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Implementation and Sustainability of an Evidence-Based Program: Lessons Learned From the PRISM Applied to *First Step to Success*

Michelle W. Woodbridge, PhD[1], W. Carl Sumi, PhD[1], Jennifer Yu, ScD[1], Kristen Rouspil, MPH[1], Harold S. Javitz, PhD[1], John R. Seeley, PhD[2], and Hill M. Walker, PhD[3]

Abstract

Although numerous studies address the efficacy of school-based interventions, fewer focus on how to support sustainability of interventions from the perspective of participants. To address this research gap, we use the Practical, Robust Implementation and Sustainability Model to examine how the characteristics of an evidence-based program interact with those of participants (i.e., students, parents, educators) to influence program implementation and continuation. Specifically, we consider lessons learned in one site of the national effectiveness study of *First Step to Success* which sustained implementation in a majority of participating schools after the study ceased. First, we analyze implementation fidelity and its effects on students' behavioral and academic outcome data. Then, we analyze focus group and interview data collected from participants 2 years after initial implementation to consider contextual factors associated with continued program success, including (a) the nature of the intervention, (b) the external environment, (c) implementation and sustainability infrastructure, and (d) participant characteristics.

Keywords

evidence-based interventions, elementary school, efficacy study, effectiveness study, sustainability of effects, fidelity of implementation

Federal funders such as the Department of Education, the Substance Abuse and Mental Health Services Administration, National Institutes of Health, and the Centers for Disease Control and Prevention require the use of evidence-based practices (EBPs) in many of their sponsored programs—as do many state and local education, mental health, healthcare, and social service agencies. As a result, over the past few decades, researchers have placed an increased focus on examining EBPs implemented in schools to improve academic and behavioral outcomes. Although demonstration studies may show positive results from these innovative programs, transferring successes across classrooms is a complex, challenging, and long-term process—with relatively few interventions sustained after their initial demonstration period (Rogers, 2003). In fact, research shows that it can sometimes take more than 20 years from the initial development of EBPs to adoption in mental health and school systems (Hoagwood, 2003; Institute of Medicine [IOM], 2007; Walker, 2004), with a lessening of efficacy typically reported as the diffusion process unfolds (Durlak & DuPre, 2008). Furthermore, some of the most effective preventative health programs found in research are often not the programs most commonly used in practice (e.g., Ringwalt et al., 2002; Wandersman et al., 2008). Reflecting on this paradox a decade ago, Hoagwood (2003) called for new models for crossing the boundaries between research of EBPs and real-world practice.

Since then, implementation science has grown in importance among funders and practitioners (Meyers, Durlak, & Wandersman, 2012), and researchers have proposed various models and frameworks of the process and contextual factors that can bridge the gap between science and practice. Collectively, the models articulate functions, systems, or structures (e.g., institutional policies; organizational leadership;

[1]SRI International, Menlo Park, CA, USA
[2]Oregon Research Institute, Eugene, USA
[3]University of Oregon, Eugene, USA

Corresponding Author:
Michelle W. Woodbridge, SRI International, 333 Ravenswood Ave., BS 124, Menlo Park, CA 94025, USA.
Email: michelle.woodbridge@sri.com

training and supervision) that must be in place to select, adopt, and implement EBPs successfully (e.g., Aarons, Hurlburt, & Horwitz, 2011; Damschroder et al., 2009; Elliott & Mihalic, 2004; Fixsen, Blase, Naoom, & Wallace, 2009; Fixsen, Naoom, Blase, Friendman, & Wallace, 2005; Kazak et al., 2010; Kretlow & Bartholomew, 2010; Meyers et al., 2012; Schoenwald & Hoagwood, 2001; Wandersman et al., 2008).

In all, the models articulate factors that facilitate high-quality classroom implementation of EBPs, such as obtaining buy-in from educators and students, building organizational capacity, monitoring implementation, and establishing feedback mechanisms. However, neither the models nor the research to date provides indisputable evidence as to why some programs become routine classroom practices while others erode over time. Furthermore, although some of the frameworks explicitly emphasize collecting participant feedback on effective and ineffective strategies, this signature characteristic appears only implicitly in most. As such, the models are limited in the extent to which they measure the ebb and flow of implementation fidelity as EBPs impart mixed reactions from teachers and varied outcomes from students.

In the last decade, an implementation framework emerged in the healthcare arena that provides considerations relevant to school-based mental health programs implemented within diverse populations and environmental contexts. The Practical, Robust Implementation and Sustainability Model (PRISM; Feldstein & Glasgow, 2008) uses concepts from diffusion of innovations (Rogers, 2003), the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework (Glasgow, 2002), and quality improvement (Institute for Healthcare Improvement, 2008) to assess how interventions interact with participants to influence program reach, adoption, implementation, efficacy, and sustainability.

Although originally designed as a public healthcare model, PRISM can be adapted to examine interventions and contextual factors that affect implementation and sustainability in the classroom (Fosco et al., 2014). Thus, from an educational research perspective, PRISM underscores four features critical for implementation success: (a) intervention characteristics from organizational (i.e., district, school) and participant (i.e., educator, student, parent) perspectives, (b) the external environment (e.g., district regulations, school policies), (c) implementation and sustainability infrastructure (e.g., teacher training and support), and (d) organizational and participant characteristics (see Figure 1).

