teacher. By contrast, reprimanding a student

often produces an immediate change in the teacher's world—the student ceases (if only temporarily)—which functions as effective negative reinforcement for reprimanding.

The student's disruptive behaviors, in turn, may be positively reinforced by the teacher's attention thereby increasing future incidences of disruptive behaviors. A student may stop the disruptive behavior at the moment the teacher yells at him, but an increased frequency of disruptive behavior in the future is likely if the teacher's attention functions as a reinforcer. Although teacher attention comes in the form of disapproval, it may still be reinforcing to the student. For some children, negative attention in the form of disapproval is better than no attention at all (Alberto & Troutman, 1999; Madsen, Becker, & Thomas, 1968).

Attending to instruction, completing assigned seatwork, and following directions are examples of appropriate classroom behavior that should produce positive teacher attention, but may not. When the teacher does not reinforce appropriate student behavior, that behavior may occur at lower rates or completely cease to be emitted. Teachers need to be skilled at "catching students being good" to help students maintain and extend appropriate behaviors. This approach, however, places the responsibility for noticing desirable behaviors entirely on the teacher.

Training students to recruit positive teacher attention increases the probability that desired student behavior will be noticed and reinforced by teachers. When students are taught to draw their teacher's attention appropriately to their accomplishments, they are being trained to recruit reinforcement. When a student recruits properly, a teacher is provided with a prompt to praise desired behaviors.

THE POWER OF PRAISE

Teacher praise—a powerful, low cost reinforcer—has been demonstrated to be an effective behavior change tool with a wide range of learners in a wide range of settings. Recent research has shown the positive effects of contingent praise on the behavior of infants (e.g., Poulson & Kymissis, 1988), preschoolers (e.g., Connell, Randall, Wilson, Lutz, & Lamb, 1993; Fox, Shores, Lindeman, & Strain, 1986), elementary school students (e.g., Martens, Lochner, & Kelly, 1992; McGee, Krantz, Mason, & McClannahan, 1983; Mudre & McCormick, 1989; van der Mars, 1989), adolescents (e.g., Martella, Marchand-Martella, Young, & MacFarlane, 1995; Staub, 1990; Wolery, Cybriwski, Gast, & Boyle-Gast, 1991), and adults (e.g., Haseltine & Mittenburger, 1990).

Although there is substantial evidence that contingent praise, approval, and/or positive attention is an effective tool for behavior change, there are some who argue against the use of any contingent rewards including praise (Hintz & Driscol, 1988; Kohn, 1993a, 1993b; Lepper, Keavney, & Drake, 1996; Ryan & Deci, 1996). Kohn (1993a, 1993b) claims that using "extrinsic motivators" such as

reinforcement programs, incentive plans, grades, and verbal praise damage the "intrinsic" motivation of employees and students to perform and learn. Kohn argues passionately and articulately—but without a sound empirical base—that not only is praise ineffective, it is actually harmful to students. Kohn claims that praise increases pressure to "live up to" the compliment, insinuates unrealistic expectations of future success, insidiously manipulates people, establishes a power imbalance, insults people if awarded for unchallenging behaviors, and undermines intrinsic motivation.

The research literature does not support Kohn's contention that students are harmed by rewards. Cameron and Pierce (1994, 1996) drew the following conclusions from their meta-analysis of 96 experimental studies on the effects of reinforcement/rewards: verbal rewards/praise were found to increase intrinsic motivation; tangible rewards do not decrease intrinsic motivation; and rewards are only detrimental when delivered noncontingently (i.e., just for engaging in an activity). When praise and other forms of positive feedback are given and later removed, people continue to show intrinsic interest in their work.

Despite its documented effectiveness for increasing desired student behaviors, teacher praise is used infrequently in general education classrooms. White (1975) summarized the results of 16 observational studies of approval and disapproval rates by teachers in 104 general education classrooms grades 1–12. Although the overall rate of teacher approval was relatively high in first and second grade (the highest being 1.3 approvals per minute), a sharp decline in teacher approval rates was apparent in third grade and continued into high school. In every grade after second, the rate at which teachers made disapproving statements to students exceeded the rate of praise by both general and special education teachers (Baker & Zigmond, 1990; Deno, Maruyama, Espin, & Cohen, 1990; Gable, Hendrickson, Young, Shores, & Stowitschek, 1983; Nowacek, McKinney, & Hallahan, 1990; Ysseldyke, Thurlow, Mecklenburg, & Graden, 1984).

NATURAL CONTINGENCIES OF REINFORCEMENT

Teacher praise for appropriate student behavior, even though it occurs on a thin schedule, can be considered a natural contingency of reinforcement in the classroom. A natural contingency of reinforcement exists in a given environment when reinforcers are commonly contingent upon a given response class without intervention. Natural contingencies of reinforcement select and maintain repertoires of behaviors that are both adaptive and harmful (Baer & Wolf, 1970; Kohler & Greenwood, 1986; Stokes & Baer, 1977).

Aiming for natural contingencies of reinforcement as an instructional approach begins with targeting and teaching behaviors that are most likely to be reinforced by the natural contingencies in the post-intervention environment (Allyon & Azrin, 1968; Baer, 1981; Kohler & Greenwood, 1986). Natural contingencies of reinforcement are most likely to maintain behaviors that are frequently demanded in a given setting, typically performed by others (i.e., normalized), and age appropriate. Sometimes appropriately targeted behavior is not reinforced in the natural environment because its topography, rate, latency, duration, magnitude, and/or accuracy do not meet prevailing criteria for reinforcement. In such cases, additional training is needed to improve the quality and/or fluency of the behavior (Stokes & Baer, 1977; Stokes & Osnes, 1989).

Sometimes, however, appropriate behavior is emitted at requisite criteria but not reinforced because a potentially effective natural contingency is inoperable at the moment. Because concurrent contingencies compete for teacher behavior in the classroom, the natural contingency of teacher praise and attention for desired student behavior may be dormant when it is needed most. The unfortunate result: student behavior that would be reinforced if noticed by the teacher does not contact the natural contingency of teacher praise and attention. Baer (1981) described this situation as one in which a natural contingency of reinforcement is "asleep and needs to be waked up and turned on" (p. 17). Training students to recruit teacher attention is one way to wake up an important natural contingency of reinforcement in the classroom.

RATIONALE FOR TEACHING STUDENTS TO RECRUIT

Although teachers have always had to deal with a wide range of student abilities, an increasing number of students with disabilities are being educated in general education classrooms (Heward, 2001; U.S. Department of Education, 2000). Although most general education teachers surveyed by Scruggs and Mastropieri (1996) were supportive of inclusive education, two-thirds indicated they had insufficient training or resources to properly accommodate students with disabilities. Special education teachers report that as a result of the inclusion movement they have less instructional time with their students (Schumm et al., 1995). Consequently, some students with deficient academic and social skills are expected to cope with the often higher standards of the general education classroom while receiving less intensive, goal-directed services than they did in special education placements (Deno, Maruyama, Espin, & Cohen, 1990; Fuchs, Fuchs, 2000; Fuchs, Fuchs, Fuchs, & Bishop, 1992).

Although teachers in general education classrooms are expected to make instructional adaptations and accommodations for students with disabilities, they do not always do so. The majority of secondary teachers interviewed by Schumm et al.

(1995) believed that students with disabilities should not receive differential support and must take responsibility for obtaining the help they need. Training students to recruit teacher attention is one way of helping low-achieving students and students with disabilities function more independently and influence the quality of instruction they receive. Recruiting is courteously calling teacher attention to one's accomplishments to obtain praise and/or instructional assistance for those efforts. Recruiting can result in praise for proficient behaviors as well as specific instructional assistance for the academic assignment at hand.

A BEHAVIOR ANALYSIS OF RECRUITING

A behavior analysis of recruiting is grounded in the principle of reinforcement. Unconditioned reinforcers are stimuli that function as reinforcers without previous learning (e.g., food, water, sexual stimulation). Conditioned reinforcers acquire the ability to strengthen behavior developed through pairing with other reinforcers (Cooper et al., 1987). Attention and approval from others are often paired with both unconditioned and conditioned reinforcers (Skinner, 1953). Although the stimuli that function as reinforcers is unique to each person and dynamic across time and context, attention and approval are reinforcing for most people, most of the time, including many students with and without disabilities.

Because attention is frequently and consistently paired with a wide variety of reinforcers over a person's life, it functions as a generalized conditioned reinforcer. Generalized reinforcers are effective under most conditions because they are not dependent upon deprivation of any specific reinforcer. Attention from others is a requisite and associated condition for contacting many other reinforcers. Consequently, attention and approval exert powerful control over human behavior.

Significant others who serve as frequent sources of reinforcement (e.g., parents, teachers) are usually targets for attention getting behaviors. How a student obtains attention from others is determined by his or her history of reinforcement. Students can recruit attention appropriately (e.g., politely inform the teacher that an assigned task is completed) or inappropriately (e.g., yell out, whine, sulk). Inappropriate recruiting often produces negative attention, which also functions as reinforcement for some children and adults (Skinner, 1953). For most people, however, attention in the form of approval is usually a more powerful reinforcer than disapproval. Individuals who serve as significant sources of reinforcement give approval for behaviors they find favorable, which in turn selects and maintains those behaviors.

The three-term contingency sequences of recruiting for students and for teachers respectively are illustrated in Figures 1 and 2. The first tier of the contingency diagram in Figure 1 illustrates that the antecedent to the behavior "do work" is the presentation of the work (e.g., the teacher instructs the student to complete a
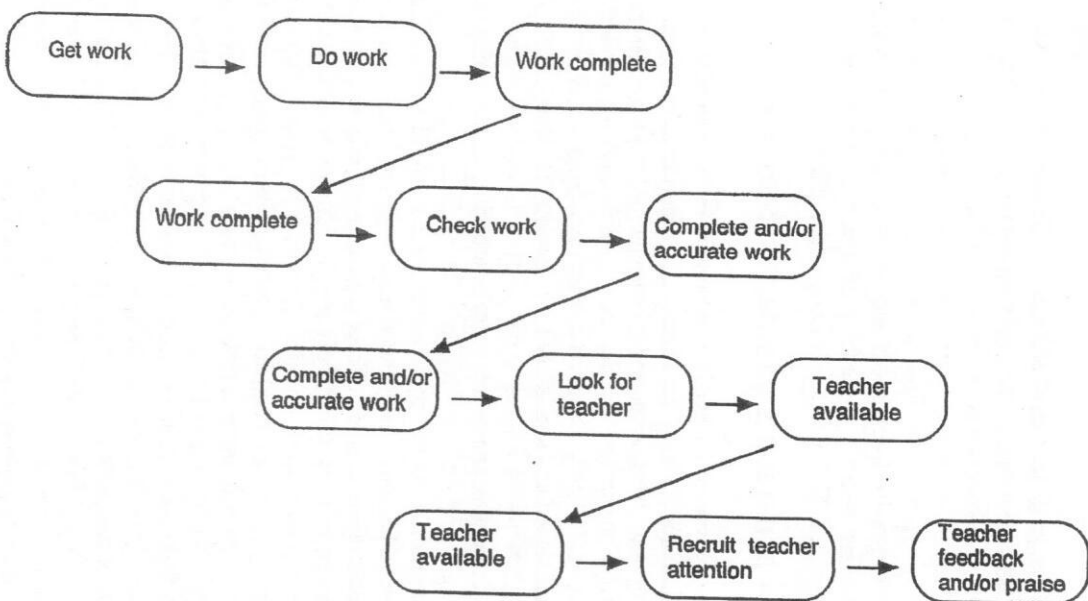
Fig. 1. Three-term contingency diagram illustrating recruiting sequence for students.

page in her math workbook). The consequence of "do work" is "work complete," which functions as the antecedent for "check work" (looking for and correcting errors) in the second tier. In the third tier of the contingency diagram, "complete and/or accurate work" becomes an antecedent for locating the teacher. The consequence for locating the teacher is finding her available (e.g., the teacher is in the classroom and is not busy with another task). The availability of the teacher then becomes an antecedent for "recruit teacher attention" (i.e., the student raises her hand, the teacher comes to her desk, the student asks, "How did I do on my math paper?"). Recruiting produces the consequence of "teacher feedback and/or praise." Although teacher praise does not occur until the final step of the chain, it may ultimately make completed work and accurate work function as conditioned reinforcers.

