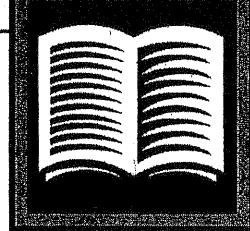


The First Step to Success Program



CHAPTER 21

Achieving Secondary Prevention Outcomes for Behaviorally At-Risk Children Through Early Intervention

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In our view, there are two primary developmental periods in which intervention efforts can be mounted effectively to prevent or reduce the destructive outcomes that so many behaviorally at-risk children experience later in their lives. These are the prenatal to age 5 developmental period and the elementary school years (i.e., ages 6 to 10). In the prenatal to age 5 period, some of the generic risks for later destructive outcomes (e.g., weak parenting practices, families experiencing severe levels of stress, parental drug use) can be addressed and sometimes reduced or eliminated via comprehensive, community-based interventions (see Olds, Hill, & Rumsey, 1998). Once a child begins the schooling experience, however, educators are faced with the responsibility of developing and enhancing protective factors that can buffer and offset the damaging effects of prior risk exposure because they typically can do little to affect such nonschool risks as parental neglect or abuse, which can powerfully affect school performance (see Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999).

THE ROLE OF RISK AND PROTECTIVE FACTORS IN PROBLEMATIC CHILD BEHAVIOR

The recently released report by the U.S. Surgeon General on youth violence (see Satcher, 2001) calls for the continuing development and broad-based application of systematic, comprehensive approaches to address the growing and very serious threats to the well-being of our children, youth, and the larger society. This report provides substantive information about the roles of risk and protective factors associated with poor mental health outcomes for children and youth. The more risks and the fewer offsetting protective factors there are in a child's life, the more likely it is that vulnerable children and youth will experience destructive outcomes at some time in their lives. Further, the earlier such risk exposure begins, the longer it lasts, and the more

severe it is, the greater the odds that the impact will be extensive (Loeber & Farrington, 2001; Patterson, Reid, & Dishion, 1992; Reid, 1993). The social conditions of our society over the past three decades seem to have accelerated the numbers of such children who manifest the palpable effects of pervasive prior risk exposure as they begin their school careers.

Many of the conditions of risk that set up vulnerable children for school failure and other negative outcomes exert their influence in the prenatal and early developmental periods (e.g. prenatal drug use during pregnancy, poverty, chaotic family situations). As noted previously, it is usually beyond the reach of schools and educators to prevent, eliminate, or reduce the impact of these "out-of-school" risks that have so much to do with how children respond to the ordinary demands of schooling. However, the Olds Nurse Home Visitation Program, which provides advocacy, support services, and direct training by public health nurses to young, first-time mothers who meet a characteristic risk profile, is an example of a very early intervention (prenatal to age 2) that can effectively address some of these risk factors. Further, early Head Start and regular Head Start have the potential to produce a similar but generally less powerful or enduring impact.

SCHOOLING AS A PROTECTIVE FACTOR

Research and meta-analyses have converged in documenting the protective influences of schooling in preventing and attenuating numerous destructive outcomes that occur in adolescence and young adulthood (see Hawkins et al., 1999; Malecki & Elliott, 2002; Najaka, Gottfredson, & Wilson, 2001). For example, in a meta-analysis of the dimensions that predict problem behavior in school, Najaka et al. (2001) found that school bonding emerged as a significant positive influence. Similarly, Malecki and Elliott (2002) reported an experimental study of a universal school intervention in which school bonding and attachment were identified as key factors in the favorable outcomes achieved. Finally, Hawkins and his colleagues reported a 12-year longitudinal intervention study that was designed to enhance the protective influences of school success and bonding/attachment to schooling. They also examined the role of early (Grades 1–3) versus later (Grades 5–6) intervention with at-risk students in reducing long-term destructive outcomes. Their intervention involved direct child skills training in social and academic domains, teacher training, support and coaching, and instruction of parents in proven techniques of effective parenting.

These researchers located and followed up on 598 of the 643 original study participants at age 18 and assessed them on a number of outcomes. Results showed no differences between the later intervention group and the control group. However, there were highly significant differences favoring the early intervention participants over the untreated control group on the fol-

lowing outcomes at age 18: violent, delinquent acts; heavy drinking; academic underachievement; teenage pregnancy; multiple sex partners; sexually transmitted diseases; behavioral episodes at school; and school failure. These authors concluded that (a) bonding and attachment to schooling served as a powerful protective factor against some very serious health risk behaviors in adolescence and (b) early intervention, delivered at the point of school entry, was highly effective in fostering such bonding and attachment.

FACILITATING SCHOOL BONDING AND ATTACHMENT

We believe that one of the very best ways to develop bonding and attachment to the schooling process is to try and ensure that all children, especially those who are behaviorally at risk, get off to the best possible start in school and receive the monitoring, supports, attention, and services necessary to achieve continuing school success within the elementary school years. To achieve this important goal, it is essential that schools have the capacity to intervene effectively with those students who enter the schoolhouse door not ready to learn and who manifest maladaptive behavior patterns that prove to be disruptive of the teaching/learning process. Children from chaotic family environments who experience significant risk exposure are especially vulnerable and in need of such supports.

High-level child aggression and oppositional-defiant behavior can be very problematic in this regard because they severely disrupt the two most important social-behavioral adjustments a student is required to make in school: teacher related and peer related (Leff, Power, Manz, Costigan, & Nabors, 2001; Walker, Colvin, & Ramsey, 1995; Walker, Irvin, Noell, & Singer, 1992). Failure in either of these critically important social-behavioral adjustments is very significant; failure in both can put the student's school success and life chances at risk. The behavioral correlates of successful and unsuccessful forms of these two types of adjustment are known and should be used as a road map by educators and mental health professionals alike in either designing or selecting interventions to enhance the school success of behaviorally at risk-students.

THE DEMAND FOR EVIDENCE-BASED INTERVENTIONS

From parent advocates, to school professional consumers, to legislators and policymakers alike, uniform demand has accelerated in recent years for (a) access to evidence-based interventions that are reasonable in their costs and (b) the efforts necessary for their effective implementation. Further, there is a critical need for proven and promising interventions that can be scaled up

and applied on a broad scale while preserving their effectiveness (see Elias et al., 1997).

The reasons underlying this change are not completely clear. However, it is likely that the plethora of school shooting tragedies during the mid- to late-1990s helped fuel an intense demand and search by school officials for effective interventions to ensure the safety of schools. Further, educators now seem much more open to preventive approaches that were rejected in the past as excessive in their fiscal costs or in the effort required for their implementation. In particular, school personnel have been more open to schoolwide interventions that have the potential to reduce discipline problems and to create a positive school climate (see Horner, Sugai, Lewis-Palmer, & Todd, 2001). These outcomes are broadly viewed by educators as enhancing the school's relative safety.