For instance, PRISM addresses perceptions of the participants regarding their degree of readiness to implement the intervention, the adaptability of the program for use with specific populations, and the burden it places on participating teachers, students, and parents. PRISM also factors in how well the intervention strategies address the needs of the participating students and teachers, the degree to which the intervention protocol offers choices and performance feedback to participants, and the degree to which the intervention can be adapted to maximize outcomes.

According to PRISM, characteristics of organizations and participants are also key factors that influence implementation and sustainability of EBPs. From a systems perspective, characteristics that affect implementation include district and school leadership and data-based decision-making support. Impactful participant characteristics include knowledge and attitudes about the intervention, severity of student problem behavior, and classroom climate.

Study Purpose

The present study uses PRISM as the conceptual framework on which to understand how an innovative approach introduced to an organization's existing culture ultimately becomes a program that is accepted and sustained by its adopted organization. First, we confirm the effectiveness of the intervention through analysis of implementation fidelity and the program's impact on students' behavior and academics. Then, we examine qualitative data collected 2 years later to analyze how program characteristics interacted with participants' perceptions of social validity and feasibility to influence sustainability. The overarching goal is to learn to what degree a new but efficacious EBP—originally funded and supported by external grant funds—can take root in an urban public elementary school district beyond the grant cycle.

The Intervention: *First Step to Success*

First Step to Success (hereafter referred to as *First Step*; Walker et al., 1997) is a school-home EBP with a solid evidence base for achieving positive outcomes with behaviorally at-risk students in the primary grades (Beard & Sugai, 2004; Lien-Thorne & Kamps, 2005; Overton, McKenzie, King, & Osbourne, 2002; Sprague & Perkins, 2009; Walker et al., 2009). *First Step* has linked modular components including a classroom-based intervention and in-home parent education (known as HomeBase). Throughout implementation, a behavioral coach models the strategies in the classroom and delivers the in-home component, working closely with participating teachers and parents. Coaches are typically drawn from the ranks of school psychologists, counselors, behavioral specialists, and resource teachers.

The coach's focus is to support teachers and parents with developing skills to teach at-risk students positive replacement behaviors and to provide reinforcement appropriately and consistently. During the initial 5 days of implementation, the coach presents the student with a visual cue (i.e., a green-colored card) to indicate when he or she is academically engaged and displaying appropriate behaviors, and the student accrues points toward a behavioral goal. If earned,

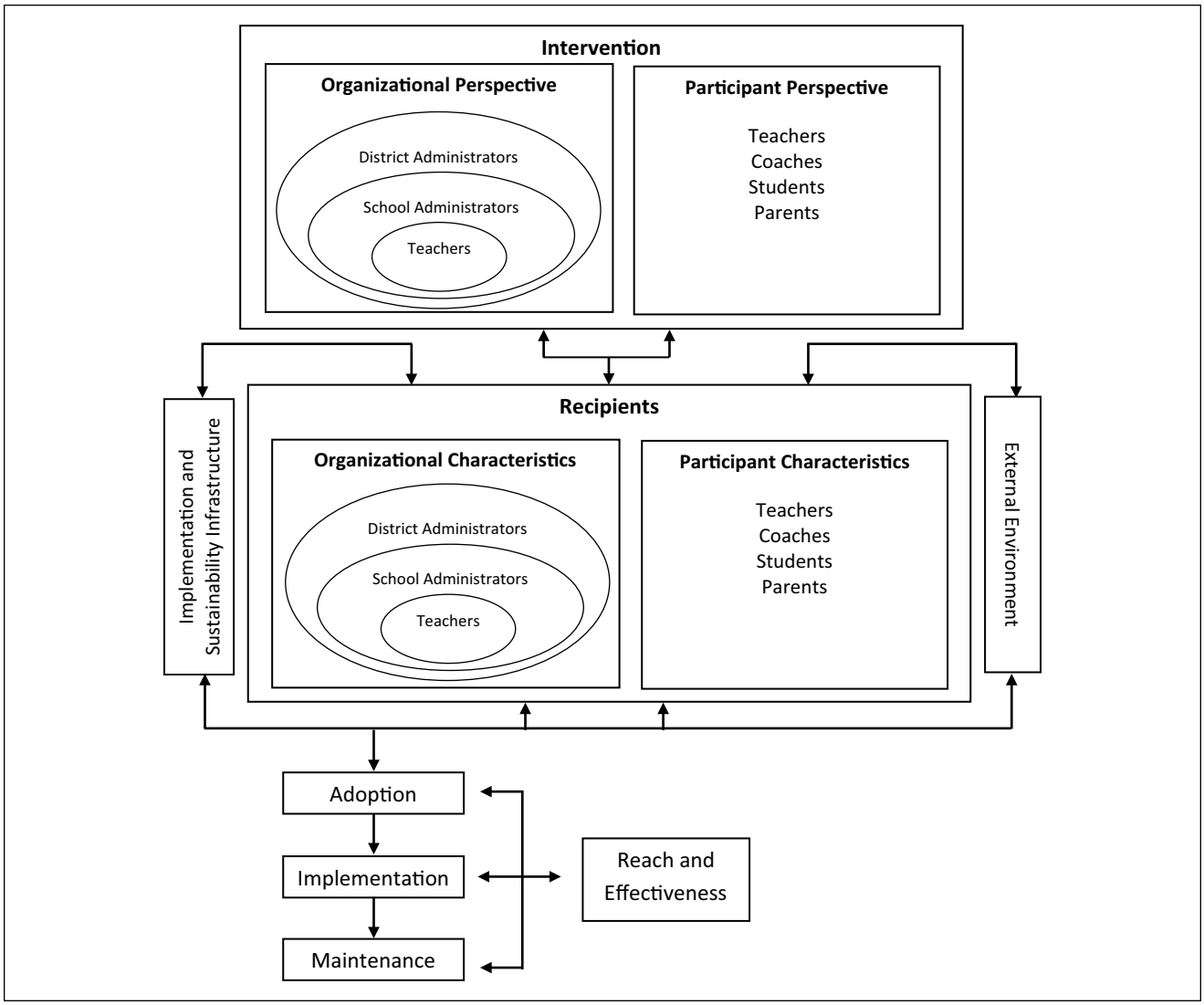

Figure 1. An adaptation of the Practical, Robust Implementation and Sustainability Model (PRISM).
Source. Adapted from Feldstein and Glasgow (2008, p. 230).