A three-term contingency diagram of student recruiting on the teacher's behavior is shown in Figure 2. The teacher's response to student recruiting is also reinforced. When she checks the work, she sees that it is "complete and/or accurate" or "incomplete and/or inaccurate." When the work is accurate, the teacher is first reinforced by the student's mastery of the material. Student work that is complete and/or of high quality serves as the antecedent for teacher praise, which in turn is reinforced by the student's smile and, "Thank you." Similarly, "incomplete and/or inaccurate work," is the antecedent for providing instructional assistance, which produces the reinforcing consequence of student appreciation (e.g., "Thanks for showing me how to do that.").

When a student recruits appropriately, both participants in the interaction are reinforced, increasing the future likelihood of student recruiting and teacher praising. More important, the teacher attention and assistance obtained by recruiting increase the future likelihood of the student emitting the functional academic and social skills for which she recruited teacher attention. In time, teacher attention may not be needed to maintain target skills because they have contacted another powerful natural contingency of reinforcement. "A very powerful reinforcer is available, however. It does not need to be contrived for instructional purposes; it is unrelated to any particular kind of behavior and hence always available. We call it success." (Skinner, 1989, p. 91).

RESEARCH ON RECRUITING

Research to date demonstrates that students of various ages and abilities can learn to self-assess their performance and recruit positive attention from teachers and significant others in a variety of classroom and community-based settings. A computer and hand search of peer-reviewed journals in applied behavior analysis (e.g., *Journal of Applied Behavior Analysis*, *Journal of Behavioral Education*), developmental disabilities (e.g., *Research in Developmental Disabilities*), and special education (e.g., *Exceptional Children*, *Learning Disabilities Research &*

Fig. 2. Three-term contingency diagram illustrating recruiting sequence for teachers.

Student recruits → Teacher checks student's work →

- Complete and/or accurate work → Teacher gives praise ("good job") → Student smiles and says "Thank you."
- Incomplete and/or inaccurate work → Incomplete and/or inaccurate work → Teacher gives instructional assistance → Student smiles and says "Thank you."

Practice) identified 10 experimental studies in which children were taught to recruit attention from others. These studies, which are summarized in Table I, show that recruitment training has been successful with preschoolers, upper elementary/middle school students, and adolescents/young adults.

Preschoolers

Stokes, Fowler, and Baer (1978, Experiment I) taught four typically developing preschoolers to evaluate the quality of their academic work (paper and pencil writing tasks that involved tracing lines and letters) and to recruit feedback from their teachers by raising their hands and asking questions such as "Have I been working carefully?" or "How is this?" The children used these skills successfully with teachers who were unaware of the study's purpose, and approximately 90% of the children's recruiting responses were followed by teacher praise. During baseline, the students received a mean of 1.0 teacher praise statement per 10-min session. After recruitment training (generalization programming phase), they received a mean of 4.4 praise statements from the teachers per session. The production and accuracy of the children's academic work also increased after they began recruiting teacher attention—from a baseline mean of 34 items correct (47% accuracy) to 54 items correct (72% accuracy)—although no contingencies had been placed on production or accuracy.

Stokes et al. (1978, Experiment II) conducted a replication of their first experiment, using the same procedures, to teach four preschoolers with "comprehensive academic and behavior problems" to recruit teacher praise and attention in a regular preschool classroom. Recruited teacher praise increased from a mean of 1.2 praise statements per 20-min session to a mean rate of 2.4 praise statements per 20-min session. The academic tasks in this experiment (printing skills) were not constant across conditions because the instructional program required increasingly difficult tasks for each child. However, data collected on academic tasks showed the children maintained high levels of proficiency throughout the experiment, a mean of 83% accuracy of completed items in baseline, and a mean of 86% accuracy of completed items after recruitment training.

Four preschoolers with developmental delays who did not stay on task during in-class transitions (e.g., starting to clean up when told, putting materials away, getting ready for the next activity) participated in a recruiting study by Connell, Carta, and Baer (1993). Training the children to self-assess their cleaning-up performance resulted in increases in active engagement during the training sessions but produced limited and short-lived generalization to the actual classroom. Following a positive self-assessment of their performance, the children were then taught to recruit teacher praise (e.g., saying "I'm done", and approaching the teacher with outstretched arms for a hug). Each child was observed in his or her
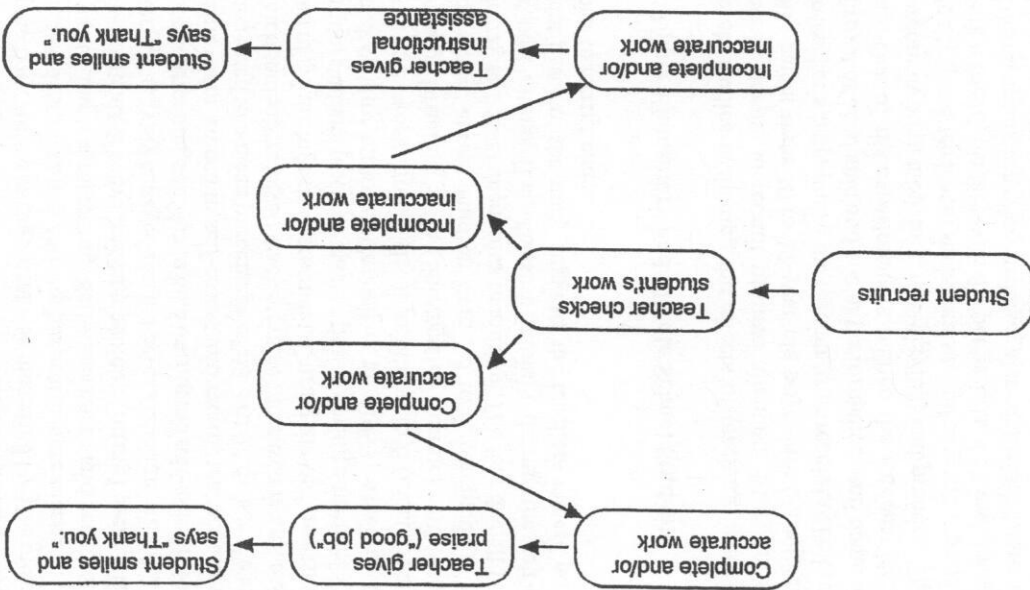
Table I. Summary of Recruiting Research

Authors	Subjects	Target skill(s)	Recruitees	Generality setting(s)	Results
Seymour & Stokes (1976)	4 adolescent girls in a maximum security unit	Classroom, workshop, office, and kitchen tasks	Maximum security unit staff*	Different vocational training areas of the maximum security unit	Increased recruiting, staff praise, and work productivity
Stokes, Fowler, & Baer (1978)	8 preschoolers, 4 typically developing & 4 with academic and behavior problems	Academic paper and pencil tasks	Preschool teachers*	General education preschool classroom	Increased recruiting and increased teacher praise
Morgan, Young, & Goldstein (1983)	Three 10-12 year-old boys with behavioral disorders	Academic and social skills	General education teachers*	General education classrooms	Increased recruiting and teacher assistance
Hrydowy, Stokes, & Martin (1984)	6 typically developing fourth graders	Language arts and social studies classwork	General education teacher*	General education classroom	Increased and increased teacher praise
Mank & Horner (1987)	5 adults with mental retardation	Restaurant work (e.g., washing dishes)	Job supervisors	Integrated job settings	Increased work production
Harchik, Harchik, Luce, & Sherman (1990)	Four 9–13 year old boys with autism	Daily living & academic skills	Group home staff*	Different rooms in a group home setting	Increased recruiting across settings
Connell, Carta, & Baer (1993)	4 at-risk preschoolers	Cleaning up at transition time	Preschool teachers*	The subject's classrooms	Increased active engagement, recruiting, & teacher praise
Craft, Alber, & Heward (1998)	4 developmentally delayed fourth graders	Spelling assignments	General education teacher*	General education classroom	Increased recruiting, teacher praise, and academic productivity
Alber, Heward, & Hippler (1999)	3 students with learning disabilities, 1 student with difficulty in math	Math and social studies assignments	General education teachers*	General education classrooms	Increased recruiting, praise, instructional feedback, and academic productivity
Wolford, Heward, & Alber (2001)	4 students with learning disabilities	Language arts assignments in coop. learning groups	Typically developing peers*	General education classrooms	Increased recruiting and instructional feedback

Note: * = The recruitees were naive to the purpose of the study.

classroom three times per week. The observation periods lasted 3 to 7 min, beginning when the teacher signaled the students to clean up and ending when the teacher began a group activity. Active engagement was measured by 10-s momentary time sampling, while student recruiting and teacher praise were measured with discontinuous 10-s partial interval recording. Self-assessment and recruitment training resulted in upward trends of active task engagement. During baseline, the mean percentage of intervals actively engaged ranged across students from 7.2 to 31.2, increasing to a mean percentage of 54.5 to 88.5 during the self-assessment condition. After the students were trained to self-assess and recruit teacher attention, active engagement increased to a mean percentage of 63.3 to 97.5. The mean number of intervals in which students received teacher praise increased from a baseline mean of .30 to a mean of .35 during self-assessment. During the self-assessment plus recruiting condition, students received teacher praise during a mean of 1.6 intervals.

As a social validity measure, Connell et al. (1993) asked the teachers to rate the children each week, from 1 (least irritating) to 6 (most irritating) on the Subjective Units of Irritation Scale (Sherman & Cormier, 1974). Mean ranks during baseline ranged across children from 5.3 to 6, compared to mean ranks of 1.5 to 3.5 during self-assessment plus recruiting. The fact that all four children received their best ratings (i.e., "least irritable") during the self-assessment with recruitment phase of the study suggests the teachers viewed positively the children's efforts to recruit praise.

Upper Elementary and Middle School Students

We found six studies evaluating the effects of teaching upper elementary or middle school students to recruit positive attention. Morgan, Young, and Goldstein (1983) taught three 10- to 12-year-old boys with behavioral disorders to prompt their teacher's help, praise the teacher after receiving help, prompt the teacher for approval of academic and social performance, and thank the teacher for the approval. One of the experimenters trained the students in the special education classroom through modeling, role-playing, and practice. The students were systematically given feedback, social praise, and access to special activities (e.g., playing with a friend, playing with the pet gerbils, walking around campus) for engaging in the recruiting behaviors in the regular education classroom. Student and teacher behaviors were recorded during 30-min observation periods. All three boys received significant increases of teacher praise. During baseline, the mean frequency of teacher praise ranged across students from .4 to 1.9. After recruit training was complete, the mean frequency of teacher praise ranged across students from 1.3 to 3.0.

