

## **Blueprints for Violence Prevention Process Evaluation of the LifeSkills Training Drug Prevention Program: Factors Related to Implementation Fidelity**

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## **Abstract**

### **Background**

Widespread replication of effective prevention programs is unlikely to affect the incidence of adolescent delinquency, violent crime, and substance use until the quality of implementation of these programs by community-based organizations can be assured.

### **Methods**

This paper presented the results of a process evaluation, using qualitative and quantitative methods, focused on identifying the extent to which 432 schools in 105 sites were able to implement the LifeSkills Training (LST) drug prevention program with fidelity. Regression analysis was used to examine four dimensions of fidelity: adherence, dosage, quality of delivery, and student responsiveness.

### **Results**

Although most sites faced common barriers, such as finding room in the school schedule for the program, gaining full support from key participants (including site coordinators, principals, and LST teachers), ensuring teacher participation in training workshops, and classroom management difficulties, schools involved in the project implemented LST with very high levels of fidelity. Across sites, 86% of program objectives and activities required in the three-year curriculum were delivered to students, teachers were observed using all four recommended teaching practices, and 71% of instructors taught all the required LST lessons. Multivariate analyses found that highly rated LST program characteristics and better student behavior were significantly related to a greater proportion of material taught by teachers (adherence). Instructors who rated the LST program characteristics as ideal were more likely to teach all lessons (dosage). Student behavior and use of interactive teaching techniques were positively related (quality of delivery). No variables were related to student participation (student responsiveness).

## **Conclusions**

Although difficult, high implementation fidelity by community-based organizations can be achieved. This study suggests some important factors that schools should consider to ensure fidelity, such as selecting programs with features that minimize complexity and time necessary to teach, while maximizing flexibility. Student behavior also impacts program delivery, so schools should train teachers in the use of classroom management skills. This project involved comprehensive program monitoring and technical assistance that likely facilitated the identification and resolution of problems and contributed to the overall high quality of implementation. Schools should not discount the importance of providing training and technical assistance to ensure quality program delivery.

## **Background**

The recent focus of delinquency prevention efforts has been finding and replicating effective research-based programs; that is, programs that have been rigorously tested and achieved positive results in the prevention or reduction of delinquent behavior and substance use. Several programs have emerged as exemplary in meeting these criteria and been placed on government and private agency “what works” lists for entities seeking to implement them [1-6]. Once an organization chooses a model program, they expect to achieve participant changes similar to those found in research trials, contingent upon being able to implement the program with integrity to the designed model.

What is missing from this formula, and what has become increasingly more important in prevention research [7-9], is how exactly the programs go from package to process, and how to ensure that these effective programs, once immersed in “real world” settings, are implemented as intended. Although a growing area of study, program implementation--including adherence to critical components, methods of delivery, and program dosage--has been relatively neglected in the prevention research literature [10-13]. Particularly lacking are studies that describe in detail how well programs are implemented and what factors inhibit or promote success [14-17].

### **Implementation Fidelity of School-based Prevention Programs**

Schools are an ideal environment for widespread dissemination of successful delinquency prevention programs, as they contain a universal target population and available program facilitators. As a result, many program developers have designed and tested prevention programs that take place in school settings, and many of these programs have demonstrated evidence of positive outcomes for students [18-20].

While schools now have more choices regarding evidence-based programs that meet their needs, once programs are selected, implementation success is not guaranteed. In fact,

the National Study of Delinquency Prevention in Schools demonstrated great variability in the implementation of school-based prevention programs, with prevention activities failing to be implemented with sufficient strength and fidelity to produce a measurable difference in the desired outcomes [21]. In this study, only half of drug prevention curricula and one-fourth of mentoring programs met dosage requirements, in that schools offered fewer and less frequent sessions than were specified by program developers. Moreover, only half the programs were taught in accordance with the recommended methods of instruction. Hallfors and Godette's [22] national assessment of school-based prevention programming also demonstrated significant deviations in program implementation, with schools frequently operating with untrained teachers, without the required materials, and with misspecification of the population to be served (e.g., targeting high-risk students with universal programs). Only 19 percent of all school districts surveyed faithfully implemented effective prevention curricula.

These findings contrast with research trials that reported high rates of implementation fidelity [23-28]. For example, a program evaluation of the LifeSkills Training program demonstrated that instructors taught two-thirds (68%) of the program objectives, utilized recommended teaching practices, ensured adequate program dosage (i.e, teaching all lessons with the recommended length and frequency of delivery), and made few major alterations to the curriculum [23]. Likewise, an evaluation of the Early Alliance program demonstrated that program staff taught 80% of the required material, on average [25].

