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First Step to Success: An Early Intervention for Elementary Children At Risk for Antisocial Behavior

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ABSTRACT: The increased prevalence and seriousness of antisocial behavior displayed by today's youths have become serious concerns for parents, educators, and community members. Antisocial behavior has a developmental course that starts with minor offenses in preschool (e.g., whining, teasing, noncompliance) and develops into major offenses (e.g., vandalism, stealing, assault, homicide) in older children and adolescents. Research results suggest that if interventions are implemented in the early elementary years, the likelihood of preventing future antisocial behavior is improved. Furthermore, interventions are said to be more successful if family members and teachers are involved. The purpose of this study was to examine the effects of an early intervention strategy, First Step to Success, involving (a) teacher-directed and (b) a combination of teacher- and parent-directed strategies on the behaviors of elementary school children at risk for antisocial behavior. The results suggest that interventions involving teachers and parents were associated with decreases in problem behavior in the classroom that maintained over 1 academic school year after intervention. Implications and recommendations are presented based on the outcomes and limitations of this study.

■ Kazdin (1985) stated, "Antisocial behavior refers to a variety of acts that violate social norms and the rights of others" (p. 1). Walker, Colvin, and Ramsey (1995) defined antisocial behavior as "recurrent violations of socially prescribed patterns of behavior" (p. 43) across a range of settings (e.g., home, school, community). Antisocial behavior patterns in young children include, for example, whining, non-compliance with parents and teachers (e.g., disobedience, talk-outs, touching others, being out of seat), and fighting. In mid-elementary and early middle school children, these patterns escalate to involve, for example, lying, minor theft, and cheating. If left unchecked, these behaviors in high schools, become even more antisocial and problematic, for example, stealing, assault, homicide, vandalism, and other acts of delinquency. The development of escalating antisocial behavior patterns is difficult to reverse. Furthermore, children whose antisocial behavior occurs at high rates across multiple settings and in mul-

tle forms are vulnerable to rejection by teachers and peers, alternative placement (e.g., special education), school failure, delinquency, and dropping out of school. Therefore, intervention early in the establishment of the child's antisocial behavior pattern is imperative (Kauffman, 1999).

In the past 2 decades, the improvement of educational and behavioral outcomes of children with antisocial behavior who are at risk for emotional or behavioral disorders has been a priority of general and special educators (Kauffman, 1989; U.S. Department of Education, 1991). Storey, Lawry, Ashworth, Danko, and Strain (1994) reported that nearly half of preschool and early elementary school teachers requested behavior management assistance for several children with antisocial behavior in their classrooms. According to Feil, Walker, and Severson (1995), "Early identification and remediation . . . is a high priority for most educators and is based on the assumption that academic and behavioral

problems can be averted through early detection, prevention, and intervention" (p.194).

Given the critical need to deter the development and occurrence of antisocial behavior and associated serious negative outcomes, efficient and effective early interventions are needed desperately for use within schools (Mayer, 1995). These school-based interventions must (a) be positive and preventative (Sprague, Sugai, & Walker, 1998; Walker et al., 1996), (b) involve the family along with the teacher (Ramsey & Patterson, 1989), and (c) program for the maintenance of desired behaviors (Wolery, Bailey, & Sugai, 1988).

The purpose of the study described here was to examine the relative effectiveness of an early intervention, First Step to Success (Walker et al., 1996), implemented by teachers and parents to improve the classroom behavior of kindergarten students with behavioral problems (Golly, Stiller, & Walker, 1998; Golly, Sprague, Walker, Beard, & Gorham, 2000). Because the literature suggests that families with teachers, rather than teachers alone, would have a stronger effect on antisocial behavior through early intervention (Dunson, Hughes, & Jackson, 1994; Golly et al., 1998, 2000; Ramsey & Patterson, 1989; Walker, Severson, Feil, Stiller, & Golly, 1998; Walker, Colvin, & Ramsey, 1995), we addressed three questions in this study:

1. Is a teacher-directed-only early intervention strategy (i.e., partial First Step to Success program) associated with decreases in the antisocial behavior of students in a classroom setting?
2. Is a teacher- and parent-directed early intervention strategy (i.e., entire First Step to Success program) associated with decreases in the antisocial behavior of participants in a classroom?
3. For both intervention conditions, are treatment effects maintained when intervention is discontinued?

Method

Schools and Settings

Two elementary schools in an urban school district in the Pacific Northwest served as research sites. The school district served children from low to middle socioeconomic status (SES) families. The study was conducted in five

general education kindergarten classrooms across the two schools.

Student Selection

Five teachers, using the Early Screening Program (Feil et al., 1995; Walker, Severson, & Feil, 1995), each identified 3 students in their classrooms whose behaviors would not be considered typical child behavior and occurred at a higher rate than their peers. Each teacher selected 1 of the 3 students whose behavior was believed to be most in need of an early intervention. Because the intervention could only be run with 1 student at a time, 1 student was selected to narrow the field of potential participants. Although a random selection process would have been more desirable experimentally, teachers were given the opportunity to select which students would participate in this study because (a) teachers were most disturbed by the behavior of these students and (b) in single-subject research designs each subject serves as his or her own control. As a result, 6 kindergarten students were identified as displaying early indicators of antisocial behavior and being at risk for developing chronic antisocial behavior patterns, and these students were asked to participate. However, all students originally identified were given the opportunity to participate at a later date. One teacher chose a student from the morning sessions and one from the afternoon session. These students had no previous experience with the intervention, and direct observations confirmed the problem behaviors reported by teachers and/or parents. Table 1 provides a summary of the problem behaviors and baseline rates displayed by each student.

Clifford, a Caucasian 5-year, 3-month-old identical twin, was selected from a morning kindergarten session. He lived in a low-SES neighborhood. Although his parents reported that he had normal intelligence, his teacher reported that he was academically behind his peers because of behavior problems in the classroom (e.g., wandering, noncompliance, talking out).