Hrydowy, Stokes, and Martin (1984) taught 6 fourth-graders who were working below grade level to recruit praise from their classroom teacher. The students

were trained to work quietly and accurately while completing part of an academic assignment (about one-fourth of the questions or items), evaluate their work and correct any errors, raise their hands to get the teacher's attention, and ask their teacher a question such as "How is this work?" or "Did I finish quietly?" Five of the six students learned to recruit appropriately, and four of the students received more teacher praise after recruitment training. The baseline rate of teacher praise statements ranged across students from .00 to .13 per 5-min, increasing to a mean rate of .06 to .22 per 5-min after recruitment training.

Harchik, Harchik, Luce, and Sherman (1990) taught 4 boys with autism and severe disabilities, aged 9–13 years, to recruit praise from adult staff in a community-based group home. The children were taught to ask questions (e.g., "How did I do?") and make statements (e.g., "Check it out.") that might set the occasion for adult praise after correctly completing leisure, self-care, or language activities. All four students successfully recruited staff praise across several untrained activities and in various untrained settings (e.g., kitchen, living room, classroom, bathroom, bedroom). Approximately 50% of the recruiting responses emitted by three of the boys were successful in producing staff praise, and 84% of the fourth child's recruiting responses were followed by praise. This study is especially important because it demonstrates that students with severe disabilities can learn to recruit positive adult attention and to generalize this skill across activities and settings.

Craft, Alber, and Heward (1998) extended the recruiting research with elementary/middle school students by assessing the effects of recruitment training on the productivity and accuracy of academic tasks for which students recruited teacher attention. Craft et al. demonstrated the effectiveness of recruitment training with 4 fifth-graders with developmental disabilities. The students were trained by the special education teacher when, how, and how often to recruit in the general education classroom. Training consisted of modeling, role-playing, error correction, and praise in the special education classroom. Students were taught to show their work to the teacher or ask for help 2 to 3 times per 20-min session and to ask questions such as: "How am I doing?" or "Does this look right?"

Data on the frequency of student recruiting and teacher praise statements were collected during a 20-min homeroom period when the general education students completed a variety of independent seatwork tasks (reading, language arts, math) assigned by the general education teacher, and the 4 special education students completed individualized spelling worksheets assigned by the special education teacher. This arrangement had been established prior to the experiment. If students needed help with their assignments during homeroom period, the typical recruiting procedure was taking their work to the teacher's desk and asking the teacher for help.

During baseline, the students recruited at mean rates of .01 to .8 (range across students) per 20-min session; after training, they recruited at mean rates of

1.8 to 2.7 per session. Recruitment training also increased the mean rate at which students received teacher praise, from a baseline range of .1 to .8 praise statements per session to 1.0 to 1.7 after training.

After recruitment training, all four students showed improvements in the completion and accuracy of their spelling assignments. The mean percentage of spelling worksheet items completed ranged across students from 8% to 60% during baseline with a mean of 25% to 67% of the completed items answered accurately. After recruitment training, the students completed ranged across of their assignments at a mean accuracy of 67% to 97%. This was the first study to report gains in academic productivity by students in a general education classroom as a function of recruitment training conducted in a special education classroom.

Alber, Heward, and Hippler (1999) extended recruiting research to a new subject population (middle school students with learning disabilities) recruiting in two different general education classrooms (math and social studies). In addition to teacher praise, this study also assessed of the effects of student recruiting on the frequency of instructional feedback, a variable not examined in previous recruiting studies.

Recruitment training was conducted individually with each student in the special education classroom at the end of the school day over 2 to 3 consecutive days. Training followed a protocol developed by Craft et al. (1998) and consisted of three parts: (1) instruction and role-play, (2) morning prompts, and (3) end-of-the-day check and reward. During the generalization-programming phase, the special education teacher reminded the students each morning to recruit teacher attention in the general education math classroom. At the end of the school day, the special education teacher gave each student a can of soda and tickets for a Friday afternoon prize drawing if the student's recruiting report matched data provided by observers. The morning prompts and end-of-the-day rewards were gradually faded during the generalization-programming phase and terminated at the beginning of the maintenance phase. Probe measures were conducted in a social studies classroom to determine if students would recruit teacher attention in another classroom without prompting or rewards.

The four students seldom recruited teacher attention prior to training. Of 60 total baseline sessions, there were only 9 (15%) sessions in which students recruited. After training, however, the students recruited on 56 (69%) of 85 generalization programming and maintenance sessions. Teacher praise was relatively rare prior to recruitment training. No instances of teacher praise, recruited or nonrecruited, were recorded for two of the students during baseline, one student received teacher praise during 1 of 15 baseline sessions, and another student received teacher praise during 5 of 28 baseline sessions. Teacher praise increased significantly after recruitment training. Of the 61 total instances of teacher praise statements recorded across all phases, 50 (82%) were recruited by the students. The

frequency with which students received instructional feedback also increased significantly after recruitment training. As a group, the students received instructional feedback on 23 (38%) of the 60 total baseline sessions. After training, they received instructional feedback on 66 (78%) of the 85 combined generalization and maintenance sessions.

The students achieved the following increases in mean percentage of worksheet items completed from baseline to the generalization-programming phase: Henry, 49% to 76%; Lisa, 62% to 85%; and Pam, 56% to 83%. (Academic performance data were not available for the fourth student in the study who was included in a social studies classroom in which in-class assignments were infrequent.) The mean accuracy with which the students completed worksheet items also increased from baseline to the generalization-programming phase: Henry, 51% to 72%; Lisa, 71% to 82%; and Pam 65% to 91%. During the maintenance phase all three students continued to demonstrate high percentages of completion and accuracy.

Recruitment training was ineffective for one student in this study, Lisa. During an interview conducted by the first author, Lisa indicated that she did not want teacher attention because the teachers "were there to help the dumb kids." Lisa worked out an arrangement with her parents that if her class work improved, the teacher would not provide attention related to her classwork. Her parents informed the LD tutor of this arrangement. Ironically, with respect to the context and purpose of this study, Lisa's increased completion and accuracy may have been produced by her desire to avoid teacher attention.

Wolford, Heward, and Alber (2001) trained four middle school students with learning disabilities to recruit positive attention from peers during cooperative learning groups (CLG). They assessed the effects of training on student recruiting, praise and instructional feedback from peers, and academic productivity. Each target student was placed in a CLG with 3 general education students. Group membership remained consistent throughout the study. Training was conducted in the special education resource classroom and consisted of providing a rationale for recruiting peer attention, modeling, role-playing, and repeated practice with praise and corrective feedback. The students were taught a three-step sequence for recruiting peer attention: (a) determine appropriate opportunity to ask a peer for help, (b) identify an available peer within the CLG, and (c) appropriately signal and ask peer for feedback or assistance. When a student successfully recruited during CLG in the general education classroom for two consecutive days, programming for generalization began.

During the generalization-programming phase, the special education teacher reminded each student to recruit at least twice but not more than four times during a 10- to 15-min CLG activity in the general education classroom and checked with each student at end of the day to determine if she had recruited appropriately. The special education teacher praised students for recruiting and let them select

an inexpensive trinket from a prize box if their self-reports matched the observer's data. The morning prompts and end-of-the-day checks/rewards were gradually faded during this phase. The morning prompts to recruit and the end-of-the-day checks/rewards were terminated during the maintenance phase.

All four students seldom recruited peer attention during baseline (mean rate ranging across students: 0.3 to 0.8 recruiting attempts per 10-min), and received low rates of peer attention (mean rate: 0.7 to 1.0). After training, the four students appropriately recruited their peers' attention during CLG activities at a mean rate of 1.4 to 2.4 per 10-min and received instructional feedback from peers at a mean rate of 1.4 to 2.8 per 10-min. After learning to recruit peer attention, all four students completed more of their CLG language arts assignments with greater accuracy.

Adolescents and Young Adults

Seymour and Stokes (1976) reported the first study in which students were explicitly taught to recruit adult attention. Three adolescent girls at a maximum-security institution for juvenile offenders were taught to work more productively in several vocational training areas of the institution and to self-record their work output. The researchers thought the girls' improved productivity would result in increased praise and positive interaction with the staff, which would, in turn, function as a natural contingency of reinforcement to maintain the girls' improved work habits. When it was found that the staff's low baseline rates of positive interaction with the girls did not increase although they were working more productively, the students were taught to recruit feedback from the staff. After the girls were trained to recruit adult attention, increases in recruiting responses and staff praise occurred. The overall mean recruiting rate for all 3 girls increased from one recruiting response per 123 minutes to one recruiting response per 17 minutes. The mean rate of staff praise increased from one staff praise comment per 154 minutes to one staff praise comment per 40 minutes.

Mank and Horner (1987) taught five young adults with mental retardation to self-assess their work performance and to recruit feedback from their supervisors. After timing and counting the number of work units (e.g., bussing tables, washing dishes) they completed during a specified interval, the students compared their productivity with a pre-established acceptable standard, marked either a "+" (met the standard) or a "−" (did not meet the standard) in a self-recording notebook, brought the self-recording notebook to their supervisor, and asked for feedback. When a student's notebook contained a "+," the supervisors provided praise (e.g., "You did a good job today. That was fast working."). When the notebook showed a student had worked below the criterion productivity rate, the supervisors provided disapproval and encouragement (e.g., "You worked slowly

today. I hope you do better tomorrow and get a plus."). The mean work rate across all 5 participants increased from 47.4% in the first production phase to 64.1% in the self-recruited feedback phase. The combined self-monitoring and self-recruited feedback procedures were effective for maintaining work rates that met or exceeded the supervisors' standards for up to 2 months.

Summary of Research Findings

The following statements summarize the collective results of the 10 studies reviewed for this paper:

- Students ranging in age from preschool to high school can be taught to recruit contingent attention and assistance from significant others.
- Students with mild and moderate disabilities can be taught to recruit contingent attention and assistance from significant others.
- Students who are taught to recruit receive more praise and instructional assistance from teachers.
- Recruiting attention for targeted academic or work tasks can increase the productivity and accuracy with which a student performs those tasks.
- Although most students seem to enjoy recruiting, some students are more appropriate targets for recruitment training than others.
- Teachers may view students who recruit their attention properly as more capable and likable (Alber et al., 1999; Craft et al., 1998).
- Training students to recruit attention is a relatively low-cost, low-effort intervention. In most studies, students successfully began recruiting teacher praise and attention after two or three 20-min training sessions.
- Spontaneous generalization of newly learned recruiting skills to relevant settings and persons is unlikely (Alber et al., 1999; Stokes, Fowler, & Baer, 1978). Therefore, prompts and contrived reinforcement may be needed initially to establish recruiting in those settings.