The less successful results found in community-based replications suggest that variability in fidelity increases when programs are widely disseminated [29, 30]. When implementation suffers, communities are less likely to achieve the anticipated benefits of the program. In fact, there is evidence that some programs *only* work when implemented with a high degree of fidelity, and other research suggests that closer adherence to core components results in stronger participant outcomes [23, 28, 31-36].

## **Factors Promoting Implementation Success**

As programs become more widely disseminated, the need to identify factors promoting or inhibiting implementation quality becomes essential. Much of this research has been exploratory, typically based on process evaluations and qualitative evidence [37]. Nonetheless, several factors have been identified as associated with implementation fidelity, including in-depth training for program implementers, strong support from key participants, characteristics of the program itself, and comprehensive implementation monitoring.

Training of staff is critical for success, in that it provides the knowledge and skills needed to implement the program, fosters support and commitment to the program, and communicates the importance of program fidelity [38-42]. Booster trainings can help ensure continued program involvement, rekindle commitment where needed, and ensure that implementers are continuing to deliver the program elements with fidelity [39, 43]. Studies have demonstrated a relationship between teacher training and greater implementation fidelity [38, 44, 45], and better student outcomes [46-48].

It is essential that program staff at all levels of implementation provide strong support for a newly chosen program. At the top level, the project director or coordinator champions the program replication from its inception and throughout implementation. Program success is strongly influenced by the commitment displayed by the site coordinator, who advocates for the program, ensures that program protocols are in place, and identifies and helps resolve implementation problems [39, 40, 49-51]. School administrators must also back the program, by agreeing to adopt the initiative, making needed resources available, garnering initial staff “buy-in” to the values and ideals of the program, and exerting strong, continuous pressure for implementation [40, 43, 51]. Success or failure of school-based programs may ultimately rest with its teachers. In order to support a program that utilizes valuable class time, teachers must

believe the program is worthwhile, have a sense of ownership for it, encourage each other's implementation, and feel supported by school administrators [39, 41, 52].

Specific program characteristics can also impact the quality of implementation. Program complexity and structure have been associated with successful delivery, with programs that have clear goals and procedures being easier to implement and less likely to result in deviation [40, 49, 52, 53]. Having a set curriculum with activities that are viewed as relevant, attractive, and easy to use also enhances program adoption [42, 48], helps provide a clear program structure, and may reduce deviations from the intended content. Integration into the school system, particularly finding a regular class for programming, is important for adoption, implementation, and sustainability [40].

Finally, on-going and rigorous program monitoring has been associated with implementation success [25, 28, 32, 54, 55]. An evaluation of the Early Alliance program attributed high levels of implementation adherence to program monitoring protocols, which included intensive staff training, implementers' self-reports of content taught each session, weekly staff supervision, and other technical assistance from research staff [25]. In contrast, an evaluation of the Multisystemic Therapy (MST) model indicated more program drift and greater therapist variability when standard weekly feedback from MST consultants was eliminated [32]. Likewise, an attempt to disseminate the LifeSkills Training program in Kentucky [56] reported that only half of teachers who received training later taught lessons, which the authors attributed to a lack of oversight by state and local school administrators.

In summary, prior literature has described mixed evidence regarding the extent of implementation fidelity of school-based prevention curricula, with some research trials documenting high levels of implementation fidelity, and community-based replications typically achieving far less success. Though some factors related to implementation quality have been identified, very little is known regarding how program activities actually take place

during replications, what specific challenges are faced, and how these problems can be overcome [57]. These are all relevant issues for communities interested in replicating evidence-based programs and more information can help guide future efforts and increase the likelihood that communities will satisfy program requirements.

The Blueprints Initiative, funded by the Office of Juvenile Justice and Delinquency Prevention [2], was designed to accomplish these goals. Blueprints model programs have been held to the highest standard of scientific testing and controlled program replication, and the Blueprints Initiative examined how these programs were replicated in multiple, naturalistic settings. Earlier findings [54, 58] identified factors likely to relate to implementation as including program support and commitment among administrative and implementing staff, training and technical assistance, specific elements of the program itself, and characteristics of the adopting organization.

The current paper expands upon earlier published findings [54] regarding the process evaluation of model program, the LifeSkills Training (LST) school-based drug prevention curriculum. The previous results were based upon replication of LST in 70 sites (292 schools) across the United States. Primarily descriptive data were analyzed in order to determine the extent to which schools replicated the LST curriculum with strong adherence to the model, identify problems faced during implementation, and describe the steps taken to overcome these challenges. After two years of implementation, teachers were observed to have taught 81 to 86% of the required LST objectives and activities. Implementation factors that were significantly correlated with higher rates of implementation fidelity included the support and ability of the local coordinator, and observations that teachers spent much time using didactic instruction (though this measure was also correlated with worse student behavior and less student participation in lessons). Variables significantly related to teaching all the lessons

(i.e., program dosage) included teachers' overall rating of the program and quality of the materials.

