Exploring the Relationship Between Increased Opportunities to Respond to Academic Requests and the Academic and Behavioral Outcomes of Students with EBD

A Review

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ABSTRACT

The purpose of this article is to review the literature and examine the effect of increased opportunities to respond to academic requests (OTR) on academic and behavioral outcomes of students with emotional and behavioral disorders (EBD). The studies reviewed suggest that increased rates of OTR result in higher task engagement and academic achievement and in lower rates of inappropriate classroom behaviors. However, descriptive research in classrooms for students with EBD suggests that teachers rarely provide adequate OTR. Implications of these findings and future research needs are discussed.

Academic difficulties of students with emotional and behavioral disorders (EBD) often lead to failure in school and later life (Meadows, Neel, Scott, & Parker, 1994; Ruhl & Berlinghoff, 1992). Data from the National Longitudinal Transition Study (NLTS; Wagner, 1995; Wagner, D'Amico, Marder, Newman, & Blackorby, 1992; Wagner et al., 1991) indicated the extent of academic deficiencies of students with EBD. These data showed that students with EBD had the lowest grade-point averages of students in all disability categories; approximately 50% of students with EBD had failed one or more courses in the most recent school year; more than 66% had failed the competency exam for their grade level; and only one third of the students with EBD completed school. In fact, students with EBD have the highest drop-out rate of any disability category (Wood & Cronin, 1999).

Outcomes for students with EBD are bleak into young adulthood as well. Few students with EBD who graduate from high school complete any form of postsecondary education (Malmgren, Edgar, & Neel, 1998), and rates of postschool unemployment for these students have been documented to range from 25% (Frank & Sitlington, 1997) to 52% (Wagner, 1995; Wagner et al., 1991; Wagner et al., 1992). Further, data from the NLTS indicated that by the time they had been out of school for two years, 37% of the sample of students with EBD had been arrested, compared to 19% of all students with disabilities. Contributing to the poor postschool outcomes for students with EBD are the academic and social deficits these students exhibit while in school (Walker, Colvin, & Ramsey, 1995).

Problem behaviors exhibited in school, which may include peer relationship problems, aggression, and oppositionality (Gresham, Lane, MacMillan, & Bocian, 1999; Kauffman, 2001; Walker et al., 1995), are a distinguishing characteristic

of students with EBD. Research has indicated a relationship between social skills deficits and a number of negative developmental outcomes, including low self-esteem, poor achievement, school dropout, delinquency, teacher and peer rejection, vocational adjustment problems, and interpersonal conflicts (Gresham et al., 1999; Ollendick, Weist, Borden, & Greene, 1992; Pope, Bierman, & Mumma, 1991; Walker et al., 1995). Further, students with EBD exhibit classroom behavior, such as disruptive and off-task behaviors, that affects not only their social and academic development, but also the behavior of others in the classroom, including the teacher (Gunter, Denny, Jack, Shores, & Nelson, 1993; Gunter et al., 1994).

The Relationship Between Academic Deficits and Classroom Problem Behavior

Researchers have suggested that there is a relationship between the academic difficulties and the inappropriate classroom behaviors of students with EBD (Gunter & Coutinho, 1997; Gunter & Denny, 1998; Gunter et al., 1993; Gunter et al., 1994; Wehby, Symons, Canale, & Go, 1998). This relationship may be established before the students enter school. It has been shown that a number of these students enter classroom situations without the ability to satisfactorily participate in the educational process. Patterson, Reid, and Dishion (1992) presented a model whereby a multitude of family stressors (e.g., poverty, substance abuse) affect parenting. Poor parenting skills often lead to coercive interaction patterns, as parents may misuse punishment, provide inconsistent discipline, and engage in few positive interactions with their children. As a result, inappropriate behavior of these children is developed and maintained by negative reinforcement at a very early age (Conduct Problems Prevention Research Group [CPPRG], 1992; Patterson, 1982). Thus, children from these families may enter classrooms with deficits in interpersonal behavior, a propensity to use coercive tactics to manage their environments, and negative attitudes about school (Quinn, Jannasch-Pennell, & Rutherford, 1995). A potential consequence of these early but well-established behavioral characteristics is the manner in which teachers modify their interactions with these children, even as early as first grade (Wehby, Dodge, Valente, & CPPRG, 1993).