Bradford, a Caucasian 5-year, 6-month-old student from a low-SES neighborhood, was selected from a morning kindergarten session. His teacher and parents reported that he had normal intelligence. His teacher reported that he often was out of his seat and touched others and/or their property. His parents reported

TABLE 1
Types and Baseline Rates of Problem Behavior by Student

<i>Student</i>	<i>Types of Problem Behaviors</i>	<i>Baseline Rates</i>
Bradford	Talking out, touching others, noncompliance	.89–1.22
Clifford	Talking out, out of seat, noncompliance	.03–.93
Tommy	Touching others and property, out of seat, noncompliance	.03–.70
Amy	Talking out, out of seat, touching others' property, noncompliance	.08–.39
Katie	Talking out, out of seat, noncompliance	0–.33
Bilbert	Talking out, out of seat, touching others, noncompliance	0–.28

that he had been hyperactive since infancy and had difficulty attending to any task. To increase attention and decrease impulsivity soon after beginning the school year, he was put on Ritalin. His teacher reported that the use of Ritalin was associated with reduced problem behaviors and improved attention (e.g., less talking with others and touching other children or their property). His parents reported that he attended better at home and got into fewer fights with his older sibling when he was on the medication. Nonetheless, the teacher selected him because the problem behaviors had not reduced to low levels and he was the only student the teacher deemed as needing intervention.

Tommy, a Caucasian 6-year, 3-month-old student from a low-SES neighborhood, was selected from a morning kindergarten session. His teacher reported that he had been demoted to her kindergarten classroom from the first grade in early October because he was unable to complete his work and exhibited intolerable problem behaviors (e.g., talking out, crawling under furniture, running out of the room, touching others inappropriately). Due to his inappropriate behavior, he reportedly had no friends in his first-grade classroom. The teacher selected this boy because she noticed these same problems in her classroom. No information was gathered from the mother because she declined to meet with the researcher. The teacher reported that Tommy's mother was a casual drug user and frequently missed meetings to discuss his problems in school.

Amy, a Caucasian 5-year, 7-month-old student from a middle-SES neighborhood, was selected from an afternoon kindergarten session. Amy lived with foster parents and three other children. She was placed in foster care at the age of 2 when a court decided that her nat-

ural mother was unfit to care for her. In an interview, her foster mother reported that Amy was suspected of having fetal alcohol syndrome. Her teacher reported that Amy exhibited behavior problems that disrupted the classroom and required excessive amounts of teacher time.

Katie was a Caucasian 5-year, 5-month-old student from a middle-SES neighborhood attending an afternoon kindergarten session. Her teacher and parents reported that she seemed to have normal intelligence. However, her teacher stated that Katie often needed assignments explained more than once. Katie's teacher recommended her for participation in the study because she was displaying problem behaviors similar to those of her older brother (e.g., aggression, noncompliance). Her teacher did not want Katie to develop the same problems that her brother was having in the second grade (e.g., hitting, defiance).

Bilbert, a Caucasian 5-year, 9-month-old student from a low-SES neighborhood, was selected from an afternoon kindergarten session. His teacher reported that he had normal intelligence but seemed "obsessive compulsive." His teacher and mother reported that he displayed problem behaviors at home and in the classroom (e.g., lying, stealing, manipulating).

Dependent Measures

A trained observer recorded problem behaviors in the classroom, including talking out, being out of seat, touching others, touching others' property, and noncompliance. Academic engaged time (AET) also was recorded. Definitions for these dependent measures are presented in Table 2. Frequency data were collected for the problem behaviors, and duration

TABLE 2
Dependent Measures

<i>Behavior</i>	<i>Definition</i>
Talking out	The student spoke without raising a hand and being acknowledged by the teacher or interrupted the teacher or another student who was talking (e.g., answered without permission, called out requests, yelled).
Out of seat	The student moved from his or her chair without teacher permission. The student was considered out of seat if his or her buttocks left the chair seat (e.g., stood up from the chair, went to other places in the classroom).
Touching others	The student touched others' bodies with hands, feet, or objects. Also included pushing, grabbing, or exhibiting any other physical contact.
Touching others' property	The student touched others' property with hands, feet, or object. Also included grabbing or exhibiting any other physical contact with another's property.
Noncompliance	The student failed to initiate what he or she was told to do by the teacher within 5 seconds.
Academic engaged time (AET)	The student was attending to the task at hand; in other words, was on task (e.g., looking at the teacher, participating in an activity, following a direction). Students were considered off task when they were not attending to the task at hand (e.g., talking with peers while teacher is talking, daydreaming, wandering).

data was collected for AET. Frequency data were converted into rate (number of behaviors per minute) to control for time and show relative change. Duration data were converted into percentage of time spent academically engaged during the observation period.

Observation Procedures

The observer, who was unaware of the primary purpose of the study, was a parent in her late 30s whose child attended one of the schools used for this study. She completed a 1-day training session on First Step to Success that was conducted by a First Step director, and she practiced observing and collecting data for 2 weeks prior to implementation. In addition to her First Step training, she received 4 hours of training on observation procedures and operational definitions of appropriate and inappropriate behaviors and AET. Practice sessions using role-play and videotape situations were conducted to increase her fluency. The observer was required to meet a criterion of at least 85% agreement for 3 consecutive practice sessions before beginning the collection of actual data. The observer met criterion within 1 hour of completing the practice sessions.

During all phases of this study, direct observations were conducted at the same time

each day during sessions divided into eight 3-minute intervals. Two different observation procedures were used within each 24-minute session. In the first observation condition (i.e., event recording), the frequency of dependent measures (i.e., problem behaviors) occurrences was tallied. The observer sat in the classroom and marked occurrences with a pencil on a data sheet.