the student chooses an enjoyable activity for the whole class. Once familiar with these procedures, the teacher assumes control over the intervention, with close support from the coach. The teacher provides parents with daily progress reports and with encouragement to reward the student's positive behavior at home. The coach visits the student's home weekly to conduct HomeBase lessons with parents, designed to strengthen parenting skills and the home-school relationship.

The Case Study: *First Step* National Effectiveness Study's Chicago Site

From 2006 to 2010, a team of researchers (including this study's authors) conducted a national effectiveness study of *First Step* in 48 public elementary schools in districts of Chicago, Illinois; San Jose, California; Huntington, West Virginia; Eugene, Oregon; and Tampa, Florida. The findings from the national effectiveness study were published in an article that combined results across all five sites, and revealed a number of positive behavioral and academic outcomes for students with elevated risk for externalizing behavior problems who participated in *First Step* (Sumi et al., 2012). Despite these positive outcomes, it was unclear to the research team whether any of the sites would be able to maintain *First Step* after funding and the technical support from the effectiveness study had ceased. Consequently, when the research team followed up with each of the sites and discovered that *one* site alone—Chicago, continued to implement *First Step* in a majority of their schools 2 years

after the study concluded, the team felt it was important to understand what factors enabled the Chicago site to sustain the intervention despite competing priorities and challenges, and to what degree this intervention was implemented with fidelity.

Method

We present quantitative findings analyzed exclusively from the Chicago participants in the effectiveness study and original qualitative findings from the sustainability case study conducted 2 years after study conclusion, with methods of both studies described below.

Effectiveness Study Setting and Design

Ten schools (5 each randomly assigned to intervention and comparison groups) from two Chicago public school districts, collectively serving 8,200 students in Grades K–8, participated in the effectiveness study. More than half of the students in these districts were Hispanic (54%), 40% were Black, and the remaining were White (3%), Asian (1%), and mixed race (1.5%). About one quarter (24%) of students was limited English proficient, and approximately 70% resided in families with low incomes. A majority of full-time teachers in the participating districts were White (71%), 18% were Black, 11% were Hispanic, and less than 1% were Asian.

Participating students had elevated externalizing behavior problems (as rated by teachers on the Systematic Screening for Behavior Disorders [SSBD] procedure; Walker & Severson, 1990) and were in first through third grades. Researchers randomized students at the school level to minimize contamination that can occur with randomization at the classroom level. Overall, 66 Chicago-based students and their teachers participated in the effectiveness study (36 students and teachers in the *First Step* group; 30 students and teachers in the comparison group). Researchers collected data on implementation fidelity in the *First Step* group, and on student behavioral and academic outcomes for both groups at baseline and posttest, after the intervention group completed *First Step*. In the study's second year, 12 teachers from the original intervention group implemented *First Step* with new students, and researchers continued to collect outcome and fidelity data with this cohort for analysis in the present study.

Effectiveness Study Outcome Measures

Researchers used the following measures to assess student eligibility and outcomes. Additional information about procedures is available from Sumi et al. (2012).

SSBD. Teachers provided ratings of students' behavior using the nationally normed SSBD Adaptive Behavior Index (ABI, α = .82) and Maladaptive Behavior Index (MBI, α = .84; Walker & Severson, 1990).

Social Skills Rating System (SSRS). Teachers completed three subscales of the nationally normed SSRS-Teacher Version, which measured students' social skills (SSRS-SS-Teacher, α = .88), problem behaviors (SSRS-PB-Teacher, α = .85), and academic competence (SSRS-AC-Teacher, α = .91; Gresham & Elliott, 1990). Parents completed the SSRS-Parent Version, including the social skills (SSRS-SS-Parent, α = .88) and the problem behavior subscales (SSRS-PB-Parent, α = .88; Gresham & Elliott, 1990).

Academic Engaged Time (AET). Observers rated students' AET during two 15-min academic periods. The observation and scoring procedures mirrored those for SSBD Stage 3 (Walker & Severson, 1990). All observers were required to demonstrate and sustain a minimum .80 inter-observer agreement level before and during data collection. Reliability estimates were recorded for 33% of conducted observations, and observers were retrained as necessary throughout the study to minimize drift and ensure adequate reliability of recorded observations. The overall intra-class correlation (ICC) of AET inter-rater reliability was excellent, ICC(3, 1) = .80.

Woodcock–Johnson III (WJIII) Letter–Word Identification (LWI). Researchers administered the LWI subtest (α = .91) from the *WJIII Diagnostic Reading Battery* (Woodcock, Mather, & Schrank, 2004) to measure students' abilities to identify isolated letters and words.

Oral Reading Fluency (ORF). Researchers computed an ORF score based on the average number of words read correctly by a student in 1 min from two different 300- to 400-word first-grade level reading passages previously used in national studies (Fuchs, 2003).