The important work of Hoagwood and Erwin (1997) in evaluating school systems' accommodation of behaviorally at-risk youth may be a contributing factor in this regard as well. They conducted a 10-year review of school-based mental health services for children and found that (a) approximately 75% of child mental health services are typically delivered within school settings, (b) the mental health needs of school-age children and youth are severely underserved in the context of schooling, and (c) the school-based services that *are* delivered tend to be ineffective due to the common practice of applying interventions that have not been empirically tested or proven. The work of Hoagwood and her colleagues has received broad attention in the professional literature and has positively influenced the funding decisions of federal agencies providing support to schools for coping with at-risk students. For example, both the U.S. Department of Education's Office of Safe and Drug Free Schools and the U.S. Office of Juvenile Justice and Delinquency Prevention have invested substantially in funding the adoption and implementation of the *Blue Print Series* of proven interventions that have been validated by the Center for the Study and Prevention of Violence at the University of Colorado (Elliott, 1994). Hoagwood (2000, 2001) and her colleagues continue to be a powerful voice in promoting evidence-based interventions by schools and mental health systems and in identifying the barriers to implementing what we know to be effective. Burns and Hoagwood (2002) have recently profiled effective, evidence-based interventions for use in child mental health and school contexts that represent a seminal contribution to the professional literature on this critical issue.

Jensen (2001) has recently contributed an important commentary on the critical features of such evidence-based interventions and has identified specific criteria for evaluating them. Jensen's work has been especially noteworthy in influencing the movement toward adoption of evidence-based practices. He is the founding editor of the *Report on Emotional and Behavioral Disorders in Youth*, which is dedicated to the promotion of evidence-based assessments and interventions for at-risk children and youth. This report is receiving increasingly strong support among child mental health and school professionals.

This chapter is focused on the First Step to Success early intervention program, which is designed to assist behaviorally at-risk students in getting off to the best start possible in their school careers (see Walker et al., 1998; Walker et al., 1997). This program has three modular components (screening, school intervention, parent training) and is applied to one behaviorally at-risk child at a time in K–2 classroom settings. First Step is an early intervention program designed to achieve secondary prevention goals and outcomes for students with behavior problems who show clear effects of risk exposure prior to beginning their school careers. Two of the most important features of this program are that it is a school-based intervention that addresses child mental health problems and it uses parents, teachers, and peers as natural helpers/therapists in the intervention process.

The remainder of this chapter focuses on the following topics: (a) overview and description of the First Step program, (b) development and trial testing of the intervention, (c) replication and extension of First Step program applications, (d) the Oregon First Step Replication Initiative, (e) cultural appropriateness of First Step, and (f) ongoing research. The chapter concludes with some observations about the school and preschool contexts in which the First Step program is applied.

OVERVIEW AND DESCRIPTION OF THE FIRST STEP PROGRAM

The First Step program has been described previously in several venues (see Epstein & Walker, 2002; Golly, Stiller, & Walker, 1998; Walker et al., 1998). As noted previously, First Step to Success contains three interrelated modular components. These are (a) a screening and early detection procedure that provides four different options for use by adopters in identifying target participants, (b) a school intervention component that teaches an adaptive behavior pattern for fostering school success and satisfactory adjustment to the normal demands of schooling, and (c) a parent component, called homeBase, that teaches parents how to develop and strengthen their child's school success skills (e.g., cooperating, accepting limits, sharing, doing one's work). First Step is a carefully manualized intervention program that comes in a kit containing both consumable (forms, stickers) and nonconsumable (behavioral coach's guidebook, parent handbook) materials. Resupply kits of consumable materials are available from the publisher for a nominal cost.

Screening

The First Step screening procedures are universal in nature and are designed to ensure that every child is given an equal chance to be identified for the intervention. Classrooms of students in Grades K–2 are screened for the presence

of emerging patterns of antisocial behavior. Four screening options are provided, ranging from less expensive (teacher nominations) to more expensive (a three-stage, multiple-gating process). Option 1, for example, requires the general education classroom teacher to nominate and rank-order students who show the behavioral indicators of aggressive or disruptive behavior. Option 4, in contrast, uses the Early Screening Project (ESP) measures and three-stage, multiple-gating procedures (Walker, Severson, & Feil, 1995) to accomplish the universal screening of all children in the classroom. We consider the ESP screening procedures to be more robust, comprehensive, and accurate; however, they are also more expensive in terms of the time and effort required for their administration.

School Intervention

The school intervention component of the First Step program is designed to teach target participants an adaptive pattern of behavior that will facilitate academic success and improved peer relations. A group-dependent contingency procedure is used in the school intervention to enlist peer support for the target child's attempts at changing his or her behavior. In this procedure, the target of the intervention earns points and praise for such things as following classroom rules; responding to teacher requests, instructions, and commands; cooperating with others; and doing appropriate work. If 80% or more of the available points are earned for appropriate behavior, the target child earns a group activity reinforcement or privilege (e.g., extra recess time, classroom games) for the entire class. If the reinforcement criterion is met in both daily sessions, the target child also earns a home reward or privilege prearranged with parents and caregivers. This procedure has been highly effective in assisting First Step target children to change their behavior in desired directions.

Home Intervention

The home intervention component of the First Step program, called homeBase, is designed to enlist parents and caregivers as natural therapists in the intervention process. Their major role is to support the school intervention and to teach their children school success skills at home. We find that approximately 60% of First Step parents actively participate in this portion of the intervention while the remaining 40% agree to it but do not follow through. In all cases, the school intervention component of the program is implemented, regardless of whether parents choose to participate in homeBase.

Over approximately a 6-week period, parents are taught how to teach their children key school success skills at home using a variety of techniques, including modeling and demonstration, role play, shaping, and home-based

activities and games. These skills include the following: communication and sharing, cooperation, limits setting, problem solving, friendship making, and self-confidence. Parents are provided with a homeBase program manual and a box of games and activities targeted to each of the six homeBase skills. Parents teach the homeBase skills, the target child displays the skill(s), and teachers monitor, support, and praise the child's use of the skills at school.

The First Step program is set up and operated initially in regular K–2 classrooms by a behavioral coach (school psychologist, counselor, early interventionist, behavioral specialist) who invests 50 to 60 hours of professional time during the approximately 3-month implementation period. After Program Day 10, the general education teacher assumes full control of the program and operates it on a daily basis until Program Day 30 is completed and the program is terminated. The behavioral coach contacts the target child's parents after Program Day 10 to enlist their participation and support in learning how to teach their child school success skills at home. During this program phase, the behavioral coach conducts six home visits, one per week, in which parents are instructed in how to teach the homeBase school success skills at home. One skill is covered per visit, with reviews of previously taught skills provided as needed.