In the second observation condition (i.e., duration recording), AET was collected. In this condition, the observer used a stopwatch to determine the duration of on-task behavior. The two observation conditions were counterbalanced across the eight 3-minute intervals to allow for a more precise and accurate sampling of the dependent variables. Because many behavioral occurrences did not occur consistently throughout the 24-minute observation session, this counterbalancing procedure allowed the data collector to observe and record as many occurrences as possible. For example, the observer would enter the classroom, start her stopwatch, and for 3 minutes tally occurrences of (a) talking out, (b) being out of seat, (c) touching others or property, and (d) noncompliance. For the next 3 minutes, she would record AET, followed by 3 minutes of event recording, and so on. The observer would continue to counterbalance tally and

TABLE 3
Description of CLASS Components

<i>Component</i>	<i>Description</i>
Red /green card	A paper card that is green on one side and red on the other worn around the teacher's neck. Points are given at specific times on the green side for appropriate behaviors.
Preintervention phase	Prior to implementation, each student was asked whether he or she wanted to participate in the study. If the student agreed to participate, he or she received 30 minutes of role-play practice during which the student learned about positive and negative examples of classroom behavior.
Consultant phase	Days 1–5 of the program are implemented by a consultant. The program lasts 20 minutes each day.
Teacher phase	Days 6–30 of the program are implemented by the teacher. The program lasts 30–150 minutes each day.
Giving points	The teacher randomly gives a point on the green side of the card when the student displays appropriate behavior. Each day has a certain number of points the student must accumulate to earn a reward.
Giving praise	The teacher gives positive statements to the student randomly for appropriate behavior.
Meeting criterion	The student must earn 80% of the available point opportunities to meet criterion to earn a reward.
Rewards	When the student meets criterion, the student chooses a reward that the entire class can enjoy.

duration recording procedures until the end of the 24-minute observation period.

score for AET across all students was 97.5% (range, 95.5%–99.5%).

Interobserver Agreement

Interobserver agreement was checked at least once per phase and a minimum of once every 5 days per student. The researcher served as a second observer. Interobserver agreement for the frequency of problem behaviors was calculated by dividing the total number of tallied occurrences from one observer by the total number of tallied occurrences from the other observer, always dividing by the larger of the two numbers, and multiplying by 100. To calculate agreement for AET, the total duration from one observer was divided by the total duration from the other observer, always dividing by the larger of the two numbers and multiplying by 100.

Interobserver agreement was calculated for 30% of observations sessions. On average, interobserver agreement scores were never less than 90%. The average interobserver agreement score for problem behavior across all students was 94.5% (range, 90.25%–98.55%). The average interobserver agreement

Independent Variable

First Step to Success is a packaged early intervention program for students in kindergarten through third grade. A collaborative home and school approach is used in First Step to divert young at-risk children from a path leading to school failure, violence, and poor adult outcomes. The program consists of two treatment components, CLASS and HOMEBASE, which are implemented simultaneously in the classroom and home, respectively. Teachers and parents teach children a behavior pattern that contributes to school and social success through the systematic use of positive reinforcers. Summaries of the features of CLASS and HOMEBASE are included in Tables 3 and 4, respectively.

Experimental Design

A series of basic ABA and ABAB case studies across students and classrooms were conducted to examine the effects of (a) teacher- and

TABLE 4
Description of HOMEBASE Components

<i>Component</i>	<i>Description</i>
General description	The parents give praise and reward the student when criterion is met in the classroom and the card is brought home to show parents. Parents sign card and write reward received at home. The card is returned to school the next day.
Giving praise	The parents give positive statements to the student when criterion was met in the classroom
Playing the games	Packaged games are provided to the family each week for 6 weeks. The daily 5-minute games are used to increase positive interactions between student and parent and increase appropriate social behavior.
Rewards	When the student meets criterion in CLASS, the parents provide a reward that they participate in with the student at home.

parent-directed and (b) teacher-directed early interventions on antisocial behavior of children at risk for emotional or behavioral disorders. Although it would have been preferred, the development and implementation of a multiple-baseline design across students was not possible because of logistical constraints (i.e., teacher preferences and requests; scheduling; types of activities; different teachers, classrooms, and schools). In general, all students independently experienced baseline, intervention, and maintenance conditions. Based on teacher request and increases in problem behavior, intervention phases were reinstated for 2 students.

Students were divided equally into two conditions based on which kindergarten session (i.e., morning or afternoon) they attended. Therefore, the 3 students in the morning sessions were assigned to the CLASS (i.e., teacher-directed intervention) condition, and the 3 students in the afternoon sessions were assigned to the CLASS+HOMEBASE (i.e., teacher- and parent-directed intervention) condition. The determination of which condition would be used with which group of students (i.e., morning or afternoon kindergarten session) was determined by a flip of a coin.

Baseline

During baseline, teachers were told to maintain routine instruction and behavior management procedures (i.e., keep to their daily routine and schedule without making any changes). Baseline data on AET and problem behaviors were collected for at least 4 days or until stable trends in behavior were noted.

Teachers and parents were trained separately in the use of the intervention by the first author and a First Step to Success director. Teachers received CLASS training (i.e., explanations, role plays, and practice) that lasted approximately 3 hours. HOMEBASE training lasted for approximately 45 minutes with the parents of the students in the HOMEBASE condition. The training consisted of explaining the purpose of the intervention, their responsibilities in the intervention, and the time needed to complete the intervention. The training took place at the school, and the student was not present.

Teacher and parent acquisition and fluency with CLASS and HOMEBASE were not formally assessed. This limitation is addressed in the discussion section of this article.