The current paper summarizes results from the complete LST replication project. We describe implementation outcomes for the full sample of 105 sites (432 schools) after replication of the entire three-year curriculum in all sites. In addition to providing a descriptive analysis of implementation fidelity results (including challenges faced and overcome), we use multivariate analysis to demonstrate predictors of four primary elements of implementation fidelity (adherence, dosage, quality of delivery, and participant responsiveness). Four research questions are addressed:

- 1) Did the LST program reach the intended, universal population of middle school students?
- 2) To what extent was the program implemented with fidelity; that is, covering the majority of information and activities in each lesson, delivering all the lessons, using varied teaching techniques, and engaging participants?
- 3) What factors were associated with these four aspects of implementation fidelity?
- 4) What obstacles and barriers were encountered during implementation, and how were they addressed?

## **Methods**

### **The LifeSkills Training Initiative**

The LST process evaluation was conducted by the Center for the Study and Prevention of Violence (CSPV), with assistance from National Health Promotion Associates (NHPA), Inc, the providers of the LST curriculum, and their cadre of certified LST trainers. Site selection occurred from 1999 to 2001, with the final sample including 105 sites and 432 schools. Sites were comprised of one to 24 schools, and sometimes included multiple school districts. Sites were located in urban, suburban, and rural areas and served students of varying

socioeconomic status and racial/ethnic backgrounds. (See the Addendum for more information regarding sites and schools participating in the project.)

The LST Program is a school-based, universal program designed to prevent tobacco, alcohol, and other drug use among middle and junior high school students. Research trials have demonstrated that the program reduces tobacco, alcohol, and marijuana use up to 80 percent, with effects sustained through high school and demonstrated for adolescents of varying socioeconomic status and race/ethnicity [33]. The three-year program includes self-management skills (e.g., decision-making, coping with anxiety), social skills (e.g., communication, assertiveness), and information relating to drug use (e.g., consequences of drug use, drug resistance skills). Lessons are generally taught by classroom teachers, using a variety of teaching techniques including didactic instruction, classroom discussion, behavior skill rehearsals, and demonstration of skills.

Schools participating in the Blueprints Initiative did not receive monetary incentives to replicate LST, but were provided with all curriculum materials, training and technical assistance needed to implement the curriculum. Thus, participating schools were able to provide LST to all eligible students with no direct costs (other than staffing) to the school district. In exchange, schools were required to implement the full three-year curriculum. The first year (Level One) included 15 lessons to be taught to all 6<sup>th</sup> or 7<sup>th</sup> grade students, one to five times per week in at least 50-minute class periods. In the second year of implementation, these students were to receive 10 booster sessions (Level Two), while an incoming cohort of 6<sup>th</sup> or 7<sup>th</sup> grade students would receive the Level One curriculum. In the third year of implementation, 8<sup>th</sup> or 9<sup>th</sup> grade students received 5 booster sessions (Level Three), 7<sup>th</sup> or 8<sup>th</sup>

grade students received the Level Two curriculum, and an incoming cohort of 6<sup>th</sup> or 7<sup>th</sup> grade students received the Level One curriculum.<sup>1</sup>

### **Implementation Monitoring Process**

A multi-faceted implementation monitoring process was used to assess the research questions.

**Site Selection.**<sup>2</sup> Sites responded to a Request for Proposal (RFP) issued by the Office of Juvenile Justice and Delinquency Prevention and/or applied directly to CSPV.

Applications provided program implementation details, including the subject in which LST was to be taught, class size, names of instructors, timelines, and so on. Each site was asked to identify a local coordinator to monitor program activities, help overcome challenges, and communicate with CSPV and NHPA. Written letters of commitment from school principals and superintendents were also required.

Feasibility visits were then conducted by CSPV staff and certified LST trainers from NHPA to verify application information, describe the core elements of the program, explain the research requirements of the project (with a strong emphasis on the need to implement the program with fidelity), assess commitment to implement LST with fidelity, and address local concerns. Selection decisions were based on sites' readiness and ability to replicate the program. Given the small number of applications received, most sites were accepted into the study, but those that were clearly not ready (e.g., demonstrating little support from administrators and/or teachers) or unable to fulfil the project's requirements (e.g., unable to allow observations of lessons) were not selected.

**Teacher Training Workshops.** Each site received a two-day training workshop in the first year of implementation, and a one- or two-day workshop in the second and third years,

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<sup>1</sup> During the research project, violence prevention lessons (3 lessons in Level 1, 2 in Level 2, and 4 in Level 3) were added to the packaged curriculum. As NHPA considered these lessons optional, and schools had not previously committed to teaching them, the lessons were not required from Blueprints sites.

