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

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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 recruiting 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

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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 at which they praised students. Other researchers also found low rates 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, & Bishop, 1992).

Although teachers in general education classrooms are expected to make instructional adaptations and accommodations for students with disabilties, 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

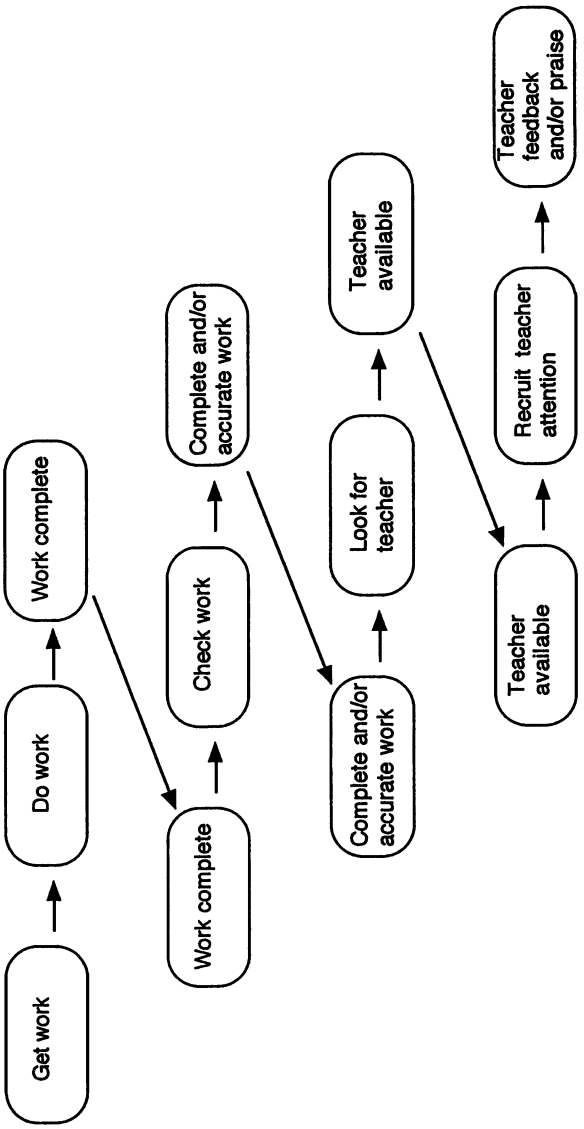

Fig. 1. Three-term contingency diagram illustrating recruiting sequence for students.

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 &*

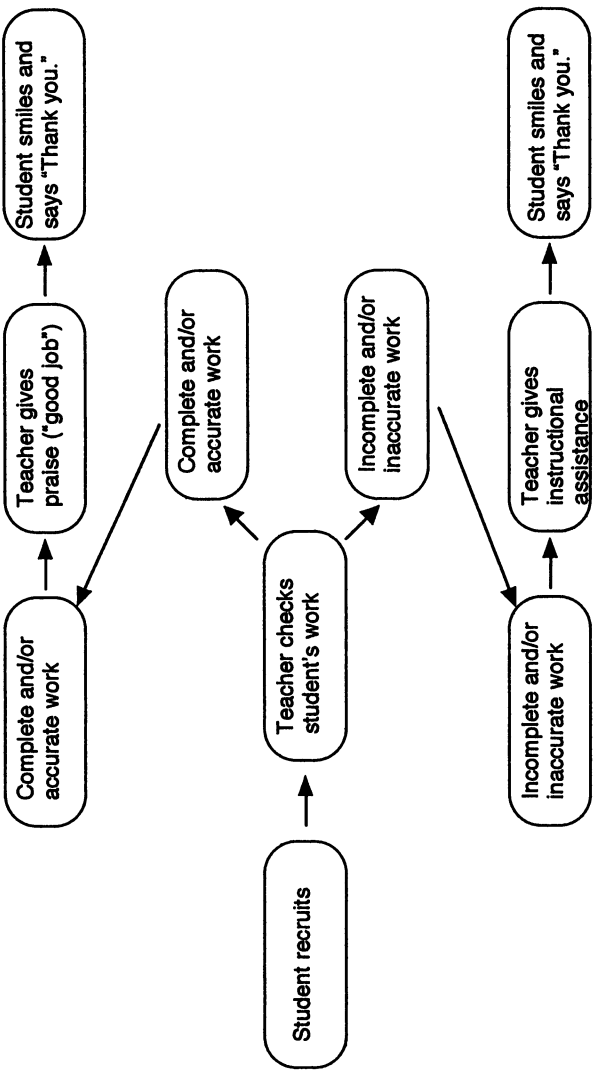

Fig. 2. Three-term contingency diagram illustrating recruiting sequence for teachers.

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 state ments 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 recruitment 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 from 64% to 100% 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 arrrangement 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 to 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 stay, "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* (*C*omplete your work, *L*ook it over for mistakes, *A*sk yourself if the teacher is available, *S*ignal the teacher and ask her to look at your work, and *S*ay "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 $1'' \times 3''$ 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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