Although not a formal part of the program procedures, it is strongly recommended that behavioral coaches continue to monitor the child's progress after program termination and to stay in contact with the parents and participating teacher(s), as appropriate. In some cases, it may be necessary to reinstitute part of the First Step program in the form of "booster shots" to sustain previously achieved behavior changes.

The First Step program has been evaluated primarily through the use of teacher report measures, by direct observations recorded in classroom settings, and via less formal social validity measures (questionnaires, focus groups). Typically, the program produces an effect size of approximately .80 and above across the teacher report and observational measures in pre/post assessments of behavioral changes (see Walker et al., 1998, for details). Longer term follow-up assessments in the primary and intermediate grades have indicated moderate to good durability of treatment effects in most cases (see Epstein & Walker, 2002; Walker et al., 1998). Consumer satisfaction results from caregivers, teachers, and coaches also tend to be generally positive (see Golly et al., 1998); however, some teachers see the program as too demanding, and school personnel have reported from time to time that it is too expensive in terms of the materials required and the behavioral coach's time investment. Thus far, the specific contributions of the homeBase component of First Step to overall program outcomes have not been assessed.

First Step is considered to be a promising, evidence-based early intervention for diverting behaviorally at-risk children from a destructive pathway at the point of school entry. To date, the program has been listed in a number of reviews of recommended early intervention programs for achieving prevention outcomes. Appendix 21.A contains a listing of these reviews and contact information for accessing them.

DEVELOPMENT AND TRIAL TESTING OF THE FIRST STEP INTERVENTION

The First Step program was developed through a 4-year grant to the senior author from the U.S. Office of Special Education Programs. This grant supported a collaborative development effort between the Institute on Violence and Destructive Behavior (IVDB) at the University of Oregon, the Oregon Social Learning Center, the Eugene 4J School District, and the Oregon Research Institute. Each of these affiliating agencies made unique contributions to the First Step program's development and final form. Year 1 of the project was focused on planning, program design, creating a context for implementing the intervention, and recruitment; Years 2 and 3 involved implementation and trial testing of the intervention; Year 4 activities were concentrated on packaging, dissemination, and staff training efforts associated with adoption of the First Step program by school districts.

In the original trial testing of the First Step program reported in Walker et al. (1998), two cohorts of 24 and 22 kindergartners and their families, teachers, and peers were recruited from the Eugene 4J School District across 2 school years. These kindergartners were assigned to the First Step intervention using a wait-list control group design; that is, half of Cohort 1 participants were assigned to receive the First Step program and half served as wait-list controls who, in turn, received the intervention following program completion by those who received it first. This procedure was implemented successfully for Cohort 1 participants in Year 2 and was repeated exactly for Cohort 2 participants during Year 3.

A trainer-of-trainers model was used to implement the intervention. A cadre of eight program consultants or behavioral coaches was recruited and trained by project coordinators. They included school counselors, psychologists, behavioral specialists, and graduate students. The coaches were trained and supervised by IVDB personnel (i.e., the project coordinators), who also were developers and authors of the First Step program. First Step coaches were assigned two to three target participants each, which they then ran in succession. The project coordinators also ran First Step cases in addition to their other supervisory and coordinating duties (see Walker et al., 1998, for complete details of these staff training and monitoring/supervision procedures).

Five measures were used to assess program outcomes in the Walker et al. (1998) study. They included four teacher report measures and one behavioral observation measure. The teacher report measures consisted of the adaptive and maladaptive teacher rating scales from the ESP, the Aggression and Social Withdrawal subscales of the *Child Behavior Checklist* (CBCL; Achenbach, 1991), and in vivo recordings of academic engaged time (AET) within the classroom settings where the First Step Program was implemented. The teacher report measures are validated and nationally normed Likert rating scales of child behavior that provide frequency estimates of occurrence. The AET measure uses a stopwatch duration recording procedure. These five mea-

asures were completed on a pre/post basis for each target child included in Cohorts 1 and 2 who participated in the intervention.

Table 21.1 presents outcome data for Cohorts 1 and 2. Analyses of covariance were conducted in which baseline scores on these measures were used as covariates. Mean differences were statistically significant for four of the five dependent measures. The social withdrawal measure was not sensitive to the First Step intervention.

Cohort 1 participants were followed up annually through Grade 4 and Cohort 2 participants through Grade 3. The same measures used in the initial program evaluation were readministered during each of the follow-up years. Maintenance outcome data showed that a substantial portion of the original program gain was sustained across the follow-up assessments, with the AET observational measure showing greater durability than the teacher report measures. The long-term follow-up data referenced here are reported in Walker et al. (1998) and in Epstein and Walker (2002). Although these results were encouraging, they represent a relatively small number of participants and call for confirmation through replication with larger and more diverse samples by the developers and other investigators. A series of replication and extension studies of the First Step program are briefly described next.

REPLICATION AND EXTENSION OF FIRST STEP PROGRAM APPLICATIONS

This section briefly describes some of the program replications and extensions of First Step that have been conducted by the program's developers and other investigators (see Beard, 1998; Golly, Sprague, Walker, Beard, & Gorham, 2000; Golly et al., 1998; Overton, McKenzie, King, & Osborne, 2002; Perkins-Rowe, 2001; Zolna, Kimmich, & Hawkinson, 2001). The reader is referred to primary sources for details on these efforts.

In the first of several intersubject replications of the First Step program and its effects, Golly and colleagues (1998) reported an investigation involving two studies. Study 1 was a replication of the First Step program in which 20 kindergartners participated; a total of 16 to 18 children (depending upon the dependent measure) for whom useable data could be obtained were included in the analyses. Participant selection procedures and dependent measures in this study were identical to those used by Walker et al. (1998) in the initial trial testing of First Step. The data from this study closely replicated the results obtained by Walker et al. (1998) in terms of the magnitude and direction of behavior change(s) achieved for the target participants. Also, four of the five dependent measures registered statistically significant effects, as in the Walker et al. (1998) study. The Social Withdrawal subscale of the CBCL again was not sensitive to the First Step intervention.