RECOMMENDATIONS FOR RECRUITMENT TRAINING

Select Target Students

Although most students could probably benefit from learning to recruit teacher praise and feedback, the behavior of some students makes them a first priority for such training. Ideal candidates for recruitment training are students who: (a) are shy and quiet, and rarely ask for help; (b) recruit for poor quality work and as a result, rarely receive teacher praise; (c) recruit inappropriately (e.g., yelling out to get the teacher's attention); and (d) recruit too frequently and are

viewed as a "pest" by teachers (Alber & Heward, 1997). It is important to conduct a pre-assessment to determine if teacher attention functions as a reinforcer for the target students because recruitment training will probably not be effective with a student who is not reinforced by teacher attention (Alber et al., 1999).

Select Target Behaviors

When selecting the target skills for which students will recruit praise and attention, it is important to choose behaviors that are likely to be reinforced by teachers and significant others in the generalization setting. Completing classwork and homework assignments accurately, writing neatly and legibly, and cleaning up quickly at transition times are examples of behaviors that are typically appreciated and praised by classroom teachers.

Other examples of behaviors for which students may recruit attention are: appropriate classroom social skills (e.g., sharing materials with other students, inviting other students to join in an activity); making contributions to a cooperative learning group (e.g., helping other students solve academic problems); using appropriate skills in class wide peer tutoring (e.g., praising students for correct responses); and creative writing (e.g., authoring original or interesting ideas). Students can be taught to point out their efforts and accomplishments for any academic or social behavior valued by teachers and significant others. To increase the likelihood that teacher praise will follow a student's initial recruiting attempts, trainers should start with target skills the student can already perform with some accuracy and consistency before addressing more complex skills.

Teach Self-Assessment

A critical component of recruitment training is teaching students to self-assess their work before signaling the teacher. The student who frequently asks her teacher to look at unfinished and incorrect work is unlikely to recruit much positive teacher attention. As a result, neither the student's recruiting behavior or her academic work is reinforced.

The simplest form of self-assessment is determining if one's work is complete. After students can reliably make the distinction between complete and incomplete work samples, they can be taught a variety of procedures to check the accuracy of their work such as, using answer keys, checklists (e.g., a list of steps for editing a composition), spot checks (e.g., selecting a few items on a math worksheet and working backwards, adding to check subtraction), and scanning work for frequently made errors (e.g., commonly misspelled words). Every self-assessment technique will not work for all students, skills, or settings. Teachers should try to

match the most logical technique with the demands of the task and the capabilities of the student.

Teach Appropriate Recruiting Behaviors

After the student has checked her work, the next step is signaling the teacher for feedback. Students should be taught when, how, and how often to recruit, as well as how to respond after receiving teacher feedback and attention. The specifics of these four elements will vary according to class size, subject area, and grade level. Students should signal for teacher attention after they have completed and self-checked a substantial part of their work. For example, Craft et al. (1998) and Alber et al. (1999) taught students to recruit teacher attention when half of their work was completed, Hrydowy et al. (1984) trained students to recruit teacher attention when one-fourth of their work was completed, and students in the Seymour and Stokes (1976) study were taught to recruit adult praise when they had completed one article of work and again at the end of a work period. Students will have more success recruiting praise when the teacher is nearby and available, and they must also learn when they should *not* try to get their teacher's attention (e.g., while the teacher is talking to an another student, taking the lunch count).

Students must also learn how to appropriately signal the teacher. The traditional hand raise should be part of every student's recruiting repertoire. Students should be taught additional methods of signaling the teacher depending upon teacher preferences and routines observed in the target classroom(s). For example, the appropriate recruiting response for students in the Craft et al. (1998) study was going to the teacher's desk, students in Alber et al. (1999) were expected to raise their hands and wait to be recognized, and Wolford et al. (2001) taught students to tap a peer on the shoulder or say the peer's name to recruit attention. The optimal way to determine appropriate recruiting responses is direct observation in the classroom. When direct observation is not possible, trainers should ask the teacher, the student, and/or the student's peers to describe appropriate methods for attaining teacher attention in the target setting.

Students should be taught a small repertoire of statements and questions that are likely to prompt positive feedback from the teacher. The fourth graders in the Hrydowy et al. (1984) study were taught to ask, "How is this work?" or "Did I finish quietly?" Connell et al. (1993) taught preschoolers to approach their teachers after they had finished cleaning up during transition times and simply say; "I'm done." Trainers should keep the verbal responses simple, but teach the student to vary what he says to avoid sounding stilted or robotic (e.g., "Please look at my work," "Look, I'm all finished!" "Did I do a good job?" and "How am I doing?"). Appropriate voice volume and intonation should also be modeled for and practiced with the student.

Students should be taught to respond to the teacher's feedback by establishing eye contact, smiling, and saying "Thank you." Polite appreciation by students is very reinforcing to teachers and increases the likelihood of positive teacher attention the next time the student recruits.

Not every recruiting response will result in teacher praise (Alber et al., 1999; Craft et al., 1998; Connell et al., 1993; Harchik et al., 1990), and some efforts to recruit positive attention may be followed by criticism or a reprimand (e.g., "This is all wrong. Pay better attention the next time," "Can't you see I'm busy? Don't bother me right now."). Trainers should use role-playing to prepare the student for these possibilities and have the student practice polite and affirmative responses (e.g., "Thank you for helping me with this," "I'm sorry. Would you show me how to do this later?").

Teach Appropriate Recruiting Rate

Another important component of training is teaching students to limit the number of times they recruit to avoid becoming a pest (Stokes et al., 1978). How often a student should recruit teacher attention will vary as a function of the teacher's style and the lesson or activity (e.g., independent seatwork, cooperative learning groups, whole-class instruction). Ideally, appropriate rates of student recruiting should be determined by direct observation in the general education classroom. When observation and/or consultation with teachers in the target setting is not possible, training should provide students with a repertoire of several recruiting routines. Teaching students to observe recruiting routines in a variety of settings and recruit accordingly might be beneficial. Based on the published research, we recommend a rate of one to a maximum of three recruitment responses during a 20-minute work period.

Model and Role Play the Complete Sequence

Training should begin with the teacher facilitating a brief discussion of how recruiting can help students be more successful (e.g., you will get more work done, your grades might improve, the teacher will be happy you did a good job). After students are able to explain how recruiting can benefit them, the trainer should model the recruiting sequence. Thinking aloud while modeling is good way to show students the recruiting sequence. While performing each step the trainer might say, "I'm finished with about half of my work. Now I'm going to check it. Did I line up my ones, tens, and hundreds columns?.. Yes...Did I remember to regroup when I added?.. OK, my teacher doesn't look busy right now, I'll raise my hand and wait quietly until she comes to my desk."

The trainer can have another student or an assistant play the role of the classroom teacher, and come to the trainer when she has her hand up. "Mr. Johnson, please look at my work." The helper should be prompted to praise the trainer (e.g., "Oh, you did a very nice job."). Then the trainer should model thanking the teacher. After the trainer has modeled the recruiting sequence, she should role play several types of recruiting episodes (both positive and negative) with the students, providing praise and corrective feedback until the student has recruited properly for several consecutive trials.

A learning strategies approach can be used to help students remember to recruit positive teacher attention (Schumaker, Nolan, & Deshler, 1985). For example, the mnemonic *CLASS* (Complete your work, *Look* it over for mistakes, *Ask* yourself if the teacher is available, *Signal* the teacher and ask her to look at your work, and *Say* "Thank you,") might help students remember the recruiting sequence (Alber & Heward, 1997).

Promoting Generalization to the Regular Classroom

The success of any recruitment training effort depends upon the student actually using his or her new skill in general education classrooms or other integrated settings. The likelihood that students will recruit in the general education classroom and in other relevant settings can be greatly increased by taking advantage of what has been learned from research on the promotion of generalized outcomes (Baer, 1981; Fowler, & Baer, 1981; Heward, 1987; Horner, Dunlap, & Koegel, 1988; Stokes & Baer, 1978; Stokes & Osnes, 1989). The nine strategies described below may increase students' initial use of their newly learned recruitment skills in the general education classroom or other target settings (Alber & Heward, 1997).

- *Simulate the generality setting as much as possible during training.* Students should practice self-assessing and recruiting teacher attention with the same instructional materials and activities used in the generalization setting.

- *Practice the full range of likely situations the student will encounter in the classroom.* Students should practice recruiting with different kinds of classroom activities, recruiting for various kinds of academic work, and responding to different types of teacher feedback.

- *Use minimum difference teaching examples.* After a student demonstrates accuracy with basic discriminations, such as when and when not to recruit teacher attention, he should be taught to make more difficult discriminations by using negative examples (i.e., when not to recruit) which have only slight differences from positive examples (Horner, Dunlap, & Koegel,

1988). For example, while it is a good time to signal the teacher when she is near your desk, you should not recruit when the teacher is near your desk but helping another student.

- *Use intermittent reinforcement during training.* Every effort to recruit will not be followed by positive attention (e.g., Connell et al. 1993; Craft et al. 1998). Intermittent reinforcement of recruiting during training will help prepare the student for this reality and increase the likelihood that recruiting will be maintained after training.

- *Remind the student to recruit in the regular classroom.* Prompting the student to recruit in the target setting is the easiest generalization strategy to implement. Once students are reliably emitting appropriate recruiting responses during training, the trainer should prompt them to recruit in the desired setting at a predetermined frequency. For example, Alber et al. (1999), Craft et al. (1998), Hrydowy et al., (1984), and Wolford et al. (2001) prompted students to recruit twice per session in the general education classroom. Trainers should also remind students to spread their recruiting responses across the class period and to vary the statements used to recruit feedback.

- *Give the student a physical prompt to recruit.* Trainers should give students a physical reminder to recruit that can be taken to the target setting. Craft et al. (1998) drew small boxes on the students' worksheets to remind students to recruit. Alber et al. (1999) provided students with five 1″ × 3″ prompting cards taped to a file folder and inserted in their notebooks. Three boxes were drawn on each card for the student to check each time he or she recruited. The contrived physical prompts used in these two studies also served as self-recording devices for the students.

- *Teach students to self-record their recruiting responses.* Give students a simple way to count and keep track of their recruiting responses. Students might self-record the number of times they recruit by writing hash marks at the top of each written assignment or by using a wrist counter (Hrydowy et al., 1984). The self-recording procedure can also be designed to serve as both a reminder for the student to recruit teacher attention and as a way to prevent the student from recruiting too often. For example, at the beginning of a class period the student can put two or three pennies on one corner of his desk. Each time he recruits teacher attention he puts a penny in his pocket. The student stops recruiting when all the pennies are in his pocket (Alber & Heward, 1997).

- *Provide delayed rewards for recruiting.* Trainers should meet with students at the end of the school day and ask them to report the number of times they recruited teacher attention earlier that day in the regular classroom. In addition to praise, tangible rewards should be considered (Alber et al., 1999; Connell et al., 1993; Craft et al., 1998; Stokes et al., 1978). Such

"delayed reinforcement" can be very effective as a generalization strategy (Baer, Williams, Osnes, & Stokes, 1984; Fowler & Baer, 1981).

• *Ask the general education teacher to praise student-recruiting efforts.* In most of the recruiting studies reviewed for this paper, the recruiting targets were not told the purpose of the studies because their responses were key dependent variables. In practice, however, informing general education teachers that a student has been trained to recruit their attention is another way to "wake up" the natural contingency of reinforcement and should increase the number of recruiting responses that produce praise and/or instructional feedback. Helping students learn to properly recruit teacher attention and assistance could become a focal point of special and general education teachers' collaborative effort to support the inclusion of students with disabilities.