<sup>2</sup> See the Addendum for more description of site selection.

to familiarize staff with the program rationale and the key components of each lesson.

Training was required for all LST instructors and local coordinators and was encouraged for school administrators and other support staff. (See the Addendum for more details regarding LST training workshops provided in the Blueprints Initiative.)

***Classroom Observations.*** CSPV hired one or two local consultants at each site to assess implementation fidelity through classroom observations of lessons. The observers attended LST training workshops to meet instructors and learn about the curriculum. Written instructions were provided for completing the LST fidelity checklist, and CSPV representatives had telephone conversations with observers after training to ensure that they were prepared to begin classroom observations. They were then asked to attend four (26%) of the 15 classroom sessions taught by each LST instructor during Level One, three (30%) Level Two lessons, and two (40%) Level Three sessions. Using checklists developed for prior LST research trials, observers rated whether or not each of the main points and activities to be taught each lesson were delivered. Observers were also asked to identify the use of varied instructional techniques, assess student participation, and note any problems, such as deviations from the curriculum, student behavior issues, or inadequate facilities. Observations were not scheduled in advance with teachers, and observers were to refrain from participating in the lesson or interacting with students, to preserve the naturalistic classroom setting. CSPV staff supervised observers, reviewing observation procedures in phone calls and written correspondence prior to implementation, talking to observers during implementation about their work, and conducting joint observations annually.

***Technical Assistance (TA).*** Technical assistance was provided by research staff from CSPV and LST trainers from NHPA. CSPV staff made site visits once per year to conduct informal interviews with LST program coordinators, principals, classroom observers, and some teachers. Discussions focused on the progress of implementation, including support for

the curriculum, problems encountered, and solutions achieved. Staff also observed LST classes, usually in conjunction with local observers to assess the reliability of their information. CSPV and NHPA staff provided telephone TA to local coordinators as needed during the school year, which focused on implementation progress and achieving solutions to implementation challenges. At the end of each school year, CSPV provided each site with a written report describing the project results as a whole, as well as site-specific information regarding the extent of implementation fidelity achieved, obstacles faced and overcome, and recommendations for improvement. Schools could also request phone, email, or on-site technical assistance from NHPA trainers throughout the project. (See the Addendum for more detail regarding the provision of TA.)

## **Measures**

The independent variables included in the analyses were largely derived from prior research [58] that assessed implementation fidelity of eight Blueprints programs (not including LST), replicated in 42 sites. Variables in this study include ratings of the program training workshops, characteristics of the LST program, school-level characteristics, administrative support, staff buy-in, parent awareness of the program, quality of the local coordinator, time spent teaching classes, and student behavior. Most independent variables were based on self-reports from LST instructors or site coordinators, though one measure each was obtained from LST trainers, CSPV staff, and local classroom observers. Variables were coded so that higher scores reflected more successful implementation fidelity. Descriptive statistics for all variables are given in Table 1, and individual measures are described in more detail below.

Teacher reports were based on written mail surveys conducted at the end of each program year, which were collected and sent to CSPV by site coordinators. All surveys were conducted anonymously, and response rates were fairly high. Over the three years, about 70%

of teachers completed year-end surveys. Multiple teachers implemented LST during the three-year study, though some teachers participated each year and may have responded more than once. Teacher reports were averaged to create site-level scores for each implementation measure.<sup>3</sup>

Written mail surveys were completed by local site coordinators at the end of the three-year project. Coordinators reported on 42 items related to program implementation, characteristics of the local school district and program implementers, training and technical assistance, and support for the program. Each item was rated on a five-point scale identifying the extent to which it was a “significant barrier” (rating of ‘1’) or “significant asset” (rating of ‘5’) to implementation as a whole, throughout the project. 104 of the 105 surveys were completed by local coordinators.

***Training Quality.*** The overall quality of the training workshop was based on reports by the site coordinators at the end of the three-year period, teacher reports conducted at the end of each training workshop, and trainer surveys also collected at the end of the workshop. Coordinators rated the overall quality of training workshops from 1 (‘significant barrier to implementation’) to 5 (‘significant asset to implementation’). Teachers and trainers rated the workshop on a five-point scale (from ‘poor’ to ‘excellent’). The three reports were averaged to form the training quality measure (Cronbach’s alpha of .49).