This proposition is supported by research which has reported that teachers of students with EBD use effective teaching practices infrequently (Shores, Gunter, & Jack, 1993; Walker et al., 1998; Wehby et al., 1998). Further, teachers of students with EBD may rarely use validated practices, and evidence also exists which suggests that teachers provide even less instruction to students who exhibit problem behavior (Carr, Taylor, & Robinson, 1991; Wehby et al., 1998). Carr et al. found that teachers provided more instruction to students who exhibited appropriate classroom behavior than to students who exhibited disruptive behaviors. In addition, Wehby et al. found that a teacher provided less instruction to students who were identified as high aggressors in a self-contained classroom for students with EBD. Because of the influence that early problem behaviors exert on teachers, Gunter and colleagues (Gunter & Coutinho, 1997; Gunter et al., 1993; Gunter et al., 1994; Shores, Gunter, & Jack, 1993) have suggested that there is a strong inverse relationship between these two variables (i.e., high rates of problem behavior equal low rates of instruction).

Recently, researchers have suggested that the relationship between instruction and problem behavior can be used both to ameliorate the academic difficulties of students with EBD and to decrease levels of disruptive and aggressive behavior (Deno, 1998; Gunter & Coutinho, 1997; Gunter & Denny, 1998; Gunter et al., 1993; Gunter et al., 1994; Wehby et al., 1998). Specifically, if rates of effective instruction are increased, then rates of problem behavior may decrease. It has been suggested that one way of testing this relationship is to give students frequent opportunities to actively respond to academic requests (OTR; e.g., Deno, 1998; Gunter & Coutinho, 1997; Gunter & Denny, 1998). The Council for Exceptional Children (CEC; 1987) provided guidelines for teachers of students with high-incidence disabilities regarding optimal rates of OTR, and adequate OTR is cited as an effective teaching practice for special educators (CEC, 1987; Englert, Tarrant, & Mariage, 1992; Frudden & Healy, 1986; Mastropieri & Scruggs, 1987). During instruction of new material, teachers should elicit 4 to 6 responses per minute from students, and students should respond with 80% accuracy. During practice or drill work, students should respond at a rate of 8 to 12 responses per minute, with 90% accuracy (CEC, 1987). Eliciting frequent responses from students allows the teacher to adjust the lesson based on student feedback, increase the quality of the lesson, and increase the attentiveness of students (CEC, 1987).

Despite these suggestions, it is not clear whether increases in OTR would result in improved social behavior of students identified as having EBD. In light of these suggestions, the purpose of this article is to review the intervention research regarding the effects of increased OTR on the academic and social behaviors of students with EBD. Following the review, descriptive research is examined to determine the naturally occurring rates of OTR in classrooms for students with EBD. Finally, implications for both student outcomes and future research are discussed.

Method

The purpose of this section is to review the literature examining the effect of increased rates of OTR on the behavioral and academic outcomes of students with EBD. Criteria for inclusion in this review included the study (a) having as participants either students with EBD or students identified as exhibiting behavior characteristic of students with EBD, such

as off-task, disruptive, or aggressive behaviors; (b) examining the effect of an independent variable of increased rates of OTR on one or more dependent variables of a behavioral or academic nature; and (c) having been published in a refereed journal. Search procedures consisted of three steps. First, computer databases (ERIC, 1966 to present; PsycInfo, 1967 to present) were searched using the descriptors *EBD, emotional disturbance, behavior disorders, emotional impairment, behavior problems, academics, interventions, opportunities to respond, teacher questions,* and *active engagement.* Second, a hand search of prominent journals was conducted for the past 2 years. Finally, an ancestral search of identified articles was conducted.

This search yielded six studies (Carnine, 1976; Skinner, Belfiore, Mace, Williams-Wilson, & Johns, 1997; Skinner, Ford, & Yunker, 1991; Skinner & Shapiro, 1989; Skinner, Smith, & McLean, 1994; West & Sloane, 1986), each of which examined the effect of increased OTR using single-subject research methodology (Kazdin, 1982). All studies measured a dependent variable of an academic nature. One study measured dependent variables representing participation and task engagement (Carnine, 1976), and one study measured a dependent variable representing inappropriate and/or disruptive classroom behaviors (West & Sloane, 1986). Studies were reviewed according to the dependent variable measured. See Table 1 for a description of the studies.