RECOMMENDATIONS FOR FUTURE RESEARCH

Systematic replications and extensions of recruiting research should seek to expand the settings in which children recruit, increase range of persons who are targeted as praise agents, develop highly efficient training procedures, and assess the durability of recruiting across longer maintenance phases.

Settings

For recruitment training to help students contact as many available but dormant natural contingencies of reinforcement as possible, their newly learned recruiting skills must generalize to a wide range of relevant settings. Future research should attempt to measure students' recruiting and its effects across different classrooms, teachers, instructional formats (e.g., large- and small-group lessons, cooperative learning activities, homework), and curriculum/skill areas. Previous published studies on recruiting have assessed the effects of recruitment training in the following settings: preschool classrooms (Connell et al., 1993; Stokes et al., 1978), elementary/middle school classrooms (Alber et al., 1999; Craft et al., 1998; Morgan et al. 1983; Hrydowy et al., 1984; Wolford et al., 2001), integrated job settings (Mank & Horner, 1987), vocational training settings (Seymour & Stokes, 1976), and group home settings (Harchik, et al., 1990). Additional settings for recruiting research may include a wider variety of instructional, work, community, home, and leisure settings. An important aspect of training individuals to recruit is assessing their performance in as many relevant probe settings as possible. Generalization of recruiting skills to as many settings as possible increases the likelihood that target individuals will tap into the natural communities of reinforcement throughout the day for academic, social, daily living, self-care, and

functional skills. The recruiting research will be strengthened by descriptive data on the rates and types of recruiting responses used by typically developing peers and on the frequency and type of praise, attention, and instructional feedback teachers provide in the selected settings. Such peer comparison data would provide important social validation for determining the parameters and judging the relative success of recruitment training.

Praise Agents

Preschool teachers (Connell et al., 1993; Stokes et al., 1978), general education teachers (Alber et al., 1999; Craft et al., 1998; Morgan, et al. 1983; Hrydowy, et al., 1984), job supervisors (Mank & Horner, 1987), group home staff (Harchik et al., 1990), and peers (Wolford et al., 2001) have been targeted as praise agents in previous recruiting research. Additional studies on recruiting from peers is warranted because peer attention and approval is more reinforcing for some students, especially at the middle and high school levels, than the approval of adults. Recruiting from peers could serve the dual purpose of obtaining praise and instructional feedback for academic tasks as well as increasing positive social interactions. Students might also be taught to recruit from their parents and their siblings in home settings.

In most of the recruiting research we reviewed, verbal praise was the only measure of teacher behavior. While the positive effects of contingent teacher praise are powerful and well documented, future research should also analyze the effects of student recruiting on other teacher behaviors. For example, it would be valuable to learn what effects, if any, various types and rates of student recruiting have on the frequency and forms of instructional feedback teachers provide, and whether recruiting affects teachers' rates of verbal disapproval.

Training Procedures

In the recruiting studies published to date, students were trained individually. Future research should examine the cost-effectiveness of group training. Small-group training would offer the potential advantage of students serving as models and role players for one another. Other training variations that could be researched include experimenting with different kinds of contrived stimuli as prompts for recruiting, self-assessment devices, self-recording strategies, fading strategies, and trainers. Research assessing the relative effectiveness and efficiencies of various training formats and procedures, and how setting factors and students' levels of functioning influence those outcomes, is needed.

Because teacher behavior was a key dependent variable, praise agents were kept experimentally naïve in previous recruiting studies. One possible direction

for future research may be to involve the general education teachers or significant others in recruitment training to increase the likelihood that most or all of the students' recruiting efforts will be followed by praise. While the students are trained to appropriately recruit teacher attention, the teacher can be trained to: praise students more frequently, recognize and praise student recruiting efforts, prompt students to recruit, and provide corrective feedback for inappropriate recruiting.

Increased Maintenance Phases

The limited duration of maintenance phases (often just 5 to 8 sessions) is a major limitation of much of the recruiting research to date. Short maintenance phases preclude assessing the extent to which natural contingencies of reinforcement may be responsible for a student's continued recruiting. If a student continues to recruit for an extended period of time after all trainer-provided prompts and consequences have been terminated, a reasonable assumption is that the positive teacher attention produced by the student's recruiting behavior is maintaining the behavior. The recruiting research will be enhanced greatly by studies with maintenance phases lasting several months, as well as probes for maintenance the following school year.

It is also necessary to consider the maintenance of student productivity. Recruiting may decrease over time as a student becomes more adept at performing the target skill and may not need the attention or assistance of others. That is, the target skill for which the student was trained to recruit teacher attention and assistance is now emitted with sufficient fluency to be maintained by the natural contingencies of success for that skill. Failure to maintain initially targeted rates of recruiting is not necessarily a problem if increased student productivity is maintained.
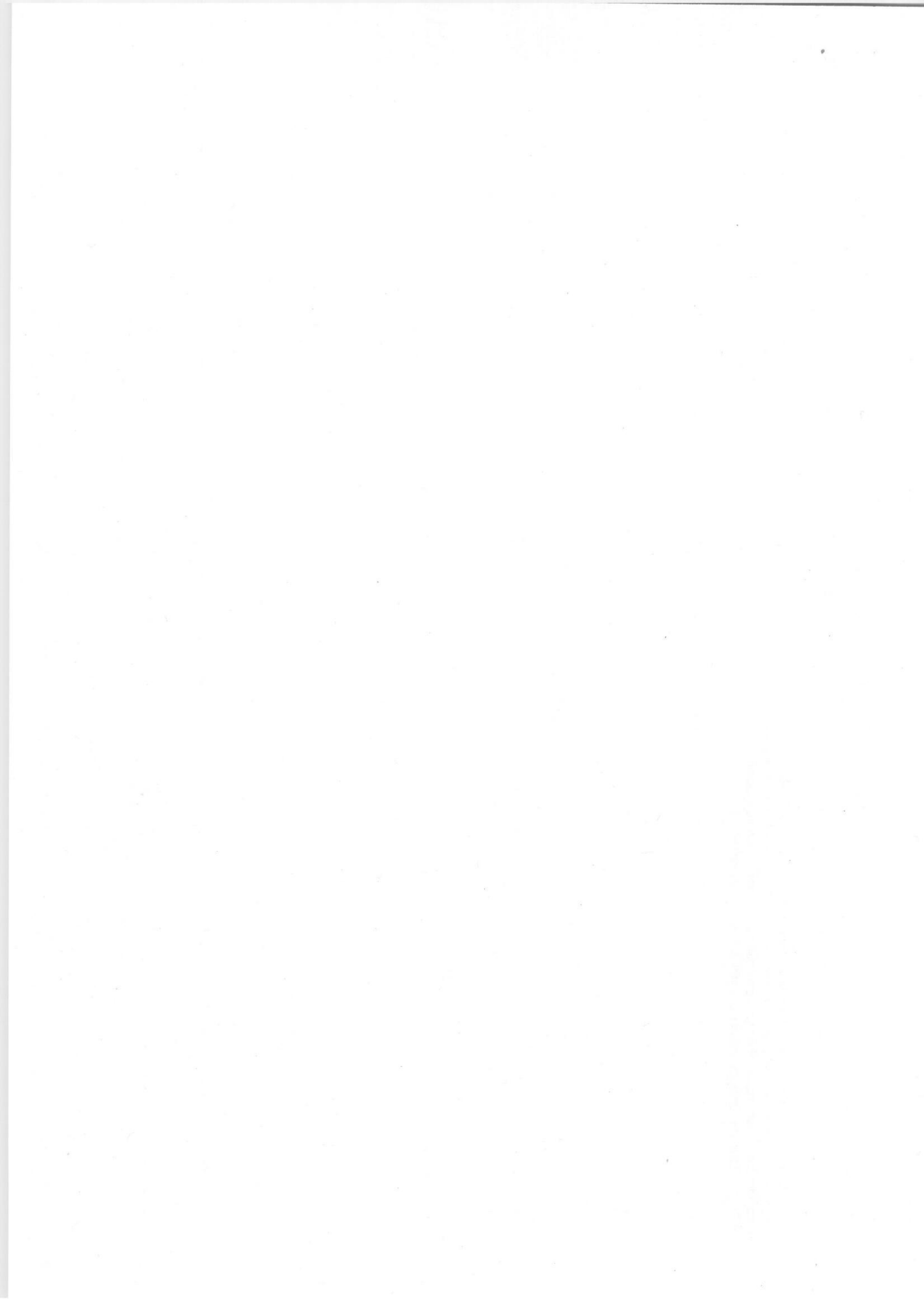
CONCLUSION

A major goal and challenge for special education is helping students with disabilities achieve success and maximum independence in integrated settings. The inclusion movement has made this challenge more pronounced than ever. Teaching students to recruit teacher attention is one strategy for promoting successful inclusion by enabling students with disabilities to actively influence the quality of instruction they receive. The success of students with disabilities in general education classrooms, especially as they progress into middle and high school, will depend in part on the degree to which they take a proactive role in their learning. Teaching students with disabilities to recruit teacher attention for their academic and social accomplishments can enhance their independent functioning and make their time in inclusive classrooms more productive and rewarding.

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References and Resources

Helping School-Age Pupils with Autism Succeed in Mainstream Classrooms

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Topics

- Evidence-Based Practices for Autism
- Choral Responding
- Response Cards
- Self-Monitoring
- Numbered Heads Together
- Classwide Peer Tutoring
- Clocklight
- Recruiting Teacher Attention and Praise

Items marked with an asterisk (*) are included with this presentation as downloadable documents.

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Choral Responding

Choral responding—all students in the class responding orally in unison to a question or item presented by the teacher— has been around since the days of the one-room schoolhouse. CR is the simplest and fastest way to increase student participation in group lessons. CR has been the response mode in numerous studies demonstrating a strong relationship between frequent ASR during instruction and improved learning outcomes (e.g., Maheady, Michielli-Pendl, Mallette, & Harper, 2002; Sterling, Barbetta, Heward, & Heron, 1997) and has been used successfully with students with disabilities (e.g., Cihak, Alberto, Taber-Doughty, & Gama, 2006; Flores & Ganz, 2009; Sterling et al., 1997).

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Response Cards

Response cards are cards, signs, or other items simultaneously held up by all students in the class to display their responses to questions or problems presented by the teacher. With preprinted RCs, each student selects from a personal set of cards the one with the answer he wishes to display. When using write-on RCs, students use dry-erase markers to write their answers on blank cards that they erase between learning trials. Numerous studies in general and special education classrooms at the elementary, middle, and secondary levels have found increased rates of student responding, higher accuracy of responding, and higher scores on quizzes and tests when RCs were used compared to lessons in which the most common method for obtaining student participation during group instruction—having each question answered by individual student.