***LST Program Characteristics.*** Coordinators rated the extent to which four characteristics related to the LST program (the quality of the materials, flexibility, time

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<sup>3</sup> Both independent and dependent variables were assessed at the site level, rather than for individual teachers. This procedure was used given that the study aim was to examine the ability of schools as a whole to replicate the LST program with fidelity, and certain site-level characteristics were expected to influence implementation procedures. Scores were also collapsed across program years, given that each year of implementation covered similar themes and topics. Additionally, feedback on implementation was provided in annual reports to all sites, and all information in these reports was collapsed at the site level to avoid embarrassment to individual teachers in small schools and any repercussions that might occur at the administrative level due to inadequate or incomplete implementation by a teacher.

required, and complexity) were a barrier (score of 1) or asset (score of 5) to implementation. These items were combined to form the program characteristics scale (alpha of .70).

***School Characteristics.*** The school characteristics scale (alpha of .87) was derived from 13 items rated by coordinators including staff participation, administrative support, open communication between agency staff, fit between program and agency, cohesion and collaboration, clarity of goals, clear lines of authority, structural stability, champion, facilities, financial support, resources for program, and political climate. Each item was rated on a five-point scale (from ‘significant barrier’ to ‘significant asset’ to implementation).

A separate measure was derived from teachers who reported the degree of administrative support for LST, rated on a five-point scale, from ‘not at all supportive’ to ‘very supportive’.

***Teacher Support.*** Teacher support is based on instructors’ overall rating of the LST program on a five-point scale, from ‘poor’ to ‘excellent’.

***Parent Awareness.*** Teachers reported the degree to which parents were aware of the program on a five-point scale, from ‘unaware’ to ‘very aware’.

***Program Coordinator.*** The overall quality of the LST coordinator was rated by Blueprints staff, using a three-point scale (‘poor’, ‘average’, and ‘excellent’).

***Length of LST Class.*** Teachers reported the average length of their LST classes in minutes.

***Student Behavior.*** Classroom observers rated student behavior during lessons on a five-point scale, from ‘poor’ to ‘excellent’.

### **Table 1 about here**

***Dependent Variables.*** Prior studies have identified four primary elements of implementation fidelity: adherence, dosage, quality of delivery, and participant responsiveness [10]. In this project, we assess each of these outcomes separately in

multivariate analyses. Classroom observations of teachers' delivery of the LST curriculum measured adherence to the curriculum ("implementation score"). During each observation, the proportion of objectives and activities taught was identified using a fidelity checklist designed by the program developer and used in prior evaluation trials and program replications of LST [14, 23, 28, 33, 56]. An implementation score for each lesson taught was calculated as the percentage of material taught out of all required material. For example, a lesson in which five of ten required objectives were delivered received an implementation score of 50 percent. Average implementation scores were then created for each site, based on all teachers and years of implementation observed for that site.<sup>4</sup>

During yearly site visits, Blueprints staff conducted classroom observations with the local observers to validate the accuracy of the information. During the three-year project, 302 joint observations were conducted. Ratings were compared on each pair of implementation checklists. The observer-staff correspondence across all levels and years of implementation was 89.7%, indicating a high level of reliability of the observer information.

LST dosage ("teach all") was based on a question in the year-end teacher surveys that asked instructors to check all lessons that they taught during the year. This question was then coded as a dichotomous measure. If a teacher had taught every lesson, s/he received a score of 1; if not, a score of 0 was given. An average score was created for each site, based on all teachers and years of implementation.

Quality of delivery ("interactive") was assessed as the percentage of the class period spent using the three recommended interactive teaching techniques (classroom discussion, skill demonstration, and behavioral rehearsal). This measure was reported by classroom observers on the fidelity checklists. A summary score was created for each site, based on all site observations over the three-year period of implementation.

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<sup>4</sup> Implementation scores for two sites that withdrew prior to Year One implementation could not be calculated.

Participant responsiveness (“student participation”) was measured by teacher year-end survey responses to the item: “What percent of students participated in LST activities that you taught?” A summary measure was created for each site, based upon the responses from all LST instructors at the site and averaged across the three years of implementation.

### **Data Analysis**

Results for the first, third and fourth research questions are based on teacher and coordinator surveys, observations of lessons (from consultants and CSPV staff) and qualitative interviews conducted by research staff with key participants. Results are primarily descriptive in nature. The third research question, identifying predictors of implementation fidelity, was analyzed using quantitative data from written surveys and observations. Multiple linear regression was used to identify predictors of the four elements of implementation fidelity. All independent variables were entered into the model simultaneously, and significant predictors ( $p < .05$ ) were identified.