Academic Behavior

Carnine (1976) examined the effect of increased OTR on the percentage of correct reading responses by two first-grade students identified by their teacher as having high rates of off-task behavior. These students also had academic deficits and were in the lowest-level reading group in the lowest achieving of three first-grade classrooms in the school. Opportunities to respond were elevated through increasing the presentation rate of academic requests. In other words, during the fast-presentation condition, the teacher presented a new task immediately following a student's correct response, and in the slow-presentation condition the teacher waited 5 seconds after a correct response before presenting the next task. Results indicated that across 38 sessions, the teacher was able to exhibit control over the presentation rate of the academic requests. Only one instance of data point overlap between phases was noted. Results indicated that the faster presentation rate resulted in increased percentages of correct responses (from 41% to 85%) across students. The data indicated little overlap between phases, with increases in level and trend between the slow and fast presentation rate phases. Further, the latency of change between phases was evident.

West and Sloane (1986) measured the effect of increased OTR and point delivery on the academic response accuracy and rate of five students with EBD. As in the Carnine (1976) study, increased OTR was manipulated through presentation rate. All combinations of fast (20-second) and slow (60-second) presentation rates and high (fixed time of 60 seconds) and low (fixed time of 240 seconds) rates of points delivery were examined. Students were observed each day for four separate 15-minute sessions (representing reading, math, spelling, and functional skills). Results indicated a slight difference between fast and slow presentation rates (79% to 86%, respectively) for accuracy; however, students had 2.4 correct responses per minute during the fast condition, compared to 0.9 per minute during the slow presentation rate condition. Thus, while having increased OTR resulted in slightly more errors, the rate of correct responding during this condition was measurably higher than during the slow-presentation rate. In fact, the 2.4 correct responses per minute approximates the 3.2 correct responses per minute recommended by the effective instruction literature (CEC, 1987).

Skinner et al. (1994) also increased OTR through an increase in presentation rate, in addition to requiring increased responses from participants during two intervention conditions. An adapted alternating treatment design was used to examine the effect of the two interventions, 1-second and 5-seconds presentation rates, on the number of reading words mastered (i.e., read correctly across three separate assessments) by three elementary students with EBD. During each of the interventions, students were given three OTR per target reading word, compared to one OTR per target reading word during the no-treatment condition. Results indicated that both interventions resulted in increased mastery of words across all three students; the presentation rates of 1 and 5 seconds did not differ. Results suggested, however, that the three responses required during the intervention conditions, compared to the one response required during the no-treatment condition, may have affected the students' mastery of the reading words. Further, although the students' mastery of reading words may not have varied as a function of presentation rate, across participants the 5-second presentation rate took an average of 103-seconds longer per session than the 1-second presentation rate and may have represented a slightly more efficient use of instructional time.

Skinner and Shapiro (1989) examined the effect of increased OTR using taped words and drill interventions (two OTR) and continuous and intermittent assessment (one OTR). An adapted alternating treatment design with multiple probes was used to measure the effect of the interventions on words read correctly and incorrectly per minute by five high school students with EBD. (Due to attrition, only four students participated in the entire study.) Results indicated no difference between the taped words and drill interventions. Results suggested, however, that having more OTR led to increased rates of words read correctly and decreased rates of words read incorrectly. Across students, the mean number of words read correctly per minute was 78 for the conditions offering two OTR, and the mean number read correctly for the conditions offering one OTR was 54. Meanwhile, the mean number of words read incorrectly per minute was 4 for the conditions offering two OTR, and the mean number of words

TABLE 1. Description of Studies Examining Effects of Increased Opportunities to Respond