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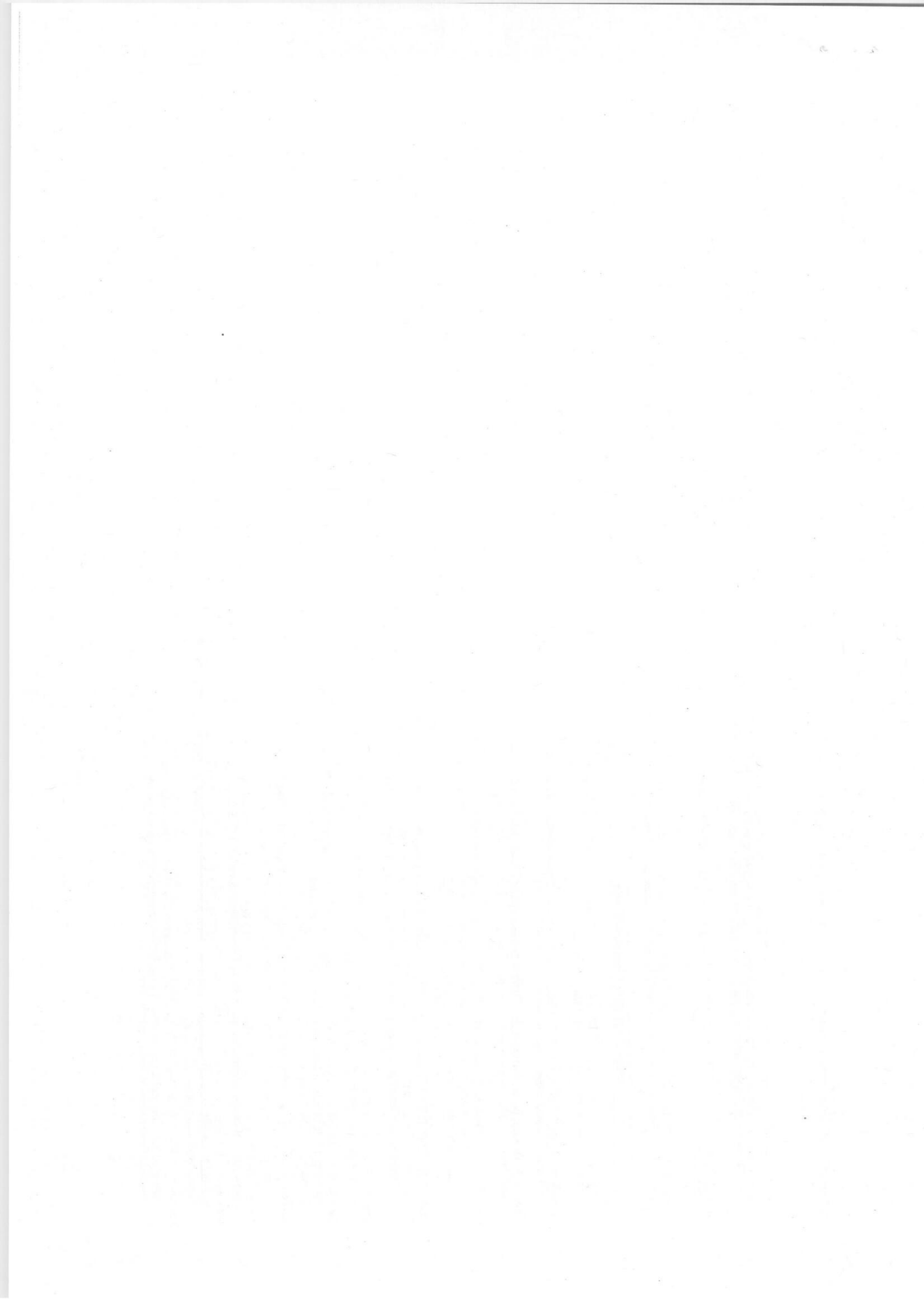
The Top 10 Reasons Children With Autism Deserve ABA

Mary Beth Walsh, Caldwell College
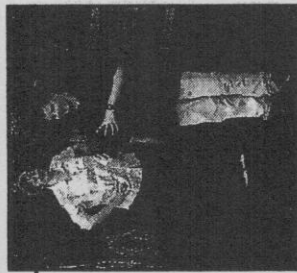
—— ABSTRACT ——

We who advocate for applied behavior analysis (ABA) for children with autism spectrum disorders often construct our arguments based on the scientific evidence. However, the audience that most needs to hear this argument, that is, the parents of children, especially very young children, diagnosed with autism, may not be convinced by the science alone. This essay attempts to make the case for the multiple benefits of ABA intervention through the use of humor and anecdotes couched in a "Top Ten List," and illustrating most points with stories of an engaging child with autism (my son, Ben).

Keywords: advocacy, applied behavior analysis, autism, parent training

Often we who advocate for applied behavior analysis (ABA) for children with autism spectrum based disorders, construct our arguments based on the scientific evidence supporting effective interventions. For people trained in science, this might prove a convincing argument upon which to construct an argument. However, the audience that most needs to hear this argument, that is, the parents of children, especially very young children, diagnosed with autism, come from varied backgrounds and diverse life experiences. There is no guarantee that making the case for effective intervention based on the science behind the intervention will be particularly convincing. In fact, there are good reasons to doubt that basing an argument on science will persuade many. For example, a Gallup poll conducted on the 400th anniversary of Darwin's birth showed that fewer than 40% of Americans believe in evolution (Newport, 2009).

This essay attempts to make the case for intervention based in ABA largely

[1] Having a child with autism has taught me many things, perhaps the most important one being to express gratitude for those who have helped him. Children with autism are the proverbial children for whom it takes a village, our families need help more than most, and indeed I would not be committed to advocating for effective intervention had my son not received excellent behavioral intervention from so many generous behavior analysts, many of whom have also spent hours talking me through the finer points of behavioral interventions—thus, educating me, along with Ben. So, I would like to begin on a note of thanks to the many who have labored to help me understand the value of behavioral intervention. Any success I have in making a user-friendly case for effective, science-based intervention for children with autism, is due to the generosity of others. This essay is dedicated to the many behavior analysts who have helped me understand.

by moving beyond simply stating that the science supports this intervention. Adopting the format made famous by David Letterman of the "Top Ten List," and illustrating most points with stories of an engaging child with autism (my son, Ben) this essay tries to provide an easily accessible case for the multiple benefits of ABA intervention for children with autism.[1]

Reason 10
Children with autism deserve ABA because there is more scientific evidence demonstrating ABA "works" than there is for any other intervention or treatment

This reason is often the most important reason for behavior analysts, but not always so for parents of children with autism. Parents rarely cite the many hundreds, perhaps thousands, of studies in the *Journal of Applied Behavior Analysis* and other journals when asked why they chose ABA to help their children with autism. Instead, many parents point to just one book: Catherine Maurice's, *Let Me Hear Your Voice.*

Maurice's book tells her family's story of two children diagnosed with autism and their use of behavioral interventions, and the remarkable progress both her children made—both acquired so many skills that they lost their original diagnoses. In fact the research tells us that quite a few children diagnosed with autism, perhaps as much as 40–50 percent, can learn enough to return to mainstream classrooms if they receive high quality, intensive, evidence-based interventions early enough (Helt et al., 2008; Lovaas, 1987; McEachin, Smith, Lovaas, 1993; Rogers & Vismara, 2008). For these children and their lucky families, ABA clearly "worked."

But I would like to suggest that ABA can "work" in other ways as well. Many of us, who were inspired to start down the ABA path by Maurice's book, realize at a certain point that our children are not going to lose their diagnoses and that they are not going to mainstream.

Nonetheless, ABA has "worked" for them. ABA worked to teach them skills, to teach them independence, to teach them to speak, to use the bathroom or sleep through the night, to gain the skills they will need to hold jobs as adults. We need to expand our understanding of what "works" means, and we parents need to speak more persuasively of the difference behavioral intervention has made in our children's lives. So, taking a cue from Maurice's book, I am going to tell you some stories about my son, Ben, and try to explore how ABA has worked for him and for us.

Reason 9
Kids with autism deserve ABA because they are human

You might think that the humanity of children with autism goes without saying, but I'm afraid you'd be mistaken. There are a variety of views of autism that at their core deny the basic humanity of individuals with autism, and that are particularly dangerous because they can too easily lead to denying that our kids can learn.

In the first place, there is the old school view of autism as horrible, intractable, and untreatable. This view is reflected in early popular media accounts of people working with children with autism, which began to appear in the press in the 1960s. *Life* magazine, in 1965, referred to children with autism as "far-gone mental cripples," "whose minds are sealed against all human contact" (Moser, 1965). *The New Yorker* in 1968 described autism as "organic and incurable" and praised those who work with children with autism because "they encounter beings so badly scarred, so remote that it must be hard for a psychoanalyst to even acknowledge them as fellow creatures" (Gay, 1968). The same article states that after three years of treatment, one patient was "becoming a human being." This view of autism renders individuals with autism as less than human.

At the other extreme are portrayals of individuals with autism as better than human, possessing gifts and abilities beyond those of "non-autistic" individuals. William Stillman in his 2006 book, *Autism and the God Connection: Redefining the Autistic Experience Through Extraordinary Accounts of Spiritual Giftedness*, gives examples of that spiritual giftedness, which includes a wide variety of supernatural talents by people with autism, such as the ability to read other people's minds, to telepathically communicate with both people and animals, to know the future, to be familiar with events that occurred before they were born, to perceive auras, and to speak with angels or other spirit guides. Stillman is so enamored of the spiritual gifts of those with, in his words, "autistic experiences," that he portrays them as thoroughly "other" than human beings, possessing a wide range of super-human, supernatural abilities and talents.

And, somewhere in the middle, but also fundamentally disparaging the basic humanity of individuals with autism, are certain voices from the neuro-diversity movement. In an essay famous in the blog-o-sphere, Jim Sinclair gives advice to parents of children with autism in his 1993 reflection titled: *Don't Mourn for Us.* He exhorts parents not to mourn for children who have been diagnosed with autism, but rather embrace the role of advocate for this "stranger" who has come into our lives. He says that when we look at our children with autism we should think:

This is an alien child who landed in my life by accident. I don't know who this child is or what it will become. But I know it's a child, stranded in an alien world, without parents of its own kind to care for it.

Can I just say that the phrase "without parents of its own kind" really sticks in my craw? Mr. Sinclair was apparently not in the room when I gave birth to my son, for my recollection (which is fairly strong because I was sadly unmedicated), is that my child gestated in my body for nine months, and then was delivered, birthed by me from my very body. Then, in fact, he went on to draw sustenance from that same body, by nursing for 18 months or so. In fact, it would be hard for me to name a single other being on the entire planet who is more "my kind" than my son Ben (unless we remember his older brother Sean). So pardon me if, as a woman who has given birth, I am offended by the claim that my child is an "alien." The point here is that this is an example of yet another view of individuals with autism that denies their fundamental humanity—a humanity that they share with all of us.

So, once upon a time, individuals with autism were portrayed as less than human, and today they are portrayed at times as more than human, or by others as, well, different from human. All of these views skirt perilously close to denying that people with autism are human—and this is always dangerous.

The autism spectrum is but a subset of the human spectrum—but it is part of the human spectrum. This is important because behavioral scientists have shown us some basic insights into how humans learn. When we deny the humanity of individuals with autism, we risk denying that they can learn.

Reason 8
Children with autism deserve ABA because it will help their parents be the best parents they can be for them

I think all of us parents want to help our children reach their potential. My older son Sean loves to play the trumpet, and according to his teachers, is apparently pretty good at it. Now, I can't teach him much about the trumpet or music in general, but I can make sure he takes the time to practice and help him to develop the habits of serious musicians. In this way, I can help him reach his potential.