Beard (1998) conducted a study of 6 kindergartners (4 boys and 2 girls) in a rural school district in southern Oregon using single-case methodology

TABLE 21.1
Raw Score Intervention and Follow-up Results: Means and Standard Deviations by Cohort (1993–1994 and 1994–1995)

		Evaluation Time Points' Mean (SD)					
		Cohort 1 (1993–1994)					
Measures	Normal Range	Kindergarten		Grade 1	Grade 2	Grade 3	Grade 4
		Pre- (n = 24)	Post- (n = 23)	(n = 21)	(n = 18)	(n = 17)	(n = 10)
Teacher Ratings							
ESP Adaptive ^a	(35.9)	21.96 (4.57)	28.83 (6.25)	25.43 (4.70)	26.72 (5.66)	30.60 (5.60)	29.43 (8.36)
ESP Maladaptive ^b	(13.5)	32.58 (7.61)	22.26 (8.86)	23.48 (6.50)	23.83 (9.37)	19.40 (5.58)	18.14 (12.50)
CBC Aggression ^c	(7.0)	20.33 (11.10)	11.04 (8.31)	14.19 (10.06)	14.55 (11.79)	8.60 (7.22)	7.00 (11.25)
CBC Withdrawn ^d	(0–1)	7.04 (4.87)	4.50 (4.41)	4.62 (4.05)	6.11 (4.08)	4.90 (3.07)	5.29 (4.89)
AET observations ^e	(75.19%)	(n = 24) 62.54% (16.35)	(n = 24) 79.83% (22.16)	(n = 20) 90.65% (10.62)	(n = 17) 83.67% (14.02)	(n = 17) 78.68% (12.90)	(n = 10) 90.40% (5.52)
		Cohort 2 (1994–1995)					
Measures	Normal Range	Kindergarten		Grade 1	Grade 2	Grade 3	Grade 4
		Pre- (n = 22)	Post- (n = 22)	(n = 15)	(n = 12)	(n = 8)	Grade 4
Teacher Ratings							
ESP Adaptive ^a	(35.9)	21.73 (5.26)	26.68 (4.86)	26.47 (5.78)	28.33 (3.05)	29.63 (9.12)	—
ESP Maladaptive ^b	(13.5)	31.45 (6.97)	26.27 (8.04)	23.67 (6.95)	21.33 (7.50)	23.00 (10.11)	—
CBC Aggression ^c	(7.0)	24.82 (10.41)	16.77 (10.56)	17.27 (9.17)	16.00 (7.00)	16.88 (12.33)	—
CBC Withdrawn ^d	(0–1)	4.00 (3.49)	2.64 (3.40)	1.20 (1.90)	0.33 (.58)	2.88 (4.73)	—
AET observations ^e	(75.19%)	(n = 22) 59.64% (14.41)	(n = 22) 90.77% (6.71)	(n = 13) 81.85% (10.31)	(n = 12) 89.85% (9.63)	(n = 8) 75.00% (20.25)	—

Note. From *Community Treatment for Youth: Evidence-Based Interventions for Severe Emotional and Behavioral Disorders*, by B. Burns and K. Hoagwood (Eds.), 2002, New York: Oxford University Press. Copyright 2002 by Oxford University Press, Inc. Reprinted with permission.

^aESP Adaptive = Early Screening Project, *Adaptive Behavior Rating Scale*. ^bESP Maladaptive = Early Screening Project, *Maladaptive Behavior Rating Scale*. ^cCBC Aggression = *Child Behavior Checklist*, Aggression subscale. ^dCBC Withdrawn = *Child Behavior Checklist*, Withdrawn subscale. ^eAET observations = academic engaged time.

to assess behavior changes over time. Two observational measures were used to record baseline, intervention, and maintenance outcomes. The first was a composite measure of maladaptive classroom behaviors that included talking out, out-of-seat, touching others, off-task actions, and noncompliance with teacher instructions and commands. The second observational measure was a duration measure of AET in which students were evaluated as to the level of their engagement with academic tasks and activities. Results indicated substantial changes on both dependent measures for each of the 6 participants in this study. That is, the proportion of academic engaged time displayed during allocated instructional periods showed approximately a 20% gain from a baseline average of approximately 75% across the 6 participants, as indicated by behavioral observations recorded during the intervention period. The frequency of problem behavior showed a decrease during intervention to zero levels for 2 of the participants and to near-zero levels for the remaining 4.

More recently, this investigator (Beard) has successfully applied the First Step program to a number of African American K-2 boys ($n = 15$) in urban areas in southern California. Figure 21.1 presents single-case observational data for 6 of Beard's target participants. Three of her participants received the school-only component of the First Step program (i.e., Class) and the remaining 3 received the home and school components (Class and homeBase). Figure 21.1 shows the participants' percentage of AET and the frequency of instances of disruptive, inappropriate classroom behavior (e.g., noisy, out-of-seat, disturbing others).

These results are very similar to those obtained with a rural, non-African American sample reported by Beard (1998). In addition, all 6 participants responded well to the intervention, regardless of whether school-only or school and home components were in effect. It is encouraging to see such responsiveness from young African American male students within urban settings to a high-quality implementation of the First Step program.

In a similar replication effort using single-case methodology, Golly et al. (2000) reported results that closely replicated those of Beard's (1998) work with rural students in Oregon. Target participants were two sets of identical twins enrolled in kindergarten settings in a rural, southern Oregon school district. A multiple baseline design was used in this study across each set of twins to establish a causal relationship between the First Step program's implementation and documented changes in the observational measures used. The results of this study were quite similar in direction and magnitude of achieved effects to those reported by Beard (1998).

Using a case study approach and direct observational measures, Overton and her associates at the University of Oklahoma (Overton et al., 2002) conducted a 3-year replication study of the First Step to Success program supported by an outreach grant from the U.S. Office of Special Education Programs. These investigators also conducted extensive analyses of the social validity and implementation fidelity of First Step as part of their study, which involved more than 20 students who were behaviorally at risk and their families within school districts across Oklahoma. The results of Overton et al.

(text continues on p. 515)