Reference	Sample	Design	Independent variable(s)	Dependent variable(s)	Results
Carnine (1976)	Two 1st-grade students (boy and girl) identified by teacher as having high rates of off-task behavior	A-B-A-B-A-B	Presentation rate (Baseline—5 sec; Intervention—1 sec)	Percentage participation, off-task, and correct responses	Increased OTR resulted in increased percentages of correct responses and participation and decreased percentages of off-task behavior
West & Sloane (1986)	Five students with EBD (2 boys, 3 girls), ages 7–9	Multielement	Presentation rate (Fast—20 sec; Slow—60 sec); Point delivery rate fixed interval (High—[FI] 60 sec; Low—[FI] 240 sec)	Percentage of intervals with disruptive behaviors, academic accuracy, and correct response rate	No difference among dependent variables between high and low point delivery; increased OTR resulted in lower disruptive behaviors and increased correct response rate; accuracy slightly higher during slow presentation rate
Skinner, Smith, & McLean (1994)	Three students with EBD (2 boys, 1 girl), ages 9–11	Adapted alternating treatments	5-sec intertrial interval (ITI); 1-sec ITI, no treatment	Number of words mastered under each condition	Both 5-sec and 1-sec ITI (increased OTR) resulted in more mastered words than no-treatment condition
Skinner & Shapiro (1989)	Five students with EBD, ages 14–18	Adapted alternating treatments and multiple probe	Continuous and intermittent assessment (one OTR per stimulus); taped words and drill (two OTR per stimulus)	Words read correctly and incorrectly per minute	Having 2 OTR resulted in 78.4% correct and 3.9% incorrect; having 1 OTR resulted in 54.4% correct and 5.6% incorrect
Skinner, Ford, & Yunker (1991)	Two male students with EBD, ages 9 and 11	Adapted alternating treatments	Verbal cover, copy, and compare (VCCC; increased OTR); written cover, copy, and compare (WCCC) and no treatment	Digits correct per minute (DCM); percentage of multiplication problems correct	Increased OTR resulted in 74.3% correct and 28.2 DCM; WCCC and no treatment resulted in 67.6% correct and 20.3 DCM
Skinner, Belfiore, Mace, Williams-Wilson, & Johns (1997)	Two male students with EBD, ages 10 and 11	Multiphase alternating treatments and multiphase adapted alternating treatments	VCCC (increased OTR) and WCCC	Number of multiplication problems correct and DCM	Accuracy and fluency higher for both students during VCCC than WCCC

Note. FI = fixed interval.

read incorrectly increased to 6 during the conditions offering one OTR.

Skinner et al. (1991) examined the effects of increased OTR on two students with EBD by using a verbal cover, copy, and compare (VCCC) intervention (increased OTR); a written cover, copy, and compare (WCCC) intervention; and no treatment. The WCCC intervention involved the students being trained to look at the math problem, cover the problem and answer, write the problem and answer, uncover the problem and answer, and evaluate what was written. The VCCC intervention was similar to the WCCC intervention, except that rather than write the problem and answer, the students were trained to verbally state the problem and answer. Data indicated that the VCCC intervention resulted in approximately 2.5 times as many OTR as the WCCC intervention during the same allotted time. The percentage of multiplication problems per minute and digits correct per minute were measured using an adapted alternating treatment design. The data indicated no difference between the WCCC intervention and no-treatment. Further, separation was evident between the data points representing the VCCC condition and the WCCC and no treatment conditions. Across students, the mean percentage of problems correct was 74 for the VCCC intervention and 68 for the WCCC intervention and no treatment combined. The VCCC intervention also resulted in 28 digits correct per minute, and the WCCC intervention and no treatment combined resulted in 20 digits correct per minute.

Skinner et al. (1997) examined the effect of increased OTR using the VCCC and WCCC interventions and no treatment. This study examined the number of multiplication problems completed and digits correct per minute of two students with EBD, using a multiphase alternating-treatments design (Student 1) and a multiphase-adapted alternating-treatments design (Student 2). The multiple phases were baseline, trials held constant, baseline, time-held-constant, and replication. Results indicate that the VCCC intervention resulted in increased OTR across students. During the time-held-constant phase, mean learning trials completed by Student 1 were 86 for the VCCC intervention and 26 for the WCCC intervention. Student 2 completed a mean of 83 learning trials during the VCCC intervention compared to 33 during the WCCC intervention. Further, a visual inspection of the data indicated that the accuracy (i.e., number of problems correct) and fluency (i.e., digits correct per minute) of Student 1 increased during the VCCC intervention. The data for Student 2, however, indicated an increasing trend across all three conditions, with no separation between the VCCC intervention data points and the WCCC. Increases in the accuracy and fluency of Student 2 may be attributed to testing, multiple treatment interference, history, or maturation.