Intervention

After baseline, CLASS or CLASS+HOMEBASE interventions were initiated. On the day prior to the first day of CLASS treatment, each student was asked whether he or she wanted to participate in the study. If the answer was yes, the student received 30 minutes of role-play practice during which he or she learned about positive and negative examples of classroom behavior. During the CLASS component of the First Step to Success program, the teacher wore a card with one red side and one green side on a key lanyard. When the student was behaving appropriately, the green side of the card was showing and the student intermittently earned points. When the student was not displaying appropriate behavior, the red side of the card was shown and no points could be earned. If at the end of the class the

student had earned 90% of the possible points, he or she received a reward that all students in the classroom could enjoy (e.g., teacher reads a special story, extra recess time, group game).

Students in the HOMEBASE+CLASS condition took their red/green card home to be signed by their parents. If a student met the CLASS reward criteria, parents provided another reward (e.g., playing a game together, taking a walk together, doing an activity together) at home. If a student did not meet the CLASS criteria, parents simply thanked the student for bringing the card home and encouraged him or her to work on meeting the criteria the next day. To verify whether parents did their part (i.e., giving reward at home if earned, playing prescribed daily games that addressed specific skill areas), the teacher made a call to the home each night.

Maintenance/Reversal

During the maintenance phase, intervention was discontinued, and at least once a week observations were conducted to assess for response maintenance. When stable trends were noted, maintenance checks were conducted twice a month for 5 months. Students received no First Step to Success instruction or reminders during that time.

Return to Intervention

At the request of their teachers, interventions were reinstated for 2 students because of undesired outcomes during the maintenance phase (see Figures 3 and 6).

Data Analysis

Visual data analysis procedures were used (Tawney & Gast, 1984; White & Haring, 1980; Wolery et al., 1988) to assess for variations in trend, level, and stability within and across all phases. In addition, simple descriptive analyses (e.g., within-phase median and range) were conducted.

Results

Across all students and compared to baseline rates, decreases in rates of problem behavior and increases in percentage of AET were observed when treatment conditions were initiated. Treatment effects were maintained for 4 of the 6 students. When treatment conditions were reinstated for the 2 students whose per-

formance did not maintain, reinstatements of previous treatment levels were observed.

CLASS Condition

Clifford

During the baseline phase, an upward trend (median = .71, range = .89–1.22) was observed in Clifford's rate of problem behavior. A slight upward trend was noted in the percentage of AET (median = 48, range = 45–49). Little variability was noted in either trend.

During the CLASS-only treatment phase, Clifford's rate of total problem behaviors decreased and little variability was noted (median = 0, range = 0–.14). Higher variability was observed when individual problem behavior data were examined. When treatment was initiated, the percentage of AET increased quickly; it leveled off after Session 11 (median = 98, range = 74–100). As a note, on Session 10 the percentage of AET dropped 80% when Clifford was sick.

During the maintenance phase, Clifford's rate of problem behavior was stable and low (median = .04, range = 0–.13). His percentage of AET remained at a high level with little variability.

Bradford

During the baseline phase, a slight downward trend (median = .69, range = .03–.39) was observed in Bradford's rate of problem behavior. A slight upward trend was noted in his percentage of AET (median = 79, range = 79–84). Little variability was noted in either trend.

During the CLASS-only treatment phase, Bradford's rate of total problem behaviors decreased, and moderate variability was noted (median = 0, range = 0–.17). Low variability was observed when individual problem behavior data were examined. When treatment was initiated, his percentage of AET increased quickly; it leveled off after Session 14 (median = 100, range = 84–100).

During the maintenance phase, Bradford's rate of problem behavior was stable and low (median = 0, range = 0–.04). His percentage of AET remained at a high level with little variability (median = 100, range = 96–100).

Tommy

During the baseline phase, a slight downward trend (median = 1.58, range = .03–.70) was observed in Tommy's rate of problem behavior.

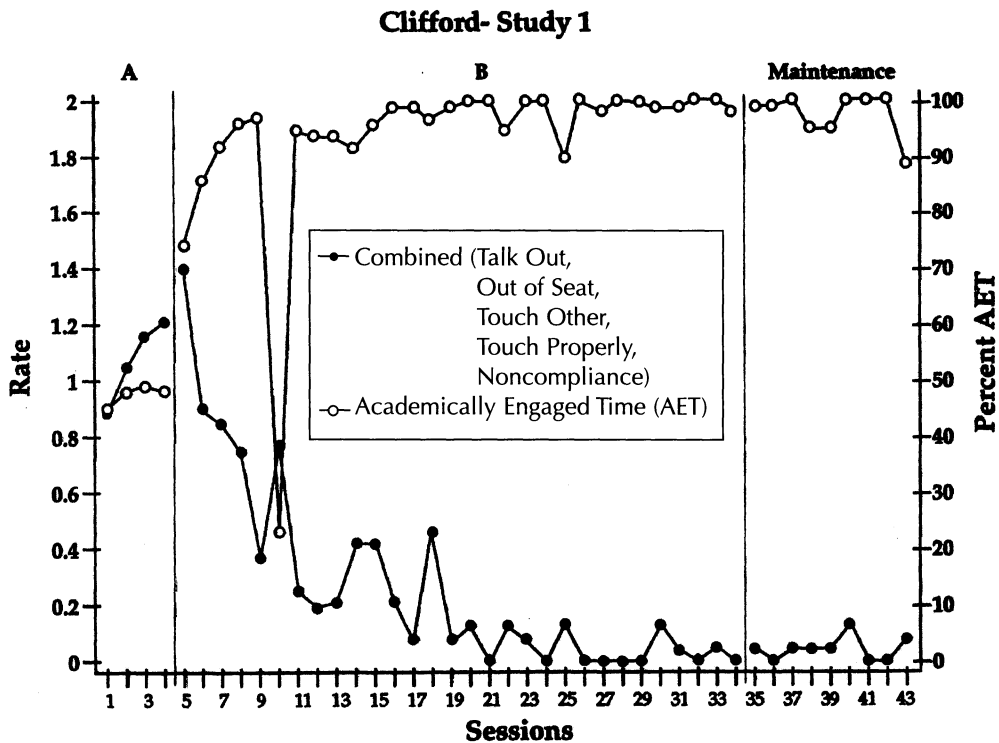


FIGURE 1. Clifford's Combined Behaviors (CLASS)

A slight upward trend was noted in his percentage of AET (median = 73, range = 70–76). Little variability was noted in either trend.