## **Results**

### **Did the LST program reach the intended, universal population of middle school students?**

A prerequisite of site selection was that schools implement the program with *all* eligible students. At the beginning of each school year, schools were required to submit schedules of implementation that identified the dates and times during which LST would be offered to the targeted population (all 6<sup>th</sup>-8<sup>th</sup> or 7<sup>th</sup>-9<sup>th</sup> grade students). Verification that schedules were being followed was made by the local classroom observers at each site. When problems arose that prevented teachers from reaching all students, Blueprints staff were usually notified by the local observer, and efforts would be made to resolve the problems. Typically, the lack of instruction was due to a lack of trained teachers (caused by staff

turnover after the initial training). In these cases, a second training or TA visit was held to train additional instructors. Sometimes, schools or teachers delayed in teaching students due to scheduling problems or lack of enthusiasm. For these cases, Blueprints staff worked with local coordinators to motivate instructors to begin teaching the program.

Although 100% exposure was not obtained in every school, all efforts were made by Blueprints staff to ensure the program was delivered to the intended population and that all eligible students received the program. For the most part, this was successfully accomplished. During the three years of implementation, the LST curriculum reached approximately 172,355 students.

### **To what extent was the LST curriculum implemented with fidelity?**

Our primary measure of implementation fidelity was teachers' adherence to the LST curriculum, defined as the proportion of critical objectives and activities taught during observed lessons. As shown in Table 2, instructors were observed to closely follow the curriculum. The average site adherence score of 86% indicates that 86% of the required material was taught by teachers in participating schools during the three-year project. High rates of curriculum adherence were demonstrated for all three levels of the LST program, with average fidelity scores of 86% for the Level 1, 85% for Level 2, and 88% for Level 3. Deviation in adherence across sites was not great, as overall scores ranged from 64 to 98 percent. However, individual teachers varied in the extent to which they taught the critical program objectives. Individual teachers were observed to teach between zero and 100% of the required information (results not shown).

Program dosage--whether or not all lessons were taught, and the average length of lessons—was reported by teachers in year-end surveys. As shown in Table 2, 71% of teachers reported teaching all required LST lessons (15 in Level 1, 10 in Level 2, and 5 in Level 3). This outcome varied by level (year) of implementation, with 77% of Level 1 LST instructors

completing all Level 1 lessons, compared to 75% of Level 2 teachers, and 60% of Level 3 teachers. Although we cannot state with any certainty why the drop occurred in Year 3, we did receive reports from many teachers that the booster lessons were repetitive with information in prior years. Teachers reported an average class length of 48 minutes (with a range of 33 to 68 minutes, as shown in Table 1), which closely matched the dosage requirement that LST lessons be a minimum of 50 minutes.

A key aspect of the LST curriculum is that instructors vary their teaching techniques to include didactic instruction, discussion, demonstration, and behavioral rehearsal as appropriate during lessons. According to observer reports, teachers spent, on average, 37% of class periods facilitating student discussion, 32% of time using didactic instruction, 20% of time conducting behavioral rehearsals, and 12% of class periods demonstrating skills. Teachers reported high participant responsiveness to the program. On average, across the sites, 89% of the students participated in lessons.

### **Table 2 about here**

#### **What factors were associated with implementation fidelity?**

As shown in Table 1, teachers and coordinators reported high ratings of the independent variables hypothesized to relate to the quality of implementation fidelity in this project. As rated by teachers, coordinators, and LST trainers, the quality of the training workshops was “good” (4.31 on a 5-point scale). Similarly high ratings were given for the LST program overall (rated by site coordinators as 3.42), support for the program from both school administrators (4.22) and teachers (3.68), and healthy school environments (3.89).

These variables demonstrated modest bivariate correlations with the dependent variables that measured implementation fidelity of the LST curriculum (see Table 1). Higher implementation scores were associated with higher ratings on all independent variables except the quality of the training workshop ( $r=-.14$ ). Of these measures, parental awareness of

the program and student behavior were significantly related to the implementation score. Characteristics of the LST program were significantly related to dosage (“teach all”), as teachers were more likely to teach all the lessons if the curriculum was of high quality, flexible, and easy to use (as rated by coordinators). The use of interactive teaching techniques was significantly associated with better student behavior, but less teacher support of the program. Student participation was statistically correlated with greater parental awareness of the LST program and strong administrative support.

Tables 3-6 present the results of the multivariate analyses used to assess the relationship between the independent variables and the four measures of fidelity: adherence, dosage, quality of implementation delivery and participant responsiveness. As shown in Table 3, two of the nine independent variables were significantly ( $p < .05$ ) related to the implementation adherence score, with the quality of the LST program and better student behavior related to a greater proportion of material taught by teachers. Two variables were marginally related ( $p < .10$ ) to adherence. Longer LST classes and the quality of the LST coordinator were associated with greater fidelity to the curriculum. Several variables were not significantly related to the adherence score, including training quality, characteristics of the school environment, administrator support, teacher support, and parental awareness of the program.