Effectiveness Study Implementation Measures

Researchers collected the following measures of implementation in the *First Step* group.

Implementation Fidelity Checklist (IFC). Observers used the IFC (α = .94; Walker et al., 2009) to document the extent to which teachers delivered *First Step* components with fidelity. Observers rated adherence (*yes* or *no*) and quality of implementation on a 5-point scale (0 = *very poor*, 0.25 = *poor*, 0.50 = *okay*, 0.75 = *good, and* 1.0 = *excellent*) on three occasions, around program days 5, 10, and 15. The intra-class correlation assessing inter-rater reliability for one third of the observations was excellent, ICC(3, 1) = .94. Means of the adherence scores and quality ratings were combined to estimate overall classroom fidelity.

Classroom Monitoring Form (CMF). Teachers used the CMF (Walker et al., 2009) daily to document implementation of *First Step* and the students' attainment of daily behavioral goals. Classroom dosage was calculated as the proportion of program days delivered (out of 30 possible), and student compliance was calculated as the proportion of days when the number of points earned was equal to or greater than the number needed to earn the daily goal.

HomeBase Monitoring Form (HMF). Coaches used the HMF (Walker et al., 2009) to document the extent to which they perceived parents engaged in HomeBase on a 3-point scale. HomeBase dosage was calculated as the proportion of sessions (out of 6 possible) in which the parents participated. HomeBase mean dosage was combined with classroom mean dosage (measured on the CMF) to calculate overall *First Step* dosage. HomeBase mean fidelity was combined with classroom mean fidelity (from the IFC) to calculate overall *First Step* fidelity.

Sustainability Case Study Focus Group and Interview Participants

District administrators and the researchers met 2 years after completion of the effectiveness study to examine the implementation status of *First Step*. They consequently selected a group of educators to provide detailed perspectives about *First Step* sustainability successes and failures in focus groups and interviews. The 30 consenting participants included 2 district administrators, 13 behavior specialists (e.g., social workers, psychologists), 6 principals, and 9 teachers with varying experiences in implementation and sustainability. The individuals selected for the sustainability case study were based on a convenience sample dictated by participants' interest, willingness, and availability. However, the sampling was designed so that we had representation from educators, administrators, and specialists with a wide and varied range of experiences and opinions regarding *First Step.*

Researchers combined participants with similar roles into focus groups ranging in size from 5 to 8 participants, and conducted individual interviews with the 2 district administrators and 4 teachers (who had scheduling conflicts with the focus groups). Participants represented all 5 intervention schools and the 3 comparison schools who sustained *First Step*, and 5 non-study schools who implemented *First Step* following trainings provided to the district. The duration of each session was approximately 1 hr, and each participant received a US$50 gift card as compensation for their participation.

Sustainability Case Study Interview Procedures

Using an emergent approach to the case study design (Creswell, 2007), a team of researchers familiar with *First Step* practices and sustainability models developed collaboratively a semi-structured interview protocol. The protocol included questions that could be mapped to PRISM's contextual factors regarding organizational perspectives, recipient characteristics, and implementation and sustainability infrastructures. Specific questions included the following: (a) What factors influence continuation of *First Step* in your school/classroom? (b) What adaptations have you made to the program? (c) What additional supports are offered to students in your school who may need more intensive intervention? (d) What impact did *First Step* have on the students, teachers, and school? (e) What supports would be needed to continue *First Step*?

Throughout the design and data collection phases, the research team abided by quality indicators of qualitative research as described by Brantlinger, Jimenez, Klingner, Pugach, and Richardson (2005). Interview questions were clearly worded with no leading questions, and informed consent was obtained prior to conducting interviews. In addition, recognizing that researchers' unique perspectives may result in varying interpretations of the content of the qualitative data (Creswell, 2007), several researchers took detailed notes to triangulate data findings. Notes included illustrative quotes and examples shared, and researchers later transcribed audio recordings of the interviews to complete any gaps in the notes and fortify the collection of verbatim quotes.

Data Analysis

Quantitative analysis of intervention effects. We performed hierarchical linear modeling (HLM) regressions to estimate intervention effectiveness in Chicago schools. The dependent variables were measures of student academic abilities, pro-social skills, or behavior as measured by the AET, ORF, and WJIII, and teacher and parent reports (i.e., ABI, MBI, SSRS-Teacher, SSRS-Parent). The independent variables included a constant, the baseline measure for the dependent variable, and a group indicator. Levels in the model were student and school, with additive random effects for each. Results from the HLM models were combined using the Stata MIM procedure that implements Rubin's method (Rubin, 1987), and we applied the Benjamini–Hochberg (BH) correction for Type 1 error rate to the 10 univariate tests (Schochet, 2008).

For any given test, the reported p value was the smallest False Discovery Rate (FDR) value for which the corresponding null hypothesis was rejected. We reported effect sizes as Cohen's d statistic (Cohen, 1988), calculated by dividing the intervention indicator coefficient by the pooled between-student standard deviation at posttest. We obtained the latter by using an HLM regression in which the dependent variable was the outcome at posttest, the independent variables were a constant and the intervention indicator, and

Table 1. Means and Standard Deviations for Baseline and Posttest Outcome Measures and HLM Results.