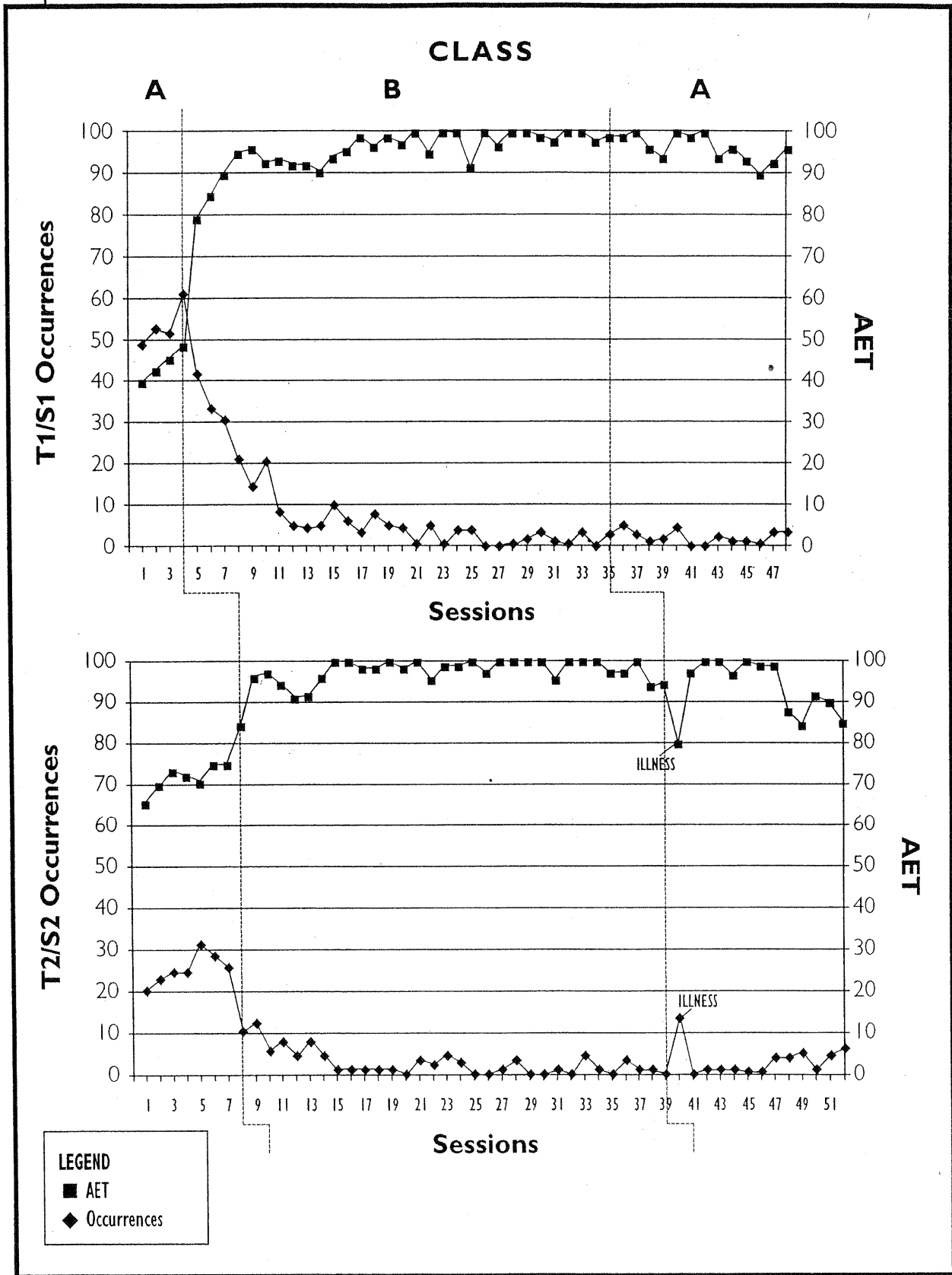


FIGURE 21.1. Percentage of academic engaged time (AET) and the frequency of disruptive or inappropriate classroom behavior for 6 African American boys in the First Step program.

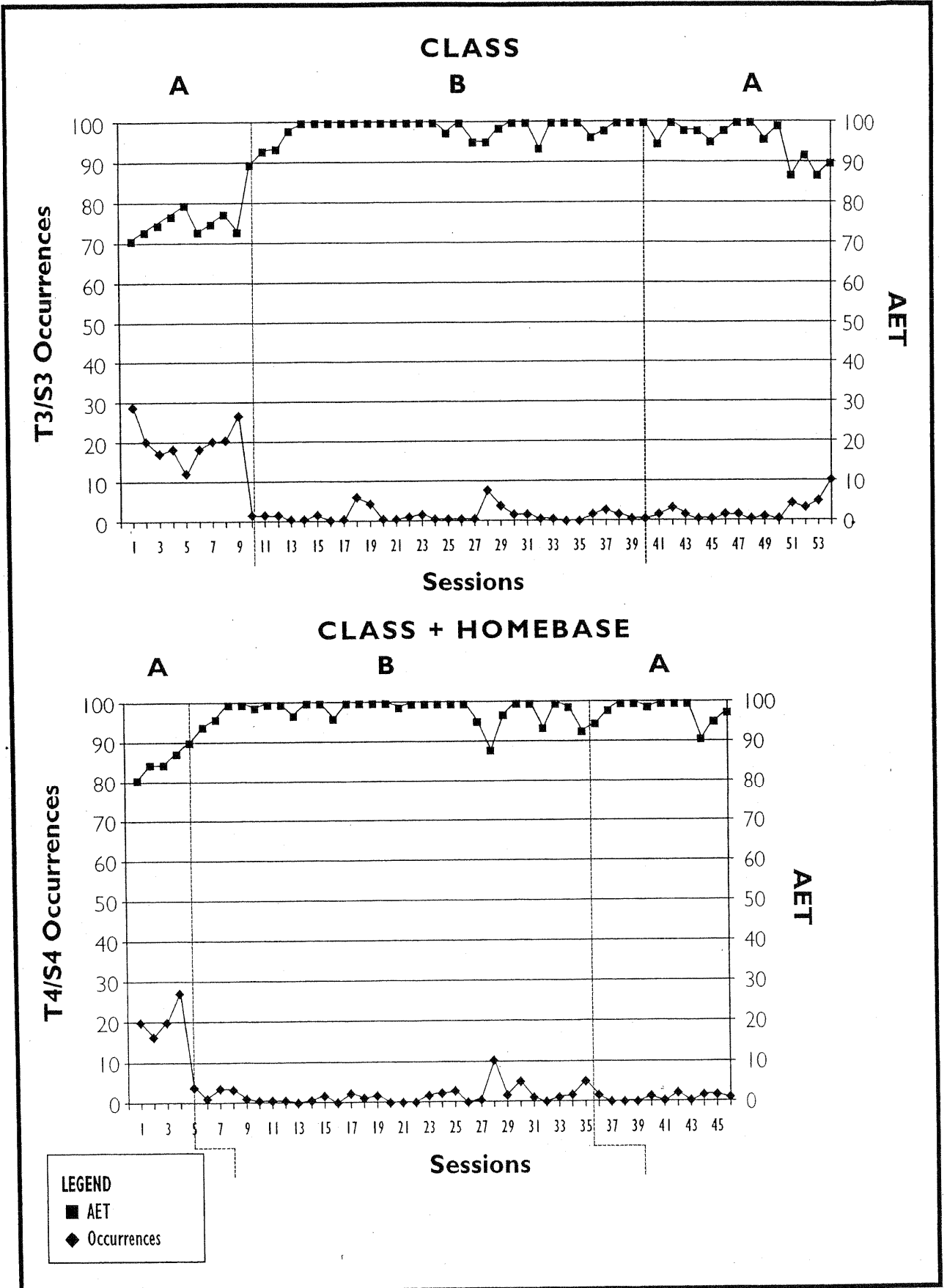


FIGURE 21.1. Continued.