**Table 3 about here**

Table 4 shows the relationship between independent variables and implementation dosage (i.e., teaching all required lessons). The quality of the LST program was the only variable significantly related to dosage, indicating that coordinators’ positive views of the program were associated with teaching all required lessons.

**Table 4 about here**

The results in Table 5 demonstrate a significant relationship between better behaved students and teachers' greater use of interactive methods. Since the data is cross-sectional, however, it cannot be determined whether using interactive teaching techniques led to better student behavior, or whether better student behavior was conducive to greater use of these techniques. Less intuitively, teachers who were more supportive of the LST program were less likely to use interactive teaching techniques.

**Table 5 about here**

None of the independent variables was statistically related to the last measure of implementation fidelity, student participation. Results are not presented.

**What obstacles and barriers were encountered during implementation, and how were they addressed?**

The quantitative ratings cannot capture the depth nor range of experiences faced by schools and instructors when implementing the curriculum. The next section identifies the general and specific challenges that were faced during the project, describes how school personnel responded to them, and assesses the extent to which challenges were overcome during the three years of LST implementation. Information is largely based on the qualitative data obtained during site visits by CSPV and NHPA representatives.

***Implementation Failures.*** Implementation failures occurred throughout the three years of the project, when sites or schools were unable to successfully implement the LST curriculum or fulfill the research requirements. Full implementation failure occurred in six sites, representing seven schools. One site withdrew prior to Year One training because of a major reorganization in the school district that temporarily closed the charter school where LST was to be implemented. Another site began implementation but withdrew during Year One, and the other four sites withdrew from the project during Year Two, usually before receiving an LST booster training.

Of the six site failures, two occurred in sites in which outside prevention agencies had applied for the grant and were delivering the program. Funding problems within these agencies and miscommunication between the school and the agency were related to failure, as was lack of strong principal support. The other four failures were related to either administrative changes and lack of buy-in from new principals, or to problems with integrating LST into the school schedule.

In addition to these examples, 22 schools from 17 other sites withdrew from the project over the three years of implementation (9 of these schools withdrew prior to year one training and implementation). These cases were often related to low or no teacher attendance at required LST training workshops. As explained below, this challenge was faced to some degree by many schools, but failures represented an extreme problem or multiple problems that could not be resolved. Every effort was made to provide support to schools and sites that were considering withdrawing from the project, but TA did not always help these sites. In some cases, for example, make-up training workshops were held, but in sites facing organizational upheavals or communication failures, second trainings were often no more successful than first trainings in ensuring teacher attendance.

***Teacher Training Workshops.*** Although all LST instructors were required to attend training workshops, absenteeism often occurred. When absences signaled a clear lack of commitment from the site (e.g., if all teachers from a school were missing), schools were asked to withdraw from the project. If absenteeism reflected a lack of communication between school personnel, such as administrators failing to provide substitute teachers or scheduling other required workshops on the same day, sites were offered make-up trainings. Staff turnover *after* training was common and typically delayed implementation until another training opportunity could be arranged. In a few cases, sites did not identify the teacher turnover and either allowed untrained instructors to deliver the lessons, or did not deliver the

program to the teacher(s)' classes. Schools could avoid implementation delays by sending additional staff (particularly guidance counselors) to trainings who could teach lessons if needed, but doing so was often difficult for schools to arrange.

*Integrating the LST Curriculum into the School Schedule.* Many schools struggled to find room for the three-year LST curriculum in their existing schedules, particularly as the program was to be received by all students, and ideally was to be taught in classes of at least 45 minutes with fewer than 35 students. The most common barrier to integration was finding time outside of "core" academic subjects, and this challenge seemed to increase during the project, as academic pressures to fulfil standardized test requirements also increased. Placing LST in non-academic subjects was not always the best solution. When students realized their elective courses would be used to teach a curriculum, they could be critical of the program and disruptive during lessons (which was significantly associated with lower teacher adherence to the curriculum). Some schools scheduled LST into short homeroom periods or other free periods, which resulted in less time to teach required material (also negatively associated with implementation fidelity) and often to student behavior problems.

Implementation during physical education classes, was a common, but not effective, solution to scheduling difficulties. Classes were sometimes combined for PE (resulting in class sizes of nearly 100 students in one site), which could exacerbate behavior problems. Moreover, participation in discussions and role plays suffered in large classes, as not all students could participate, and some were reluctant to share personal experiences in front of large groups of their peers, particularly those they did not already know. Finally, some PE classes were held in the gym, cafeteria, or even outside, and all locations could be distracting for both students and teachers.

Over the three years of the project, many sites were able to integrate the program into their curriculum, sometimes by trying various arrangements until a niche was found.

Particularly successful strategies included identifying a subject (such as health) in which similar information was being taught and replacing that material with LST lessons, or matching the LST curriculum with state or district teaching requirements, so that all school personnel felt the time was well spent and not viewed as additional work.