	Intervention (n = 36)		Comparison (n = 30)				
Domain/Measure	Baseline M (SD)	Posttest M (SD)	Baseline M (SD)	Posttest M (SD)	Treatment coefficient (SE)	p[a]	d
Pro-social behavior							
SSBD-ABI	32.8 (7.1)	39.7 (8.9)	32.7 (7.1)	32.7 (9.9)	7.3 (2.7)	.01	0.80
SSRS-SS-Teacher	80.3 (10.4)	93.7 (14.2)	81.2 (13.0)	81.6 (14.6)	13.5 (3.6)	.00	0.95
SSRS-SS-Parent	91.8 (15.2)	98.2 (16.0)	92.8 (16.4)	92.7 (16.1)	7.5 (3.6)	.04	0.48
Problem behavior							
SSBD-MBI	34.2 (7.1)	27.1 (9.1)	31.4 (8.4)	30.6 (9.0)	−4.8 (2.6)	.06	−0.53
SSRS-PB-Teacher	119.7 (10.3)	112.8 (12.9)	122.2 (12.0)	120.8 (11.0)	−6.6 (3.2)	.06	−0.55
SSRS-PB-Parent	114.0 (13.3)	105.6 (13.1)	108.9 (12.1)	110.6 (12.6)	−9.1 (3.2)	.02	−0.72
Academics							
SSRS-AC-Teacher	89.7 (11.8)	90.7 (11.2)	83.0 (10.2)	80.7 (9.3)	4.4 (1.7)	.04	0.43
AET	.67 (.18)	.69 (.20)	.60 (.24)	.68 (.23)	.01 (.05)	.79	0.06
WJIII	99.2 (14.1)	100.8 (13.0)	95.0 (13.3)	97.8 (13.4)	−0.7 (2.0)	.79	−0.06
ORF	53.8 (35.6)	65.9 (36.4)	45.0 (33.5)	55.9 (37.9)	4.6 (3.0)	.26	0.13

Note. HLM = hierarchical linear modeling; SSBD = *Systematic Screening for Behavior Disorders*; ABI = Adaptive Behavior Index; SSRS = *Social Skills Rating System*; SS = Social Skills subscale; MBI = Maladaptive Behavior Index; PB = Problem Behavior subscale; AC = Academic Competence subscale; AET = Academic Engaged Time; WJIII = *Woodcock–Johnson III Diagnostic Reading Battery Letter–Word Identification subtest;* ORF = Oral Reading Fluency (words per minute).

[a]p value after applying the Benjamini–Hochberg correction for multiple comparisons.

there were random additive effects for student and school. Additional analytical details have been reported by Sumi et al. (2012).

Qualitative analysis of follow-up focus groups and interviews. To produce a detailed case study that illustrates the collective opinions and personalized experience of various *First Step* participants, researchers conducted semi-structured interviews with teachers, behavior specialists, and school and district administrators. Inductive content analysis was based on triangulation of data from multiple sources (i.e., detailed notes from three researchers, audiotape transcriptions) to enhance credibility of the qualitative research (Brantlinger et al., 2005).

Four members of the research team independently reviewed and annotated interview passages according to thematic frameworks, comparing and contrasting participants' responses related to interview topics, namely, the facilitators and barriers to implementation, the extent of participant engagement, and factors contributing to sustainability. Researchers then systematically sorted and coded these data into general subthemes, documented verbatim quotes where participant language was particularly illustrative, and searched for patterns and connections. In a debriefing session where all researchers shared their independent findings, a group consensus process established the final data summaries by synthesizing key characteristics and weighing the salience of the data based on the multiple perspectives of the respondents.

Effectiveness Study Results

Intervention Fidelity

Adherence to *First Step* in Chicago was satisfactory: Teachers implemented a majority of procedures (M = .79, SD = .19), with classroom quality in the *good* to *excellent* range (M = .76, SD = .17). Students participated in a majority of *First Step* program days (M = .85, SD = .24), and parents participated in most HomeBase sessions (M = .79, SD = .34). These results mirror implementation findings across all study sites (Sumi et al., 2012).

Intervention Effects

We examined intervention effects at posttest in three domains: (a) pro-social behavior (i.e., ABI, SSRS-SS-Teacher, and the SSRS-SS-Parent), (b) problem behavior (i.e., MBI, SSRS-PB-Teacher, and SSRS-PB-Parent), and (c) academics (i.e., SSRS-AC-Teacher, AET, WJIII, and ORF). We used the BH procedure to control an FDR at posttest at the .05 level within each domain. Similar to the overall effectiveness study findings (Sumi et al., 2012), data demonstrated that *First Step* participants in Chicago had significantly higher pro-social skills and significantly fewer problem behaviors than comparison students at posttest (Table 1).

Pro-social behavior domain. Results indicated positive effects for SSRS-SS subscales rated by teachers ($p < .01$; $d = 0.95$)

and parents ($p = .04$; $d = 0.48$), indicating significant impact on students' social skills. *First Step* students also significantly increased their adaptive behaviors as measured by the ABI ($p = .01$; $d = 0.80$) beyond comparison group peers.

Problem behavior domain. Parents of *First Step* students reported a significant reduction in problem behaviors on the SSRS-PB-Parent ($p = .02$; $d = -0.72$). Although teachers reported declines in problem and maladaptive behaviors, there were no statistical differences between groups on the SSRS-PB-Teacher ($p = .06$, $d = -0.55$) or MBI ($p = .06$, $d = -0.53$) scales.

Academic domain. Chicago teachers perceived that *First Step* students had significantly greater academic competence, as measured on the SSRS-AC ($p = .04$; $d = 0.43$). However, the two groups did not differ significantly on the ORF ($p = .26$; $d = 0.13$), AET ($p = .79$; $d = 0.06$), or the WJIII measure ($p = .79$; $d = -0.06$).