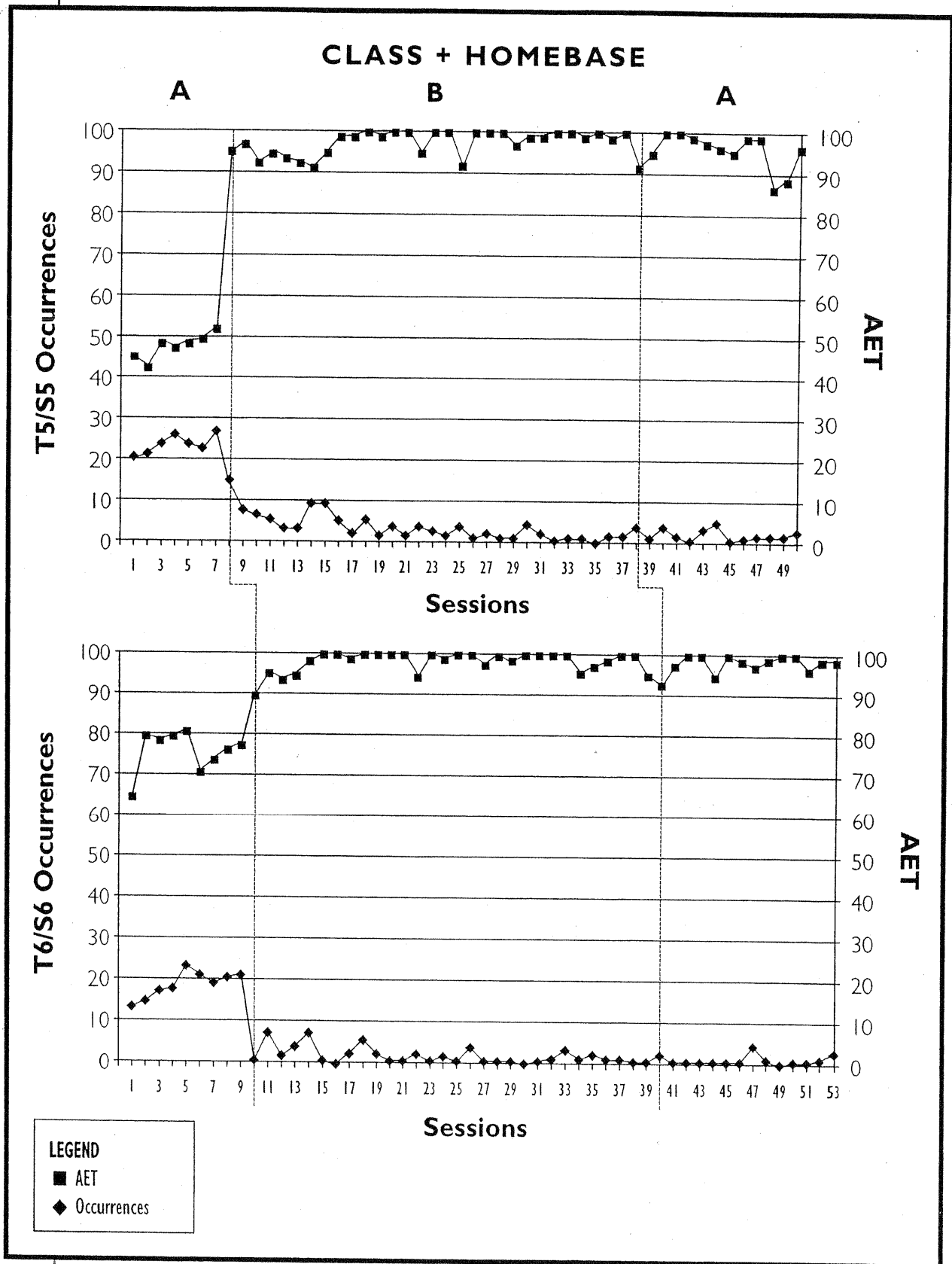


FIGURE 21.1. Continued.

paralleled those of Walker and his colleagues (see Walker et al., 1998) in some respects but not in others. For example, the magnitude of effect of the First Step intervention upon child behavior from pre- to postintervention assessments was very similar across the two investigations. However, the maintenance effects reported by Overton et al. were much more variable and generally of a lower level than those of Walker et al. following termination of intervention. In addition, Overton and her colleagues experienced more implementation barriers (i.e., lack of administrative support, uncooperative teachers, program cost) and more diverse consumer satisfaction outcomes. The First Step program applications in the Overton study involved primarily rural and suburban school settings.

Perkins-Rowe (2001) conducted an extension of the First Step program while examining both direct and collateral effects of the intervention. Using a multiple baseline design across 4 target participants and general education classrooms, she investigated the magnitude of the intervention's effect on the target participants, with observational procedures as the primary dependent measure. In addition, she examined the collateral impact of the intervention on the behavior of teachers and peers and on the overall classroom environment. Results indicated that target student problem behaviors decreased while rates of academic engagement increased substantially. Further, there was a moderately positive effect on these measures for "problem behavior" peers, while "average" or typical peers in each classroom maintained appropriate levels of behavior. In addition, teacher rates of positive interactions with students increased. Classwide AET, assessed on four separate occasions per classroom, increased substantially from pre- to postintervention (i.e., from approximately 50% to 85%). Teachers rated the intervention as effective and as moderately easy to use. This study was impressive in demonstrating clear collateral positive effects of a targeted intervention on nontargeted participants (i.e., teacher, peers, and the entire class of students). Replication of these effects will be important to demonstrate, and a study to do so is currently being conducted.

THE OREGON FIRST STEP REPLICATION INITIATIVE

The First Step program was the focus of an independent, state-funded evaluation conducted by the Oregon Human Services Research Institute (HSRI) and reported in the spring of 2001. During the 1999–2001 biennium, the Oregon state legislature appropriated approximately \$500,000 to begin making the First Step program available statewide for all schools and districts interested in adopting it. These funds supported the cost of program materials, staff training in the implementation of First Step, provision of technical assistance, and independent evaluation of the program's effects and outcomes. This initiative, known as the Oregon First Step Replication Initiative, is the first example

of an application of the the program on a widespread basis in the real-world conditions of classroom settings and schools without the careful supervision and monitoring of the implementation process by the program's developers.