During the CLASS-only treatment phase, his rate of total problem behaviors decreased and moderate variability was noted (median = .06, range = 0–.3). Higher variability was observed when individual problem behaviors were examined. When treatment was initiated, his percentage of AET increased, with high variability (median = 97, range = 81–100).

During the maintenance phase, Tommy's rate of problem behavior increased; his percentage of AET decreased; and moderate variability was noted (median = .29, range = 0–.38). As a result, a second CLASS-only treatment phase was implemented in which Tommy's rate of total problem behavior decreased to levels similar to those of the first treatment phase (median = .08, range = 0–.08), as did his percentage of AET (median = 95, range = 92–100).

The results of the CLASS condition for Clifford, Bradford, and Tommy are given in Figures 1 through 3.

CLASS+HOMEBASE Condition

Amy

During the baseline phase, a slight upward trend (median = 1.24, range = .08–.39) was observed in Amy's rate of problem behavior. An upward trend also was noted in her percentage of AET (median = 77, range = 33–78). Little to moderate variability was noted in both trends.

During the CLASS + HOMEBASE-only treatment phase, Amy's rate of total problem behaviors decreased and high variability was noted (median = .08, range = 0–.88). Moderate variability was observed when her individual problem behaviors were examined. When treatment was initiated, her percentage of AET increased, with high variability (median = 99, range = 68–100). On Session 30, rate of problem behavior rose by 85% when Amy stated that she had a stomach ache.

During the maintenance phase, Amy's rate of problem behavior increased; her percentage of AET decreased; and moderate variability was noted (median = .82, range = 0–.46). As a