Relationship Between Fidelity and Outcomes

Analyses were performed to determine whether Chicago students whose teachers implemented *First Step* with higher fidelity achieved better outcomes than students whose intervention was delivered with lower fidelity. We conducted HLM regressions where the dependent variables were the posttest outcomes, and the independent variables were the baseline values, a constant, a group indicator, and the product of the group indicator and fidelity measure.

Classroom fidelity and outcomes. We normalized average ratings from teacher IFCs to have a mean of zero and unit variance for *First Step* students (defined as zero for comparison group students). Three of the 10 outcome measures at posttest had statistically significant fidelity effects (adjusted for multiple tests) on intervention effectiveness, all of which were on teacher-reported measures (i.e., ABI, MBI, and SSRS-SS-Teacher). A one standard deviation increase in classroom fidelity increased the intervention effect on ABI by 0.29 ($p = .01$) and on SSRS-SS-Teacher by 0.25 ($p = .04$), and decreased MBI by 0.27 ($p = .04$).

Classroom dosage and outcomes. Analysis indicated that a higher dosage of intervention days (as measured by the CMF) delivered successfully in the classroom was associated with higher academic engagement (as measured by AET). A one standard deviation increase in classroom dosage increased the intervention effect on AET by 0.54 ($p < .01$).

HomeBase fidelity and outcomes. Analysis indicated that a higher dosage of HomeBase sessions (as measured by the HMF) was associated with higher AET. A one standard deviation increase in HomeBase dosage increased the intervention effect on AET by 0.36 ($p = .01$).

Interview and Focus Group Results

The interviews and focus groups conducted with *First Step* implementers in Chicago provided valuable information about barriers and facilitators to sustainability. Data are organized under four contextual factors considered in PRISM as critical for implementation success: (a) the nature and design of the intervention from participant perspectives, (b) the external environment, (c) implementation and sustainability infrastructure, and (d) participant characteristics.

Participants' Perspectives on the Nature and Design of First Step

Is First Step *overly complex or burdensome to continue implementation?* To sustain as a routine practice, an intervention must be embedded in a school's behavior ecology and fit well with its leadership structure, context, culture, and work flow. When asked to what degree *First Step* "fit" in the school and classroom environments, participants had mixed reactions.

Coaches believed that the *First Step* program was effective, systematic, and well-scripted, and teachers could continue implementation without undue burden. In addition, they agreed that HomeBase sessions provided parents with adequate materials to engage and participate in the program successfully. Despite Chicago's general success in sustaining implementation in a majority of schools and classrooms, most coaches described continuation of the program as "situational" or "selective," asserting that *First Step* was reserved for serious behavioral issues requiring intensive Tier 2 intervention. They believed educators had difficulty justifying the investment of 3 months of effort with one student given the demands of an entire classroom.

When teachers shared their views about the burden of *First Step*, the general consensus was that the program could be easily incorporated into their regular class schedule; however, the time commitment was extraordinary. Teachers believed the time factor was particularly challenging in schools lacking administrative support for the program; for instance, one principal resisted any deviation from instructional time, such as dispensing classwide rewards. Teachers recognized that their burden was mitigated by collaboration with coaches; those with positive working relationships expressed fewer barriers. In one instance, a teacher described how working with the student's behavior coach allowed them to come up with "higher goals and appropriate rewards" for a student. In contrast, a teacher who described her support from the

coach as "inconsistent" also admitted to feeling "forced to make *First Step* look like it was working."

Although administrators recognized how the coaches' support reduced their teachers' burden and increased their likelihood to sustain *First Step*, a principal cautioned that program adoption ultimately rested on individual teachers. He suggested, "I think you really need to think about who you have trained in the program. Who is a natural fit? It won't work for every teacher." When asked to characterize typical teachers who were likely to sustain *First Step*, participants described those who were young, motivated, and open to progressive techniques. Interns, for example, seemed especially eager and knowledgeable about EBPs and the importance of early intervention. In contrast, veteran teachers were viewed as less receptive, primarily because they had seen "many programs come and go" without proper support.

Does First Step *provide participants with feedback?* Participants agreed that one of the greatest attributes of *First Step* was that it provided them with opportunities to observe successes and challenges and adjust the program accordingly. Students earned points toward daily goals, parents received daily progress reports, and educators observed classroom behavior changes.

Teachers and administrators acknowledged immediate positive impacts, such as students' increased self-esteem and fewer classroom disruptions. One principal observed, "I knew it worked when I didn't see [*First Step* students] in my office anymore." District staff confirmed, "After *First Step*, the number of referrals was down. We looked at data by the week and by the month, and provided a copy for the teacher, principal, and parent." Moreover, coaches described their personal sense of accomplishment from the early and meaningful changes they helped instill. "We don't get many chances to stick our chests out or be proud of what we do," stated one coach. "*First Step* was the first time I felt that way. I saw something work for these kids."

External Environment

How do school policies and resources impact First Step *sustainability?* Illinois and its school districts faced serious budget cuts with concomitant pressure to improve test scores; as a result, participants recognized other priorities competing for limited resources. District staff was committed to *First Step*, but the level of administrative and teacher support varied by school. Principals' reluctance was mainly due to mounting pressures to focus on issues such as increased class size, Response to Intervention (RtI) implementation, and serious discipline issues (e.g., weapons, drugs, gangs). While some teachers enthusiastically endorsed *First Step*, others believed the program competed with incongruent pressures to improve annual progress.