Between January 2000 and April 2001, a total of 31 First Step training sessions were conducted in Oregon school district sites involving 22 of the state's 36 counties. These training sessions were conducted by the First Step program's developers and involved 244 behavioral coaches selected by their respective school districts to implement the program. The HSRI evaluation of the program's implementation examined (a) the impact of the First Step intervention on the participating children and its broader impact on peers, schools, and families and (b) the impact of implementing the program in the absence of close monitoring by program developers. The HSRI evaluators worked closely with the First Step developers during the implementation process and used the same dependent measures as Walker et al. (1998) in evaluating the program's effects. These measures included direct observations of AET, teacher ratings of adaptive and maladaptive behavior, and the Aggression subscale of the CBCL. In addition, the HSRI evaluators also developed an implementation fidelity tool for use during classroom observation sessions to assess how well the First Step program had been implemented.

HSRI evaluators also developed surveys to assess teacher and parent perceptions of the First Step program to supplement the child behavior change data. The teacher and parent surveys were relatively brief and asked a series of questions that required both quantitative and open-ended, qualitative responses. The survey questions included queries about parents' and teachers' expectations for the program prior to its implementation, as well as their assessment of its impact and their satisfaction with it.

HSRI evaluators developed evaluation packets for each behavioral coach and distributed them during staff training sessions in First Step implementation procedures prior to the beginning of the evaluation study. The staff training sessions were conducted by IVDB experts in the First Step intervention who, along with the HSRI evaluators, reviewed and discussed their contents and study measures with coach trainees. Behavioral coaches were instructed in guidelines for administering and recording each of the study measures. In addition, participating coaches were trained in how to accurately record AET using a stopwatch recording procedure. Coaches were trained to an 80% interrater agreement criterion prior to recording behavioral observations. Following the staff training sessions, HSRI sent a follow-up letter reviewing the data collection requirements and the importance of meeting posted timelines to each coach.

Each evaluation packet contained the following items: (a) a letter and checklist of tasks for coaches, (b) three teacher report behavior rating scales (ESP Adaptive, ESP Maladaptive, CBCL Aggression), (c) an observation recording form for use by coaches in recording AET during pre- and postintervention time periods, (d) a student profile sheet on which coaches entered the rating scale scores, (e) teacher and parent surveys, (f) letters introducing First Step to teachers and parents, and (g) a one-page summary of the evaluation. Participating classroom teachers completed the three teacher rating scales at

pre- and postintervention time points; the behavioral coaches recorded AET observations on these same occasions.

HSRI received First Step data from 30 behavioral coach participants representing 11 of Oregon's 36 counties by the May 2001 deadline for inclusion in the evaluation report. A total of 24 coaches returned useable data that were included in the final evaluation report. Coaches were asked to distribute and collect the teacher and parent surveys. Only 19 teachers completed the pre- and postintervention surveys; 17 sets of parents completed and returned the parent surveys.

Pre- and postintervention change scores for target participants for whom useable data were received by the HSRI evaluators in time for inclusion in its evaluation report are displayed in Table 21.2.

The results in Table 21.2 show substantial changes in the desired directions for each of the four dependent measures. All of the pre/post changes for the target participants were statistically significant at $p < .001$ and closely replicated those obtained by Walker et al. (1998).

HSRI evaluators conducted an additional analysis to assess responses to the intervention of students with more severe behavior problems versus those who had less serious involvements. A subgroup of 30 children were identified who were rated as "most severe" by their teachers on a least one of the three teacher rating scales (Adaptive, Maladaptive, and Aggression) at the beginning of the evaluation study. The mean score changes were statistically significant in favor of the most severe group on all three teacher rating measures but not for the AET observational measure. The average gain scores on these three measures for the severe group were nearly twice the magnitude of those for all other target children in the HSRI evaluation sample. It is important to note that the more severe participants had greater room for improvement on the study measures due to lower baseline scores.

The teacher survey asked only one question specifically about the target child, with the remaining questions focused on the class as a whole. The child-specific question asked how positively or negatively other children in the class viewed the target child on a scale of 1 to 4 (1 = *very positively*; 4 = *very negatively*). The baseline survey average for this question across the 19 teachers

TABLE 21.2

Mean Scores Across Four Measures for Participants
in the Oregon Human Services Research Institute Evaluation

Measure and Group	Preintervention		Postintervention		n
	M	SD	M	SD	
Adaptive—Experimental	21.38	4.42	27.90	5.50	181
Aggression—Experimental	25.41	9.27	16.04	9.62	123
Maladaptive—Experimental	32.33	6.57	23.10	7.38	123
AET—Experimental	64.05	20.90	86.66	12.80	128

Note. AET = academic engaged time.

was 2.68 and the postintervention average was 2.05—a change that was in the right direction but that was not statistically significant. The remaining questions asked the teacher to estimate the First Step program's impact on the classroom as a whole. Overall, participating teachers saw the First Step program as valuable and especially liked the classwide impact of the program—a finding that replicates that of the Perkins-Rowe (2001) investigation.

For parents, the strongest positive changes occurred in the following areas: (a) their concerns about the child's behavior at home, (b) their concerns about the child's school behavior, (c) negative school reports from the child's teacher(s), and (d) the child's ability to get along with others. Parents cited family gains resulting from First Step as their favorite part of the program.

The overall results of this program evaluation were positive and encouraging. The findings of the HSRI evaluators closely replicated the level and direction of the First Step program's impact, as indicated by the close correspondence between results for the HSRI sample ($N = 181$) and the Walker et al. (1998) cohorts (n 's = 24 and 22). Achieving intervention effects of this magnitude when the program is scaled up and applied under far less than controlled experimental conditions is a positive sign. Two other positive outcomes of this study were that (a) both parents and teachers saw collateral positive effects on the classroom and the family resulting from their participation and (b) evidence emerged that the First Step program is particularly effective with more intensely involved children.

These positive outcomes are, however, buffered and offset to some extent by several limitations resulting from logistical problems, data collection difficulties, and use of behavioral coaches as both evaluators and interventionists. Due to the nature of the HSRI study's design and execution, it was not possible to randomly assign children to experimental and control groups for comparative purposes. Thus, the effects noted cannot be attributed to a causal relationship between the First Step program and the observed changes in ratings and behavioral observations. Further, having coaches perform the dual roles of data collectors and interventionists introduces the very real possibility of bias in the data that favors the possibility of finding positive program effects. However, it was encouraging to see the close correspondence to and replication of the HSRI and Walker et al. (1998) investigations, in which these potentially biasing conditions were controlled. Finally, usable evaluation data were available from only 24 of the 244 behavioral coaches trained in First Step implementation, which represents only 11 of Oregon's 36 counties. Thus, it is unlikely that the sample adequately represented the population and geographic diversity of Oregon.