In the same way I want Ben, my son who has autism, to reach his potential, but this goal can be trickier to achieve. Parenting a child with autism is a lot like parenting a typical child, but everything you know about parenting a typical child needs to be taken to an extreme to parent your child with autism. In fact, I think the image of "extreme parenting" fits well the task of raising a child with autism.

The *Encarta World English Dictionary* defines extreme sports as, "a sport considered more dangerous and thrilling than ordinary sports and often involving hazardous stunts and tricks," which I think translates to what is required of parents of children with autism very nicely. "More dangerous and thrilling, involving hazardous stunts and tricks" pretty much describes the average weekend at my house. Let me give you some examples of extreme parenting.

All parents have to wean their babies off formula or breast milk and introduce solid foods, but most don't need a behavior analyst and a data-based program to teach chewing and swallowing of chicken nuggets, like we did. All parents help their children learn to talk, but most don't have to explicitly and separately teach their child how to make the /m/ sound and how to make the /ab/ sound using manual prompting to guide their mouths, before they hear their child say "mama" for the first time.

Many parents worry about the quality of their children's education, but few need to start a new ABA-based school just to provide a place where their child will actually learn.

All parents know it is best to remain consistent with their children, but few have pay for the occasional lapse like parents of children with autism do.

Parenting your child with autism is simply an extreme version of parenting. All parents know that they have an impact on their children's lives, but few have the potential to have the impact that we do. We parents of children with autism have to work harder to assure that our children learn all they can, reach their potential, and when we rely on ABA to measure progress and guide teaching, we know we are making all the difference we can.

Reason 7
Children with autism deserve ABA because it will help teach them how to sleep through the night and use the bathroom

I have to confess that I do not have any studies in hand that show behavioral intervention can help children sleep through the night.[2] But I do know that sleeping through the night (or just as good—staying in bed for the night), is one of those skills that parents are going to have to largely teach on their own—much like another important skill—toileting. Even if you have endless access to the best behavioral intervention in the world (and who has that?) certain skills are going to require deep, ongoing parental involvement in teaching. And your best friend here in achieving success is data collection.

Collecting data is not rocket science, it is not brain surgery, and it is not just for professionals. All parents want to see that their kids are learning, and most can just look at report cards to check this. But parenting a child with autism is, as I said before, like an extreme sport, so we can't wait for report cards—we need to measure ourselves. Here's what all that has meant in my life—here's what we've most often directly and frequently measured—toileting.

I have in my basement no fewer than six years of my son's toileting data—weekly data sheets that track each urination, each bowel movement, each accident, and each spontaneous initiation. Ben's father and I took most of the data. Why does this matter? Well, at the beginning, we knew that teaching was effective when we were quickly able to move to spontaneous initiation, and get him off a timed schedule of bathroom visits. How did we know to do so? The data revealed few to no accidents. Then, even with Ben initiating spontaneously, there were few accidents. But when we did have accidents, especially the dreaded but familiar bowel movement accidents, we were able to look at our data, see when these were likely to occur, and work to prevent them. Preventing the behavior helped keep it from becoming ingrained. Then, after many years, when I noticed he occasionally woke up with his pull-up completely dry, we began taking morning data on the pull-up.

After Ben was dry for about six weeks in a row, I took the pull-up away. The data revealed behavioral patterns that guided our intervention. The data showed us what to do. The data demonstrated that our son has this skill—a very important skill! He can go to the bathroom independently. He can sleep through the night in regular underwear. He learned this as quickly as he did because we directly and frequently measured his toileting behavior. This made a huge difference for all of us in the family. Now we can take Ben to his brother's concerts without an extra change of clothes in the bag. We can all sleep through the night without worry. We can stop spending our money on pull-ups! Yeah! And Ben can feel like any other accomplished, competent 10-year-old in the world, and go to the bathroom on his own, when he needs to. Probably, this matters most to him.

Reason 6
Individuals with autism deserve ABA because it is the best defense against the tyranny of low expectations

I suppose there are many stories to be told of low expectations for our children with autism that have to do with school districts, but what comes to my mind first is actually churches. As a member of the Autism and Faith Task Force of the Elizabeth M. Boggs Center for Developmental Disabilities, I occasionally get e-mails passed on to me that recount terrible, painful stories of individuals with autism, who have apparently not had access to quality interventions, and whose families bring them to church with less than happy results. The most famous of these cases occurred in the Midwest and resulted in a church seeking a restraining order against a large 13-year-old boy with autism whose family used a variety of distracting and unorthodox methods to calm him during services, including gently binding his limbs and sitting on him. When this story hit the media, it was a scandal, and the parents felt betrayed by the church because it would not "accept" their child. Although this story received the most media attention, it is not an isolated case, unfortunately. And what is most striking to me are the parents' feelings of rejection and even "hatred" when a congregation seeks to intervene on account of dangerous behaviors of individuals with autism. Low expectations are wrong when school districts engage in them, but they are especially tragic when parents themselves come to believe that others must accept their child's problem behaviors or lack of skills, whatever they are.

Accepting a person does not mean accepting the proposition that they cannot learn. In fact, I would argue just the opposite—truly accepting a person means embracing the proposition that however disabled they might seem, they can learn. And through ABA, they can learn well.

Reason 5
Children with autism deserve ABA because it can teach them the skills necessary to make friends

For children with autism who have good language skills, behavioral intervention can be used to teach and support learning the social skills necessary to successfully interact with their peers. There is an increasing amount of research into peer interactions and this good news for many of our kids. For my son, however, for whom language remains and always will be a challenge, it turn out that social interactions were facilitated by, of all things, ball skills.

I'll let you in on a secret—when we first started teaching ball skills at home, Ben did not like it, and neither did I. When he picked the ball up from his activity schedule, the therapist would have to come and find me because it was always took two of us to prompt him through the motions. One of us would have to stand behind him and physically prompt his arms up to catch the ball, which would otherwise hit him in the chest and drop to the floor. This went on for months, and I thought to myself often "why are we teaching this?"

Fast forward a few years ahead, and what we have now is a child who loves playing with balls and who is very good with them in a variety of ways. The teachers at Ben's ABA school, REED Academy, started encouraging him to shoot baskets as soon as he was big enough to hold and throw a basketball. He is now a more accurate shot than anyone else in our household. In fact, when we are shooting baskets in the backyard, he will often wait until I miss a shot (which takes very little time!), then retrieve the basketball, stand in the exact same place I just shot and missed from, and sink the basket, underscoring his superior skills—in case I had missed it.

Balls provide hours of entertainment, and as a bonus, they travel well. We've taken balls with us to grandma's, on beach vacations, and packed them in our luggage on a trip to Italy. Ben works to play basketball, soccer, mini-golf, or catch with his classmates regularly in school. But even more important, as this skill has generalized, it has become the pathway to social engagement with kids who do not have autism. When he goes to the playground, Ben always brings a ball, which happily often serves as an S^D (discriminative stimulus) to the other kids on the playground to approach him and ask to play catch. Most kids are quite satisfied with my explanation, "He doesn't talk much, but would like to play catch with you," and off they will go, my son and a new friend for the day, playing together quite typically.

Reason 4
Individuals with autism deserve ABA because it enables their parents and teachers to capitalize on their strengths and preferences

For many of our children with autism, a large part of effectively teaching them is first figuring out how to motivate them. Parents and teachers become keen observers of our children's interests and preferences because we recognize the importance of grabbing all the teaching opportunities presented. When you note something your child likes, you can capitalize on that preference and use it to motivate the child. For example, once we noticed how much Ben liked to pour liquids into glasses, we stopped filling glasses before dinner. Why? Because it was often a little challenge to get Ben to begin to eat his food, I used to reinforce his eating healthy foods with cookies or chips, which undermined the value of the healthy food. But now we simply sit down to a table of empty glasses, and when Ben requests that they be filled—for to him an empty glass is simply abhorrent—I remind him, "Eat your chicken and then you can pour the milk."

So, that is one example how ABA has taught me to attend to and leverage Ben's preferences, but I've also learned to look for and capitalize on his strengths. The very question of defining strengths is tricky because perspective matters here, and what may be defined as a deficit in one case, may turn out to be a strength in another.

[2] Editor's note: Please see Cortesi, Giannotti, Ivanenko, and Johnson (2010) and Kodak and Piazza (2008) for some evidence regarding behavioral interventions for sleep problems exhibited by children diagnosed with autism.

Readers Digest used to have a feature that demonstrated this point well, and made a little joke of demonstrating how essentially the same sort of behavior could be described very differently depending on one's relationship to the behavior. So for example, you might note that people tend to say:

I'm trusting. You're naive. He's gullible.
I'm sensitive. You're high-strung. She's neurotic.
I'm concerned. You're curious. He's nosy.

Now, this works with some of the behaviors we see in individuals with autism as well—and perspective matters in how you view behavior. For example,

I am focused. You're obsessive. He's perseverating.
Or
I like things to be predictable. You're stuck in your ways. He's inflexible and rigid.

I realize that the definition of autism is to be found precisely in these behavior extremes, and I am, again, making the point that the autism spectrum is a subset of the spectrum of human behavior, but I also want to suggest that there are opportunities to capitalize on these preferences. The place I've had the most success capitalizing on Ben's attention to routine and ability to discern and remember patterns, is in teaching him to attend religious services. For an individual who likes predictability, going to mass at a Catholic Church is a perfect fit. It is the same order of events, in the same place, at the same time, on the same day every week. You are even usually sitting by the same people, because plenty of folks who do not have autism like predictability, and sit in the same pew week after week. Years of carefully shaping Ben's behavior have resulted in a child who is the first one on his feet when it is time to stand for the gospel, the first one to kneel when the consecration prayer begins, and the first one to jump to his feet and stand when the music starts and the mass begins. So, yes, the *DSM-IV* may speak of "inflexible adherence to specific, nonfunctional routines or rituals," but not all routines or rituals need be "nonfunctional," and you can find opportunities to turn deficits into strengths when you put your ABA glasses on and think "How can I use this preference? How can I take advantage of this behavior?"

Reason 3
Children with autism deserve ABA because it can teach parents how to respond in the moment

Because our children with autism have so much to learn, it is critical that parents become fluent enough in the basics of behavioral intervention to be able to apply principles and techniques at home. We know that the more times a mistake is practiced the more ingrained it will become (think of a word that you routinely misspell). The more times you misspell the word, the more you get used to the misspelling and the less likely you are to be able to discern correct from incorrect spelling. Rehearsing mistakes makes it less likely you can even notice that the mistake is a mistake.

Well, it is the same with our kids, the more often they make a mistake the more likely they will be to repeat it. So parents need to know how to respond in the moment, both in terms of capturing motivation and also in terms of preventing mistakes.

In fact, we parents spend a lot of time with our kids, even parents of children with autism, and we need to learn enough behavioral techniques to make the best use of that time. There is a short passage from Catherine Maurice's seminal book, *Let Me Hear Your Voice*, which has inspired me for years. At one point, while discussing her daughter's progress, Catherine Maurice says to Bridget Taylor, "I have you ten hours a week," and Bridget points out to her in reply, "Yes, and you also have *you*, Catherine, carrying through this program a lot more than ten hours a week." Reading this for the first time, just weeks after my son was diagnosed, it was as though a little bell went off in my head when I realized that no matter how many "hours of ABA" we get for Ben, to best help him, I have to do this work as well. In the world of our children with autism, time equals power, and the people who spend the most time with your children have enormous influence over them; and generally speaking the people who spend the most hours with your child is YOU.