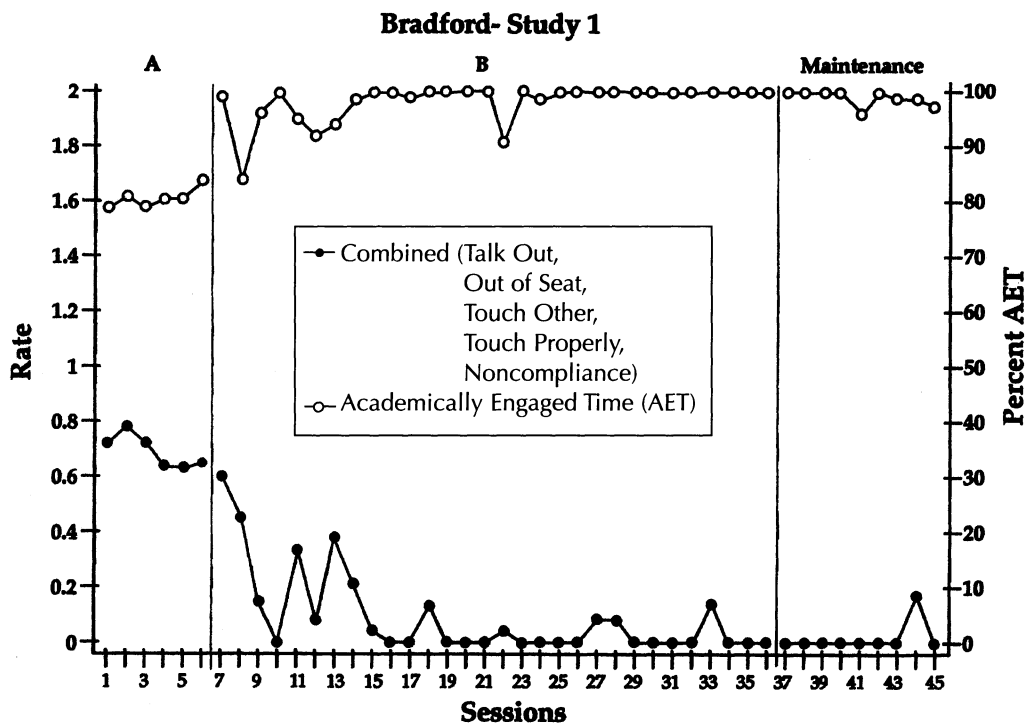


FIGURE 2. *Bradford's Combined Behaviors (CLASS)*

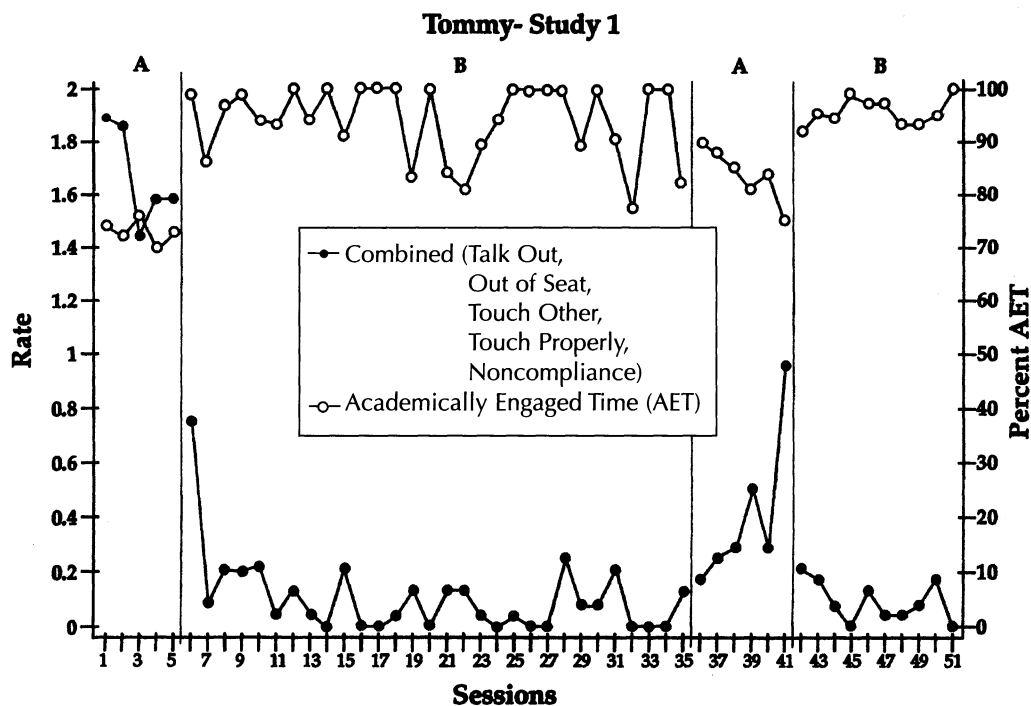


FIGURE 3. *Tommy's Combined Behaviors (CLASS)*

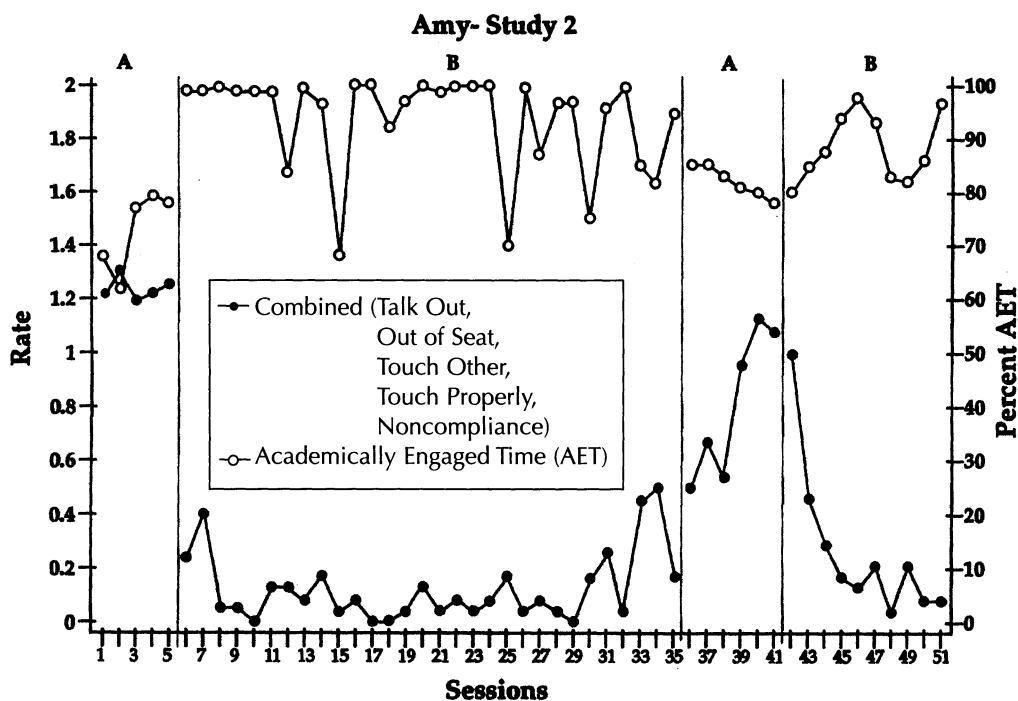


FIGURE 4. Amy's Combined Behaviors (CLASS + HOMEBASE)

result, a second CLASS-only treatment phase was implemented in which her rate of total problem behavior decreased to levels similar to those of the first treatment phase (median = .19, range = 0–.33), as did her percentage of AET (median = 87, range = 80–97).

Katie

During the baseline phase, a level trend (median = .50, range = 0–.33) was observed in Katie's rate of problem behavior. A level trend also was noted in her percentage of AET (median = 84, range = 83–85). Little variability was noted in both trends.

During the CLASS + HOMEBASE treatment phase, Katie's rate of total problem behaviors decreased with little variability (median = .02, range = 0–.17). Little variability was observed when individual problem behavior data were examined. When treatment was initiated, her percentage of AET increased; it leveled off after Session 6 (median = 100, range = 94–100).

During the maintenance phase, Katie's rate of problem behavior was stable and low (median = .63, range = 0–.08). Her percentage of AET remained at a high level with no variability (median = 99, range = 99–100).

Bilbert

During the baseline phase, upward and then downward trends (median = .71, range = 0–.28) were observed in Bilbert's rate of problem behavior. A slight upward trend was noted in his percentage of AET (median = 85, range = 84–98). Little variability was noted in both trends.

During the CLASS + HOMEBASE treatment phase, Bilbert's rate of total problem behaviors decreased and little variability was noted (median = .02, range = 0–.08). Similar variability was observed when individual problem behavior data were examined. When treatment was initiated, his percentage of AET increased; it leveled off after Session 14 (median = 100, range = 97–100).

During the maintenance phase, Bilbert's rate of problem behavior was stable and low (median = .03, range = 0–.08). His percentage of AET remained at a high level with little variability (median = 99, range = 97–100).

The results of CLASS condition for Amy, Katie, and Bilbert are summarized in Figures 4 through 6.