In the wake of pressure from the increasing impact of high stakes testing, administrators acknowledged their resorting back to "crisis" or "survival mode." Educators were more comfortable using *familiar* programs with at-risk students instead of strategically selecting and coordinating EBPs and innovations likely to produce effects. Principals admitted that proactive programs like *First Step* could sometimes be viewed as "dispensable," with school staff unwilling, unready, or too set in their ways to commit continued support.

Still, in the context of early intervention, district staff recognized an opportunity to condone continued implementation of *First Step*. They acknowledged that *First Step* could be marketed as a behavioral approach firmly grounded in the RtI framework, and subsequently, administrators should become more accepting of the program. When asked to characterize the typical school willing to sustain implementation, participants described sites integrating systemic behavioral interventions into their RtI systems. Indeed, a school administrator explained, "As more district staff see the program work—and *First Step* is part of the RtI program—it will be an easy transition to *First Step*." However, in schools that relied heavily on punitive consequences (e.g., suspensions, expulsions), participants believed *First Step* would probably erode over time.

Implementation and Sustainability Infrastructure

Does First Step *bring a dedicated implementation and sustainability team?* District staff confirmed that they had a team of coaches dedicated to support implementation of *First Step*, but they believed the program needed further promotion to increase schools' adoption. They suggested that newsletter articles, videos, and presentations should explicitly demonstrate how *First Step* fits into RtI and routine classroom practices, and highlight teachers' successes. Teachers and principals encouraged the district to champion the cause—provide coordination, annual trainings, and technical assistance for all teachers implementing *First Step*. A district administrator confirmed, "We need someone to champion the cause and keep it on the surface."

Did First Step *require adaptations to be sustainable?* In general, teachers who continued to implement *First Step* did so with fidelity; they described using few modifications or adaptations in the program. One reason teachers noted that adaptations were unnecessary was because *First Step* allowed for a certain degree of flexibility in its delivery. For instance, one teacher described how she delayed the phasing out of a visual cue (i.e., a red-colored card) with her student who continued to need prompting to be successful; whereas another teacher described the use of an alternate, less distracting cue (i.e., pointing to her nose) that resulted in less emotional reactions and behavioral outbursts from

her participating student. The program's framework permitted this malleable and iterative implementation process based on a teachers' and coaches' organic appraisal of students' successes and needs. For this reason, implementation staff described their commitment to stay true to the integrity of *First Step*.

Participant Characteristics

What are needs of educators that First Step *addresses?* A majority of teachers shared that due to *First Step*, they were more consistent in classroom management, aware of their proportion of positive and negative responses to students, and confident in their ability to address behavior issues. One teacher acknowledged, "I had a student in my classroom I had exhausted all other options with, and I needed to do something that could help him stay in school. Doing *First Step* helped me and him get through the day." Teachers' use of visual cues (instead of verbal cues) to redirect behavior had also increased, reducing disruptions to instructional time and negative impacts on classroom climate. Teachers also appreciated having other colleagues to turn to for problem solving and encouragement.

Administrators recognized that *First Step* changed their staff's style of interaction with students and parents in simple but compelling ways. As the district coordinator noted,

> I have seen big changes in the coaches . . . Initially they thought the only way these students would respect them would be to be punitive, because nothing else has worked for them. *First Step* showed them you don't need to take that approach, and you can see positive results.

Coaches agreed, with one describing his success thus,

> When the program was first brought to our attention I thought it wasn't going to work–walking around with a green card trying to get kids to stay in order? But the program actually *did* work, and it isn't easy to work with these kids!

What are needs of students and families that First Step *addresses?* *First Step* taught students how to self-correct and monitor their behavior. Teachers acknowledged that students were more confident and capable of positive behavior—they spent less time vying for negative attention, and showed more enthusiasm for school. Furthermore, classmates encouraged *First Step* students to behave appropriately; they provided positive reinforcement and built more friendships. In fact, one teacher recognized that "attitudes about the target student changed completely. Kids were more supportive of the student and wanting to help him behave better. The whole class would cheer for the student when he did something good!" A principal agreed, describing "A little boy in one class was having a hard time making friends, and all of a sudden, the students in the class were cheering for him. That peer support was really nice to see."

In general, *First Step* students thrived in environments where teachers and classmates recognized their positive behaviors and offered immediate attention and rewards. However, participants also cited negative experiences with particular students who were "ill-matched" to the program: those who were hyperactive, overly emotional, unable to express themselves, and/or averse to attention and recognition.

Participants reported that teachers, students, and parents worked together in *First Step* to improve behavioral challenges while assigning less blame toward one another. Coaches and teachers increased their communication with parents, with phone calls and meetings focusing on both positive and negative issues. Coaches believed that parent–child quality time increased; however, one administrator voiced concern that parents could be barriers to *First Step* success. He explained, "They come in and sign the paperwork, but they don't do the home requirements."

Still, coaches felt that *First Step* provided the optimum opportunity for educators to build trusting and collaborative relationships with parents and overcome this barrier. A coach explained, "You have to coach the parent to be a parent . . . Parents have no trust, but after the visits to their homes, they see you have nothing in your bag that is going to hurt them." Coaches recognized that eliciting parent participation and engagement in the program required coaches to be patient, consistent, non-judgmental, honest, and persistent in their relationship building.