Many of these problems were due to inadequate funding of the evaluation study and delays in its onset, which resulted in a limited number of coaches participating from the available pool of trained personnel across the state who were capable of such participation. Although the evaluation data for the HSRI sample closely matched that for Cohorts 1 and 2 of the Walker et al. (1998) study, which were collected under much more rigorous conditions, the fact remains that their data may not adequately reflect the true impact of the First Step program's implementation.

HSRI evaluators' observations of the First Step program's implementation fidelity indicated that the integrity or quality of implementation varied substantially. They found that in some cases, all the key steps in the model's implementation were followed closely and rigorously adhered to, but in other cases there was significant deviation from intervention protocols and instructions contained in the First Step program materials. HSRI evaluators concluded that the First Step program produces reliable changes in child behavior even when there is relatively poor implementation fidelity.

It is hoped that a more thorough and scientifically rigorous program evaluation of the First Step intervention can be accomplished in subsequent years as a part of continuing State of Oregon funding of the program's implementation in Oregon schools. At a minimum, such an evaluation would need to have the following features: (a) random assignment to treatment and control conditions, or at least to wait-list control groups; (b) recording of pre- and postintervention measures by trained individuals who have nothing to do with the intervention and are blind to the treatment or control status of participating children, and (c) long-term follow-up monitoring and assessments to measure the durability of intervention-based behavioral gains.

THE CULTURAL APPROPRIATENESS OF FIRST STEP

The First Step program has been demonstrated to work effectively in rural, suburban, and urban settings and with a diverse array of students representing different cultural backgrounds (Caucasian, African American, Latino, Asian, and Native American). In addition, the First Step program has been translated into Spanish and is currently being translated into French and Japanese. To date, the program has been implemented in Australia and New Zealand, both English- and French-speaking Canadian provinces, and approximately 20 U.S. states. Plans are also under way to replicate the First Step program within Japanese schools. These program applications have proved successful and effective. They expand the range of populations, contexts, and cultural conditions under which the First Step program can produce reliable improvements in the behavior patterns of at-risk children.

ONGOING RESEARCH

The First Step program is currently the focus of several federally funded initiatives to intervene effectively with young children experiencing problem behavior primarily of an externalizing nature. Researchers at the University of Nebraska, Lincoln, and the University of Oregon are current recipients of large 5-year programmatic grants to demonstrate the effective integration of intervention approaches to achieve primary, secondary, and tertiary prevention goals and outcomes. In both these initiatives, the First Step program has been

incorporated as an intervention to address secondary prevention goals. Results of these investigations will significantly expand the research base on First Step and should demonstrate its effects as implemented within the context of a schoolwide, universal intervention. The Washington County Mental Health Department in Oregon recently received a 4-year prevention grant from the Substance Abuse and Mental Health Services Administration (SAMHSA) to study the comparative efficacy of First Step. This ongoing study compares the results from an intervention using the standard version of First Step with data from an untreated control group and also with results from an enhanced version of the program in which participating families receive mental health support services in addition to the homeBase component of the program. Finally, the senior author, along with Severson, Feil, and Golly, recently received a 5-year grant award from the U.S. Agency for Children, Youth and Families (ACYF) to adapt the First Step program for effective use with Head Start children, teachers, and families. The results of this research will include a program version of First Step for exclusive use by Head Start programs. We are hopeful that these research initiatives involving First Step will increase its effectiveness and expand the range of applications in which the program will be considered for adoption and implementation. We look forward to seeing the results of these research efforts over the next 5 years.

CONCLUDING REMARKS

First Step appears to be an effective intervention with acceptable social validity, as indicated by feedback from consumers, although some teachers see it as too demanding of their time and effort. Additional research is needed to establish its impact within urban school and community settings, where powerful risk factors operate at child, family, school, and community levels. Examination is also needed of the school contexts in which the program can and will likely be applied, including schoolwide or universal interventions, specialized alternative settings for at-risk students within school districts, and day treatment or residential treatment centers that include schooling components. The relative contributions of the home and school components of First Step to an overall treatment effect is a question that also needs further investigation. It is possible that a substantial treatment effect can be achieved from the school-only part of the program, and the recent results of Beard, reported earlier herein, suggest that this may indeed be the case. If so, this would be an important finding to document. Finally, it is important to research the relative contributions of these program components to long-term maintenance outcomes as indicated by longitudinal follow-up assessments.

APPENDIX 21.A

Reviews of Effective Early Intervention Programs

The First Step to Success program has been included or featured in the following compilations of effective interventions to address at-risk children and youth and to identify approaches for making schools safer and violence free.

1. *Preventing Mental Disorders in School-Age Children: A Review of the Effectiveness of Prevention Programs.* Mark T. Greenberg, PhD, Director, Prevention Research Center for the Promotion of Human Development, College of Health and Human Development, Pennsylvania State University, University Park, PA 16802; phone: 814/863-0112; fax: 814/865-2530; Web site: <http://www.psu.edu/dept/prevention>
2. *Effective Interventions for Children Having Conduct Disorders in the 0 to 8 Age Range.* Carolyn H. Webster-Stratton, PhD, Professor and Director, Parenting Research Clinic; Professor, Family and Child Nursing; Box 354801, 305 University District Building, School of Nursing, University of Washington, Seattle, WA 98195; phone: 206/543-6010; fax: 206/543-6040; e-mail: cws@u.washington.edu
3. *Effective Programs and Strategies to Create Safe Schools.* Paul Kingery, PhD, Director, Hamilton Fish National Institute on School and Community Violence—National Office, 2121 K Street NW, Suite 200, Washington, DC 20037-1830; phone: 202/496-2201; fax: 202/496-6244; e-mail: kingery@gwu.edu; Web site: www.hamfish.org
4. *Compilation of Early Violence Prevention Programs and Resources.* Julia M. Silva, PhD, APA Public Interest Directorate, American Psychological Association, 750 First Street NE, Washington, DC 20002-4242; phone: 202/336-5817; fax: 202/336-5723; e-mail: publicinterest@apa.org; Web site: www.apa.org/pi
5. *Programs and Interventions to Make Schools Safer.* Video Series on Safe Schools, National Education Association, 1201 16th Street NW, Washington, DC 20036; phone: 202/833-4000.
6. *Preventing Delinquency Through Early Interventions: Prenatal to Age 10.* Ray Mathis, Children's Delinquency Reduction Committee; Executive Director, Citizens Crime Commission, Affiliate of the Portland Metropolitan Chamber of Commerce, 221 NW Second Avenue, Portland, OR 97209-3999; phone: 503/228-9736; fax: 503/228-5126; e-mail: ccc@pdxchamber.org

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