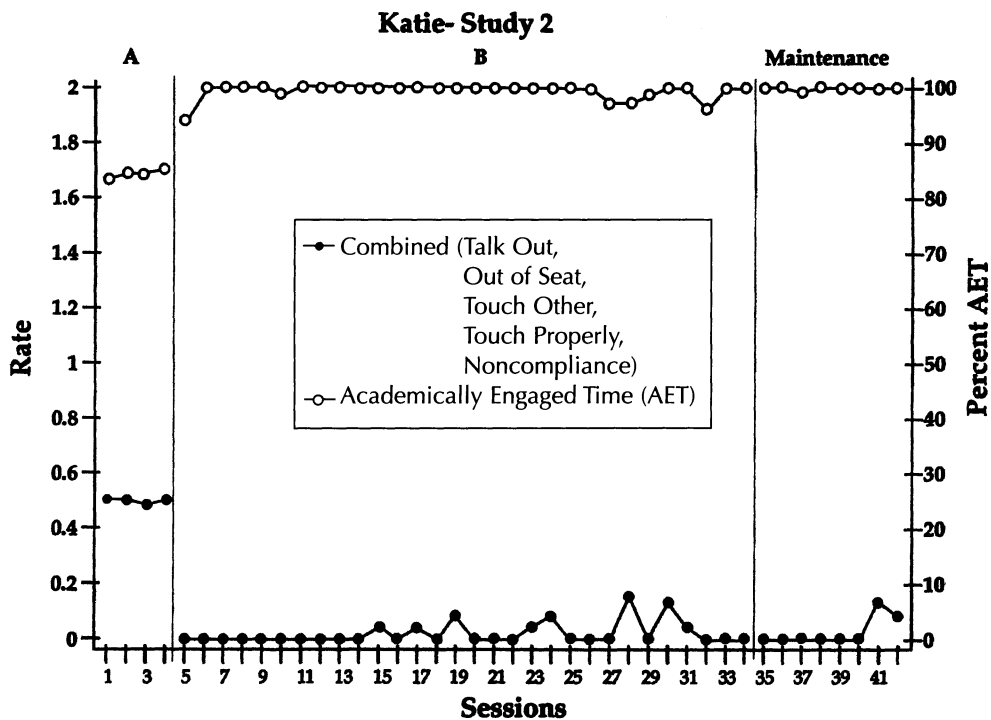


FIGURE 5. Katie's Combined Behaviors (CLASS + HOMEBASE)

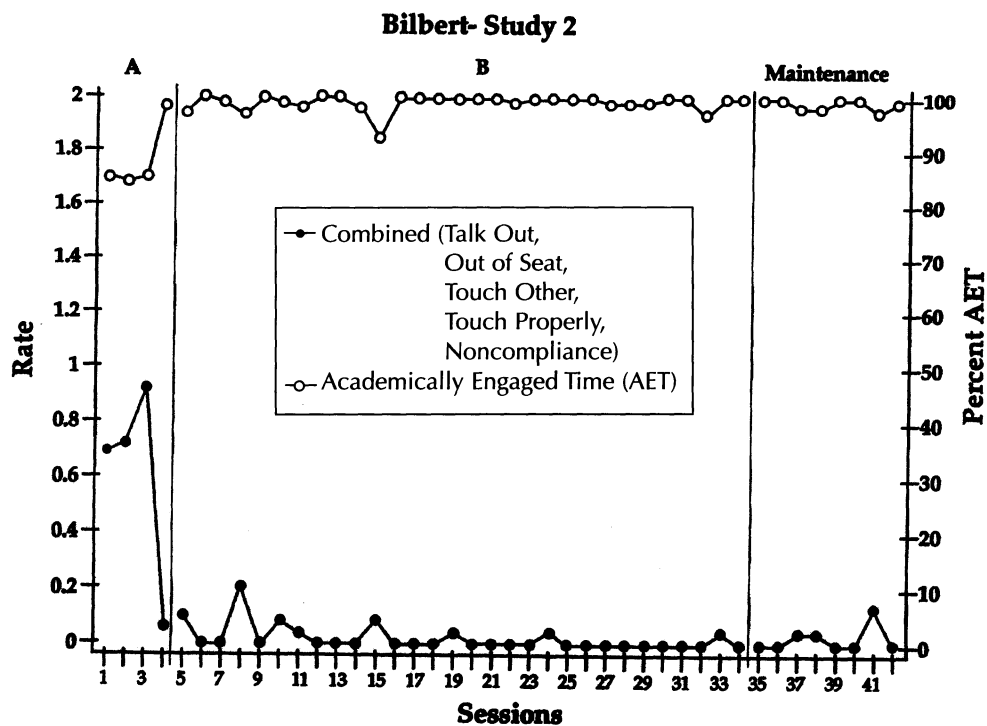


FIGURE 6. Bilbert's Combined Behaviors (CLASS + HOMEBASE)

Discussion

The increased prevalence and seriousness of antisocial behavior displayed by youths have become a major concern in our schools and communities. Research results suggest if interventions are proactive, implemented in the early elementary years, and involve the family and the teacher, the prevention of inappropriate classroom behaviors is possible (Golly et al., 1998, 2000; Walker et al., 1998). The purpose of this study was to analyze the effects of a teacher-directed and a teacher- and parent-directed proactive early intervention (i.e. First Step to Success) on the behaviors of elementary school children who were at risk for antisocial behavior. Three research questions were investigated:

1. Is a teacher-directed early intervention associated with decreases in the antisocial behavior of participants in a classroom?
2. Is a teacher- and parent-directed early intervention associated with decreases in the antisocial behavior of participants in a classroom?
3. For both intervention conditions, are treatment effects maintained when intervention is discontinued?

Students in the first condition (Question 1) received treatment from their teachers, and students in the second condition (Question 2) received treatment from both their teachers and parents. Teachers provided immediate reinforcement for the nonoccurrence of problem behavior by awarding points. When students met the point criterion (i.e., 90% of possible points per session), they earned a reward for the whole class. Students in the second condition (Question 2) also earned a reward at home.