Classroom Behavior

Task Engagement. Carnine (1976) measured the effect of increased OTR on the participation and off-task behaviors of two students. Participation was recorded if the target student responded to the teacher's request within 1 second, and off-task behavior was defined and examples provided in the article. Each subject was observed for approximately 30 requests per session, and percentages of participation and off-task behavior were computed. A visual inspection of the data indicated that the faster presentation rate (increased OTR) resulted in lower rates of off-task behavior and higher rates of participation. Means across both students revealed percentages of off-task behavior of 62% during slower presentation and 7% during faster presentation. Accordingly, percentages of participation were 46% during slower presentation and 84% during faster presentation.

Disruptive and/or Inappropriate Classroom Behaviors. West and Sloane (1986) measured the effect of increased OTR and points delivery on disruptive behavior. Results indicated that increased OTR resulted in lower rates of disruptive behavior, and no difference was noted between the types of points delivery. A visual inspection of the data indicated no data point overlap between the conditions of fast and slow presentation rates. Further, the mean for the percentage of intervals with disruptive behavior during the fast presentation rate condition (increased OTR) was 55%, and the mean for the slow presentation rate condition was 79%.

Research Summary

Interpretation of a synthesis of this literature is made problematic by both the small number of studies available to review and the small sample of students with EBD (N = 19). Further, four of the six studies reviewed were conducted by Skinner and colleagues; although the research conducted was of high quality, replication by other investigators would strengthen the external validity of the reported findings. Nonetheless, the literature reviewed here suggests that increased rates of OTR resulted in increased academic outcomes, increased task engagement, and decreased inappropriate and disruptive behavior of students with EBD. Reading outcomes were positively affected, as measured by increased percentages of reading responses (Carnine, 1976), increased mastery of reading words (Skinner et al., 1994), and increased rates of words read correctly and decreased rates of words read incorrectly (Skinner & Shapiro, 1989). Math outcomes were positively affected, as measured by percentage of problems correct per minute (Skinner et al., 1991), digits correct per minute (Skinner et al., 1991; Skinner et al., 1997), and number of problems completed (Skinner et al., 1997). In addition, for a number of academic areas, West and Sloane (1986) found increased rates of correct responding; accuracy was somewhat lower during the increased OTR intervention. Positive effects were also noted for task engagement (Carnine, 1976) and decreased disruptive behavior (West & Sloane, 1986). Finally, through increasing rates of OTR the instructional

time in the classroom was used more efficiently (see Carnine, 1976; Skinner et al., 1991; Skinner et al., 1994; Skinner et al., 1997; West & Sloane, 1986).

Because poor attention to task and disruptive behavior are cited as distinguishing characteristics of students with EBD (Wehby, Symons, & Shores, 1995), increasing OTR may be more effective in increasing both task engagement and learning rates while decreasing disruptive behavior, because the students tend to stay most focused on academic tasks when pacing is rapid (Carnine, 1976; Darch & Gersten, 1985; Skinner et al., 1994). In addition, increased rates of correct responses provide teachers with more opportunities to praise students, creating learning interactions between teachers and students that are positive (Gunter et al., 1993). Hence, the students' need to escape and/or avoid academic instruction is eliminated. Given the evidence presented here about the positive effects of OTR on a variety of academic and behavioral measures of students with EBD, the question becomes: In current classroom situations, how often do teachers of students with EBD provide OTR to their students?