I am always trying to get better at this goal of responding in the moment, taking advantage of every teaching opportunity presented myself, but still have a long way to go. For example, for many years, I have been working on teaching Ben to say some prayers at night before he goes to sleep. At first, I simply said the standard prayers Catholic kids are taught, the Our Father and the Hail Mary, to him before bed. Then it occurred to me that he could say some of the words to the prayers himself, and so I would start a phrase, but stop when we got to a word I knew he could say. So it looked like this:

I would say, "Hail . . ." and Ben would continue, "Mary."
Than I would start the next line, "Full of . . ." and Ben would continue, "grace."

We did this for several months with success. As an aside, I have to point out here that one of the great things about teaching your child prayers or other religious rituals or observances is that you can take your time. I was very encouraged when I realized that even if I took a full 10 years to reach Ben to say the Hail Mary, he would still know it before he was 20, and still be able to recite the prayer his entire adult life. While I do need to

assure he makes progress, the progress can be very slow and still confer meaningful benefit for the majority of his lifetime.

Anyway, we continued happily our nightly recitation, but I added an S^D, and would always start by asking

"Ben, are you ready to say your prayers?"
Ben would reply, "Yes!"
So, I'd start, "Hail . . ." and Ben would say, "Mary."
Then I'd say, "Full of . . ." and Ben would say, "grace."

This was going well right up until the time he began a program at school called "Safety Questions." In this program he learned how to answer important questions he might be expected to answer if he were ever lost, such as, "What's your address?" or "What's your father's name?" He also learned how to answer the question "What's your mother's name?" by replying, "Mary Beth," which I figured out one night when we were saying our prayers.

I began as usual, "Ben, are you ready to say your prayers?"
And Ben said, "Yes!"
So, I said, "Hail . . ."
And Ben grinned sneakily at me and said, "Mary Beth."

Whoops, I thought, this will never do! I really cannot have my son going around saying, "Hail Mary Beth," so I thought about how to problem solve this and came back to the concept of preventing mistakes and the value of behavioral momentum. I figured my only hope was to interrupt him, right after he said "Mary" but before he could say "Beth." If I jumped right in and quickly started the next line, "Full of . . ." I figured that Ben would then say, "grace" and we could move on successfully.

This worked the first night, and he seemed a little annoyed that I had cut off his little joke, but once I kept saying the prayer, he stayed with me and moved on. Once I got him back on track, the behavioral momentum was working for me. And this worked the second night as well. I said "Hail . . ." and Ben said, "Mary—" and I jumped right in with "Full of . . ." before he could get the word Beth out. He speaks slowly enough that I could easily interrupt him, and once we just moved the prayer forward he would focus on the next word he was supposed to fill in. He was annoyed with me, but it was okay. I thought I had fixed this problem and was feeling proud of myself. Then on the third night, when I was sure this problem was behind us, I began as usual.

"Ben, ready to say your prayers?"
Ben said, "yes."
I said, "Hail . . ."
And he looked me right in the eye, and said, "Beth!"

Even though you know you are not supposed to do this (because you are likely reinforcing the behavior), there are simply some times when you have to laugh—and this was one of them. I believe at that point I just said to him, "Okay, buddy, you win, let's say the Our Father." Over time, I've come to rather relish the fact that a fairly significant and interesting aspect of my life is being out-smarted on a regular basis by a child with a diagnosis of significant developmental disability. And it also bears mentioning here that ABA will not destroy your child's sense of humor.

Reason 2
Children with autism deserve ABA because some day their parents are going to die

No parent likes to think about this but we parents of children with autism really need to. We must make sure our kids learn the skills they need to be as independent as possible as adults and as connected to their families and their communities in healthy ways as possible. We must teach now to assure that they are able to hold jobs, and to engage in volunteer work to give back to communities that support them and thus be connected through other networks than just the social service delivery network that they may have to rely upon. We want them to be people sustained by a caring web of relationships; that is what we need to work toward before we die.

We all want our children to be a valued part of the communities in which they live—so let me tell you a story about Ben to show you what I mean.

When Ben was quite small, about 3 years old, he was completely obsessed with automatic doors, especially the ones at our local grocery store, which was a stop on his almost nightly walks through town. Ben's absolutely favorite thing in the whole world was to be allowed to go in the IN door and run immediately through the OUT door, and to do this again and again. While we were always careful not to get in the way of other customers, my husband and I still feared being reprimanded by the management. After all, we were letting the air conditioning out in the summer and the heat out in the winter. We knew that if we interrupted this behavior, Ben would have a tantrum, but of course, others looking at him did not know this. We shrugged off the realization that people at the grocery store probably just assumed that we were bad parents, and waited for the day we would all finally get in trouble.

One day, a store employee did come over to us, but instead of scolding, he bent down to give Ben a handmade badge, carefully cut out of blue construction paper with the words,

"Door Inspector," written on it. That is precisely the sort of acceptance that all people with autism (and without) long for, yet so rarely receive.

While this true story has become for me an example of real community acceptance, I know it is not an accident that this occurred when Ben was 3. Had he been engaging in this behavior when he was 13, things would have turned our differently, and had he been doing this at 23, likely the police would have needed to make sure that Ben can walk through the rather laborious steps IN doors without immediately seeking the OUT door we have made sure for groceries, and say, "Thank you." We have used ABA to teach him to behave in such a way that the grocery store employees will be as welcoming of him as an adult as they were of him when he was just an adorable 3-year-old, "inspecting" their automatic doors.

Reason 1

Individuals with autism deserve ABA because it can prepare them to be their own best advocates

I used to think that self-advocacy was something that only individuals with autism who had fluent language skills would ever attain. I know it is not likely my son will sit in on a transition planning meeting at age 14 and clearly tell all gathered around the table which job skills he would like to learn. He might be able to point at pictures, or use a type to talk device to indicate preferences, but I suspect it will always be a challenge for Ben to communicate his hopes and dreams about his own future to others. Because of this, I used to think that self-advocacy was not a real goal of his, but I have come to see otherwise—through our years of learning how to attend church services.

I began taking Ben to mass only when he was five and a half and already had some of the prerequisite skills, such as the ability to sit, mostly still, without making too much noise for the 50–60 minutes it takes to get through the Catholic liturgy. Relying primarily on shaping, or reinforcing successive approximations of the target behavior, over the course of several years, we worked on his mass participation behaviors. We aimed first simply for getting through the mass without making too much noise. When he got good at that, I worked on teaching Ben to stand and sit at the appropriate times. Then much later, I taught him to kneel, and to shake hands for the Exchange of Peace, part of every Catholic mass. Some things he learned were easy to teach because he enjoyed them so much, like dipping his finger in the font of holy water, so that he could make the sign of the cross, or dropping the envelope in the collection basket—these were things he looked forward to, and served as natural reinforcers contributing to his enjoyment of attending church.

If you were to see him today on any given Sunday, you would see a child walk quickly to the front door of the church, but hold it for others who need to enter—and if you listen closely, you'll hear him say "you're welcome" when people thank him for holding open the door. He then goes directly to the nearest holy water font, dips his finger in, and blesses himself saying a somewhat abbreviated, "Father, Son, Holy Spirit, amen." This occurs at the door of the church, where many people are gathered, including the priest who will preside at mass, and all the liturgical ministers—altar servers, Eucharistic ministers, and lectors—and they all watch him each week and smile at his appropriate behavior. Recently Ben has adopted the practice of shaking each one's hand, and saying, "Hi" to all who are gathered for the opening procession.

Ben then leads us to a pew and makes the choice about where we sit, slightly varying the location each week. He kneels and blesses himself appropriately as he enters the pew, and the people already sitting down watch him, smile, and greet him. He is the first one on his feet when the music begins the service, and he knows exactly what to do, including when to stand, when to sit, and when to kneel through the entire mass. When it is time to exchange a greeting in the service, Ben makes sure to leave no hand untouched, and delights in reaching across pews and around us to greet everyone—and everyone seated even remotely near us, goes out of their way to shake his hand. He receives communion appropriately and independently each week, both the bread and the wine, and the ministers who distribute communion appear honored when he is in their line, and impressed at his clear, "Amen." At the end of the mass, when everyone else leaves, even though the choir is still singing, Ben remains in place—he attends to them until they are done—and then, often, he claps. The choir loves him.

People who sit behind us routinely tell me that they so enjoy watching Ben during the liturgy. Some have even said that they sit behind us on purpose, just so that they can watch Ben. People whose names I do not know greet Ben by name. And everyone who sees him at mass knows that he is absolutely capable of appropriate if not exemplary mass behavior. Although he is still quite young, and despite the fact that his language is somewhat rudimentary, when we are at church together, he can clearly see that Ben is his own best advocate. And every single person who knows that Ben has autism also knows what individuals with autism are capable of. Self-advocacy is not only for those with fluent language skills. Rather, competence begets self-advocacy, and behavioral intervention is the path to that competence.

Every child deserves this chance to show others all that he or she is capable of; every child deserves to learn all he can learn; every child with autism deserves effective, behavioral intervention, and it is up to us parents to make sure our children with autism get what they deserve.

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Recommended/Supplementary Readings for
"Let's Keep Our Eyes on the Prize"

William L. Heward, Ed.D., BCBA-D
The Ohio State University

"Advice for Parents of Newly Diagnosed Children" by Cyndy Hayes, In *Science in Autism Treatment*, Winter 2011, Vol. 8(1), page. 4. Available at
http://www.asatonline.org/newsletters/archives.htm

"Adventures in Driving" by Lora Perry. In *Science in Autism Treatment*, Spring 2011, pages 5-6. Available at http://www.asatonline.org/newsletters/archives.htm

"Is It All About Recovery?" by Lora Perry. In *Science in Autism Treatment*, Spring 2000, page 2. Available at http://www.asatonline.org/newsletters/archives.htm

"The Top Ten Reasons Children with Autism Deserve ABA" by Mary Beth Walsh. In *Behavior Analysis in Practice,* Vol. 4(1), pages 72-79.

"Letters to a Lawyer" by Donald M. Baer. In W. L. Heward et al. (Eds.), *Focus on Behavior Analysis in Education: Achievements, Challenges, and Opportunities*. (2005, Pearson).

Toward a Science of Education: The Battle Between Rogue and Real Science by James M. Kauffman. (2010, Full Court Press).

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"Ten Faulty Notions about Teaching and Learning that Hinder the Effectiveness of Special Education" by Bill Heward. In *The Journal of Special Education,* 2003, Vol. 36, No. 4, pages 186-205.

"Behavior-Analytic Instruction for Children with Autism: Philosophy Matters" by Jonathan W. Kimball. In *Focus on Autism and Other Developmental Disabilities* 2002, Vol. 17, No. 2, pages 66-75.

"Making Ripples: How Principals and Teachers Can Spread Hope Throughout Our Schools" by Shane J. Lopez. In *Phi Delta Kappan*, October 2010, Vol. 92, No. 2, pages 40-44. Available at http://www.kappanmagazine.org/content/92/2/40.full

"It's OK To Say I Don't Know" by Bill Heward. In *Science in Autism Treatment,* Fall 2012, pages 1-3. Available at http://www.asatonline.org/newsletters/archives.htm