During baseline, the students displayed moderate to high levels of problem behavior and moderate to low levels of AET. Rates of problem behaviors decreased and AET increased for all students during intervention and/or reversal. Occurrences of problem behaviors decreased to almost 0 for each student, and AET averaged more 90%. Furthermore, the effects maintained for 4 of the 6 students 5 months after intervention was discontinued.

Implications for Teachers

Both intervention conditions were associated with improvements in behavior for all 6 students during treatment and for 4 students during maintenance phases. These results suggest that teachers can decrease rates of problem behavior in their classrooms by using positive reinforcement strategies. In addition, the results corroborate findings from past research (Golly et al., 1998, 2000; Walker et al., 1998), and support the use of positive reinforcement strategies with a wide range of problem behaviors and students. By using proactive strategies, teachers can reduce their use of aversive and coercive strategies such as time out and scolding.

In this study, short-term maintenance effects (i.e., 5 months after discontinuation of the intervention) were indicated for 4 of the 6 students. For 2 students, the teachers reinstated the intervention daily to regain control over the behavior, and they later reported using the intervention only when they deemed it necessary. In other words, these teachers occasionally used the intervention when the student needed a little more support. This finding suggests that teachers should not assume response maintenance and should plan for intermittent "booster sessions" (i.e., reinstatement of all or part of CLASS) based on rates of student behavior.

Involvement of Parents

Given the small number of students who participated in this study, the relative impact of the parent component (i.e., HOMEBASE) is unclear. However, because teachers and parents informally reported improved child-parent relations, it appears prudent to include the parent component in the treatment of early antisocial behavior (Golly et al., 1998, 2000; Walker et al., 1998; Tremblay, Pagani-Kurtz, Vitaro, Masse, & Phil, 1995; Webster-Stratton, 1997). "Intervention programs for parents of . . . children can help these parents teach their children to behave appropriately before conduct problem result in peer rejection, well-established negative reputations, and school problems, not to mention academic failure" (Webster-Stratton, 1997, p. 432).

Teachers should work continuously with parents to increase child-parent relations in two ways. First, parents should be provided training opportunities to learn behaviorally

based strategies designed to increase their use of positive reinforcement and decrease their use of aversives at home (Ramsey & Patterson, 1989). Second, parents need support to implement new strategies because generalized responding cannot be assumed.

Limitations and Implications for Researchers

Findings from this study indicate important directions for future research. First, in this study, school and classroom logistical reasons prevented the systematic use of single-subject designs (e.g., multiple-baseline or ABAB designs) that would have demonstrated and replicated clearly a functional relationship between changes in student behavior and presence of the intervention. Therefore, further study is needed to examine the relative contribution of the school and home components on observed effects. Future studies should use single-subject research designs (e.g., multiple-baseline, yoked, alternating-treatment, multi-treatment) or between-group comparison designs to compare experimentally the relative effectiveness of each treatment condition.

Second, research is needed to examine the effect of using “booster sessions” to reteach appropriate behavior during problematic periods of the school year, such as before and after holiday breaks. Current results are insufficient to suggest that maintenance of intervention effects can be assumed. Future research should focus on replicating the effects from this study, determining the length of time that maintenance effects can be expected, and examining strategies that can be used to increase long-term maintenance effects.

Third, teachers reported that students needed to learn how and when to display appropriate behavior outside of the classroom. Future research should examine systematically the factors that contribute to acceptable levels of generalized responding by monitoring treatment effects in multiple settings (e.g., playground, cafeteria, bus). Teachers cannot assume that improvements in student behavior will be observed in noninstructional settings.

Fourth, future research needs to formally track fidelity of implementation of treatment results. In this study, fidelity was assessed in an informal manner. More specifically, the researchers simply asked the data collector each morning whether the teachers (CLASS) followed the intervention steps. Furthermore,

parents who participated in the HOMEBASE condition were called each evening by the teacher and asked whether they followed the HOMEBASE instructions for that day. The teachers and parents all orally reported that they followed the intervention steps each day of treatment. Due to the positive results of this study, future research must collect information on the extent to which the results are directly related to the implementation of the independent variable by the teachers and parents.

Fifth, research is needed to determine the impact of the intervention package on other school outcomes. Data should be collected on collateral variables such as academic engagement and achievement, social positive and negatives with peers and adults, and social competence across multiple contexts.

Sixth, research is needed to determine the impact of early interventions on later life-style outcomes (e.g., graduation, grade retention, employment). Longitudinal research is needed to determine whether the negative trajectory of antisocial behavior development can be redirected and common antisocial outcomes (e.g., delinquency, dropping out) can be prevented. Furthermore, research must determine whether any other interventions would be needed along the way.

Last, future research should include students and families with diverse backgrounds (e.g., behavioral, cultural, socioeconomic). Generalizations about the effectiveness of the First Step to Success intervention with students with characteristics that differ from those of students involved in this study would be premature.

Conclusion

Children who display problem behavior in the classroom have an elevated risk for later negative outcomes (e.g., rejection, delinquency, criminality). Research findings suggest that to decrease behavior problems in the classroom, interventions must be initiated early and be preventative in nature. The goal is to teach prosocial behaviors that would replace and compete with occurrences of problem behavior. Although additional research is recommended, the results from this study support the effectiveness of using behaviorally based interventions in reducing occurrences of classroom problem behaviors, at least in the short term for some students.

Despite the limitations of this study, the findings provide promising support for intervening proactively with children who demonstrate the early indicators of antisocial behavior. The positive effects of the intervention maintained across 2 months for 4 of the students. The effects did not maintain for 2 students; however, the reinstatement of continuous adult attention was associated with decreases in problem behavior for those who did not demonstrate maintenance effects.

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