Two studies (Van Acker, Grant, & Henry, 1996; Wehby et al, 1995) provide some insight into rates of OTR in classrooms for students with problem behavior, including EBD. Van Acker et al. described interaction patterns between students identified as being at-risk for aggression and their teachers. The student participants in this study were part of a no-treatment control condition of a larger study, and students were identified as being at risk for aggression through two measures: Students must have scored above the grand mean (for the total, large study sample) on both the aggression scale of the Teacher Report form of the Child Behavior Checklist (TRF; Achenbach & Edelbrock, 1988) and a peer nomination measure. Students were further divided into a midrisk group ($n = 102$) and a high-risk group ($n = 104$), with students in the midrisk group falling between the 51st and 75th percentile, and students in the high-risk group falling between the 76th and 100th percentile on the TRF. Each student in this study was observed for at least 80 minutes. Data for students in each group were pooled, and mean rates of OTR were reported for both the mid- and high-risk groups. Students were given OTR in the midrisk group at a higher mean rate than students in the high-risk group, but these rates were low overall (0.025 and 0.020 per minute).

Wehby et al. (1995) used direct observation of teacher and student behaviors in 14 classrooms for students with EBD. Within each classroom two students were observed, with one student categorized as high aggressor and one student categorized as low aggressor, as determined by direct observation. Data were collected for 8 to 10 hours on each student participant, for a total of 16 to 20 hours of direct observational data for each of the 14 teachers. Rates of OTR per minute were a bit higher than those in the Van Acker et al. (1996) study, although they were still well below recommended levels. Students identified as being low aggressors received OTR at a rate of 0.156 per minute, and students identified as being high aggressors received OTR at a rate of 0.163 per minute.

It is important to keep in mind that these are the only two descriptive studies that deal with naturally occurring rates of OTR in classrooms for students with EBD. Therefore, caution is warranted in attempting to interpret their results; nevertheless, these results paint a bleak picture of classroom environments for students with EBD and students who are at risk for aggression regarding rates of OTR. Rates of OTR reported here ranged from 0.02 to 0.16 per minute, well below the rate of 4 to 6 per minute recommended by the effective instruction literature (CEC, 1987), and they do not indicate active engagement in academic instruction by the students.

Discussion

It has been documented that academic deficits are one of the primary characteristics of students with EBD, contributing to failure in school and later life (e.g., Meadows et al., 1994; Ruhl & Berlinghoff, 1992; Wagner, 1995; Wagner et al., 1991; Wagner et al., 1992; Wood & Cronin, 1999). The literature reviewed in this article suggests that increasing the rates of OTR resulted in desired academic and behavioral outcomes among students with EBD. However, the descriptive research suggests low rates of OTR in classrooms for students with EBD who are at risk for aggression. Thus, in light of the low rates of OTR present in these classrooms, what are the academic implications for students with EBD? Research conducted at the Juniper Gardens Children's Project by Greenwood and colleagues (Greenwood, Delquardi, & Hall, 1984; Greenwood, Hart, Walker, & Risley, 1992) may provide some insight into the relationship between classroom instructional variables and student academic outcomes.

The work of Greenwood and colleagues, with students from inner-city, low–socioeconomic status (SES) schools, suggests that poor instruction may contribute to the poor academic achievement of these students. They found that instruction in inner-city classrooms was not discriminative for reinforcement and that students had infrequent OTR; the cumulative effect of this instruction was lower rates of academic behavior and lower rates of academic growth and achievement than among students from higher-SES schools (Greenwood et al., 1992). Findings indicated that lower exposure to academic behaviors and lower engagement in academic behaviors played a major role in explaining the gap in achievement between low- and high-SES students. Further, the researchers found that by the end of elementary school, there was a cumulative difference of 364 hours of exposure to academic instruction between the low- and high-SES students. The authors noted, "At these rates, and assuming no change in their educational program, low-SES students would need to attend school an extra 1.6 years to attain the same educational experience!" (p. 17).

OTR has been demonstrated to increase task engagement and achievement of students with EBD. The descriptive research suggests that teachers of these students fail to utilize these instructional behaviors, and results from the Juniper Gardens Children's Project suggest that the resulting poor instruction may contribute to even more dismal academic outcomes for students with EBD. Increasing the rates of OTR should be a goal of teachers, administrators, teacher trainers, and researchers.

Suggestions for Future Research

Attempting to synthesize research on the effects of increased OTR on academic and behavioral outcomes of students with EBD is difficult because of the small number of studies available to review. The lack of research on practices to increase academic skills of students with EBD has been discussed elsewhere (Dunlap & Childs, 1996; Gunter & Denny, 1998; Ruhl & Berlinghoff, 1992). Although all studies reviewed here measured a dependent variable of an academic nature, more research is clearly needed to more thoroughly examine the relationship between increased OTR and outcomes for students with EBD.