Discussion

As described in the introduction to this special issue, educators should consider the degree to which classroom management practices address behavioral, ecological, and social interactional dimensions in ameliorating disruptive behavior problems. As a secondary intervention, *First Step's* behavioral components emphasize managing antecedents and consequences to elicit desired behavior from at-risk students while withholding reinforcement for their problem behaviors. The program also capitalizes on the student's peer group, classroom interactions, and social status as positive influences on behavior. Finally, key to the success of *First Step* is its overarching ecological perspective, viewing the student from multiple contexts including as an individual as well as a member of a peer group, classroom, and family.

Implications for Practice and Professional Development

The goal of this study was to use PRISM as the conceptual framework on which to understand how *First Step*

transitioned from an unfamiliar intervention introduced by an outside source, to a program generally accepted and sustained by its adopted organization. Chicago-specific perspectives about *First Step* shared in this sustainability case study can likely generalize to understand sustainability challenges of any EBP to ameliorate disruptive behavior and manage the social dynamics in urban and suburban classrooms across the nation.

To convince intervention implementers to sustain a program first requires compelling evidence of its effectiveness. Researchers unequivocally demonstrated that Chicago schools' participation in *First Step* was associated with improvements in their students' pro-social skills and reductions in problem behaviors. Furthermore, teachers' higher implementation fidelity was associated with greater student gains, and teachers' delivery of higher dosage of *First Step* was associated with students' greater academic engagement. Although quantitative findings were persuasive, the sustainability of *First Step* was dependent on other factors—specifically the perceptions of intervention participants at both the individual and organizational levels.

Chicago participants shared experiences and lessons learned from their initial years of *First Step* implementation. Educators advocated for a supportive infrastructure including high-quality, easily accessible training and regular technical assistance in the classroom. Participants recommended that teachers and students have access to the consistent support of a mentor or coach, who can encourage engagement in the EBP, problem solve about daily behavioral issues in the classroom, and provide immediate feedback about participant successes and challenges. As the teacher professional development literature shows, the impact of coaching on teachers' ability to apply knowledge and skills in the classroom is significant (Joyce & Showers, 2002).

The work that teachers and coaches do together in the classroom must be sanctioned and supported by the school's leadership, and participants overwhelmingly suggested that it was their administrators' responsibility to champion the adoption and use of innovative EBPs such as *First Step*. In doing so, teachers believed it was critical for administrators to communicate explicitly to their teachers about how the EBP can be complementary with other school policies and early intervention frameworks in use, such as RtI, or schoolwide universal interventions, such as Positive Behavior Interventions and Supports (PBIS).

Participants also acknowledged that a secondary intervention such as *First Step* requires that teachers be willing to invest in an approach focused on *one* selected child in their classroom while simultaneously enlisting the support of that student's classmates and parents. Furthermore, a chief characteristic of a student recognized as most suitable for and successful in *First Step* was a positive response to teacher and peer attention and praise for appropriate behavior. In effect, participating teachers recommended not only considering externalizing behavior screening results to determine eligibility, but also a student's motivation and response to reinforcement contingencies. Recent work has demonstrated the additive impact of a functional behavioral assessment and an individualized function-based support plan combined with core components of *First Step* to identify the function of students' problem behavior, adapt the intervention accordingly, and achieve efficient and efficacious results (Carter & Horner, 2009).

Participants emphasized that educators must address misconceptions parents may have about early intervention ultimately leading to their children's placement in special education, engage parents in home-school activities, and routinely communicate with them about students' successes and challenges in the classroom. The family involvement literature cautions educators about a "cultural collision" that can result from parents' disengagement with the school system (Defur, Todd-Allen, & Getzel, 2001, p. 21). To gain parents' involvement in their children's education depends on enhancing their *attitudinal* engagement—such as their perception of the benefit of early intervention, and *behavioral* engagement—such as performing tasks to support children's learning (Staudt, 2007), all of which are core constructs of HomeBase.

Finally, given the significant impact of implementation fidelity on student behavioral and academic outcomes, it is imperative that participants document, examine, and continuously communicate about EBP adherence, quality, and dosage over the course of program delivery.

Future Research Needs

The quantitative and qualitative findings from these studies should be viewed with some caution. First, although researchers used a variety of validated instruments to measure student outcomes, a majority were based on teacher and parent reports, which may allow for potential bias. Second, our case study interviewees originated from a convenience sample of educators who had experience implementing *First Step*. Selected respondents represented a wide range of implementation experiences, but their perspectives and experiences may not be representative of the all *First Step* participants. Third, although Chicago provided rich data on factors impacting sustainability, it may have been equally informative to examine sites unable to sustain *First Step.* By limiting our case study to one site that continued implementation, we may have limited our opportunity to provide an understanding of other factors that affect *First Step* sustainability.

Nonetheless, results reveal important considerations for EBP sustainability and a future research agenda. For instance, studies should specifically assess the degree to which implementation strategies (such as classroom

technical assistance) impact fidelity and resulting student outcomes. Schools need to know the minimal level of support required to maintain fidelity and effects, and the necessary qualifications of technical assistance providers.

Carefully designed studies also could potentially identify how specific student behavioral factors (e.g., whether students seek attention or avoidance) and teacher characteristics (e.g., willingness to implement innovative programs) are associated with implementation fidelity and resulting outcomes. In a similar vein, we believe it is important to investigate whether different implementation threshold levels exist for individual participants to achieve positive results. In this way, future research may reveal the extent to which trainers can engage skeptical or resistant teachers and parents in less prescriptive and more adaptable implementation methods.

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