Rates of OTR in classrooms for students with EBD are alarmingly low. Research is warranted on methods that may promote and maintain increased rates of OTR in these classrooms. Several methods for increasing OTR in classrooms have been demonstrated to be effective. The work of Greenwood and colleagues at the Juniper Gardens Children's Project (Greenwood et al., 1984; Greenwood et al, 1992) has demonstrated the effectiveness of ClassWide Peer Tutoring and warrants investigation in classrooms for students with EBD. However, given the social skills deficits of students with EBD, replications of methods requiring increased peer interactions, such as peer tutoring or cooperative learning, must include assessment and instruction in social skills and cooperative behaviors (Sutherland, Wehby, & Gunter, 2000).

Other methods hold promise for increasing OTR in classrooms for students with EBD. Armendariz and Umbreit (1999) demonstrated a reduction of disruptive behavior in a general education classroom by using response cards, which resulted in increased OTR. Future research could examine the efficacy of using response cards with students with EBD, particularly examining its effect on classroom behavior and academic achievement.

Teachers can learn to monitor their use of OTR as well, either through feedback from peers or through self-evaluation. For example, peer coaching has been demonstrated to (a) promote positive change in classroom management strategies (Hasbrouck & Christen, 1997); (b) be effective for increasing desired teacher behaviors while decreasing undesired teacher behaviors (Pierce & Miller, 1994); and (c) enhance the accuracy with which teachers implement curriculum-based measurement (Fuchs & Fuchs, 1993). In addition, the use of videotaped instruction has been advocated to allow teachers of students with EBD to self-evaluate their instructional behavior (Gunter et al., 1993; Gunter, Hummel, & Venn, 1998; Gunter & Reed, 1996). The use of videotaped instruction allows the teacher to observe not only his or her own behavior, but also the behavior of the students. If a teacher were concerned only with a specific verbal behavior, such as the use of OTR, then audiotaping might be a simple alternative to videotaping.

Preliminary results from an investigation examining the effect of self-evaluation on praise rates of teachers of students with EBD suggest that this may be an effective intervention for increasing desired teacher behaviors (Sutherland & Wehby, 2000). Further, results from this investigation suggest that there may be a summative-level relationship between teacher praise and OTR, which has been asserted in the literature (see Gunter et al., 1993). The existence of a summative-level relationship between teacher praise and OTR would provide a rationale for further investigations using sequential analysis, providing even more information through the analysis of event-type data within continuous streams of interactions (Bakeman & Gottman, 1997). Investigations that examine the relationship between effective teaching behaviors, such as praise and OTR, hold promise for researchers designing interventions to affect teacher behavior.

Some research suggests that teachers should provide less instruction (i.e., OTR) to students that present troubling classroom behaviors (Carr et al., 1991; Wehby et al., 1998). Thus, descriptive studies that provide information on the distribution of OTR in classrooms for students with EBD would be helpful for determining whether some students are receiving more OTR than others and how this distribution relates to characteristics (e.g., gender, problem behavior) of the students in the classroom. Further, results of descriptive studies could help provide some insight into long-term outcomes of students with EBD, replicating in a fashion the work of Greenwood and colleagues at the Juniper Gardens Children's Project.

Conclusion

In summary, students with EBD often exhibit poor social and academic skills that lead to bleak adult outcomes. Multiple factors—such as peer social acceptance, peer associations, friendship quality, parental discipline, and neighborhood factors, to name but a few—influence the behavioral adjustment of these youth from childhood to adolescence to early adulthood (Farmer, Farmer, & Gut, 1999). An additional factor that affects the social and academic development of students with EBD is their experience in school. Although research suggests that having adequate OTR positively affects both academic and behavioral outcomes of students with EBD, evidently students do not receive OTR at a desired rate. Teachers, researchers, and teacher trainers must seek to positively affect the educational experience of all students, including students with EBD. Increasing the rate of OTR is a means to help accomplish this goal. ■

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