***Student Misbehavior.*** Although teachers and observers generally reported good student participation in lessons, student behavior problems nonetheless occurred with frequency. These issues were especially apparent in large classes and during discussions and behavioral rehearsals. Misbehavior, in turn, led some teachers to avoid interactive exercises, or to spend too much time managing student behavior problems, which resulted in less time to cover the required material.

Classroom behavior problems were difficult to overcome, particularly for instructors from outside the school system, who were unfamiliar with students. In these cases, classroom teachers were asked to help manage student behavior. Likewise, if possible in large, combined classes, teachers divided the workload so that one teacher taught while the other monitored behavior. In extreme cases, sites (or research staff) requested TA from LST trainers, who modeled teaching techniques designed to *prevent* student misbehavior, and/or reviewed strategies for facilitating discussions and behavioral rehearsals while still covering required material.

***Lack of Support for the Program.*** While the measures of support from coordinators, school administrators, and teachers were not strongly related to program fidelity in multivariate analyses, support from key participants could influence program monitoring, training workshops, and other implementation procedures. Enthusiastic local coordinators were able to provide the on-site monitoring and proactive problem-solving that external research staff could not. Conversely, coordinators who lacked interest in the program typically failed to monitor program activities and intervene when needed, such as identifying

teacher turnover and arranging new training workshops, or ensuring that LST schedules were being followed. Other coordinators lacked authority to effectively manage the program. When classroom teachers or guidance staff acted as coordinators, ensuring full teacher attendance at training workshops or scheduling LST classes could be difficult, as this required approval from school administrators. Coordinators who were too far removed from the classroom (such as those located in school district offices) were often not perceived as credible by teachers, and thus had difficulty communicating with instructors or offering assistance.

School principals and district administrators needed to promote the program initially, when adopting the program and finding room in the school schedule for it, and during implementation, to bolster enthusiasm from other staff and ensure that lessons were taught. Active administrators introduced the program to teachers and elicited their support, attended teacher training workshops, observed lessons, kept informed of implementation progress, and even taught classes in some cases. In contrast, other principals did not make the curriculum a priority, perhaps due to competing demands and increasing pressure to raise students' academic performance. In more extreme cases, a lack of principal support could lead to site failures. In two failed sites, outside prevention agencies had coordinated the project and provided LST instructors, but had not engendered full support from administrators. As a result, when they were unable to continue teaching the program, principals refused to take on the burden. In a third failed site, the school could not find a suitable subject in which to teach the curriculum, and the principal was unwilling to make room in the school schedule. A fourth failed site involved principal turnover, with the new principal overwhelmed with new duties in the job and unwilling to spend time trying to integrate the program into the school curriculum. Administrator enthusiasm and support was solicited by research staff by requiring principals to sign letters of commitment as part of the application process, and

through personal visits to discuss the goals of the project, progress of implementation, and administrator involvement in the initiative.

Teacher support for the program varied by site and over time. While the majority of instructors had very positive views of the program, others resented the mandate to teach LST, particularly when their input was not solicited and when overburdened with other responsibilities. Some teachers did not support LST because they felt similar material was already being taught in the school, they disliked the content or theory of the program, or they felt other drug prevention curricula were better. Other reasons for a lack of teacher support included concerns about being observed, or feeling that project guidelines regarding fidelity were too rigid and did not allow for teacher creativity and flexibility.

Teacher dissatisfaction sometimes resulted in instructors deviating from the curriculum by supplementing lessons (i.e., adding videos, “scare tactics,” or other activities) or deleting information, activities, or entire lessons. Some teachers were observed telling students that they had to “get through” LST lessons before they could begin other work. Not surprisingly, students in these classrooms tended to be uninvolved and disruptive. When instructors from outside the school taught lessons, classroom teachers often appeared uninterested in the material (some were even observed reading newspapers and paying bills), and students typically responded with boredom and restlessness. Instructors’ lack of buy-in also contributed to site failures. If both they and administrators were reluctant to champion the program, the likelihood of overcoming challenges was diminished.

Sites could increase instructor support by involving teachers in the decision to adopt the new program and allowing them adequate time to prepare for and deliver the program. During implementation, CSPV staff met with as many instructors as possible, to listen to their concerns, thank them for their support, and recommend that those with problems seek technical assistance from trainers. In site visits and year-end reports, coordinators and school

administrators were encouraged to foster teacher support by scheduling regular meetings with staff, provide guidance counselors or others to co-teach lessons if teachers requested such assistance. Even if this advice was not followed, teachers who did not enthusiastically endorse the program were sometimes observed to effectively deliver lessons, which may help to explain the lack of significance between teacher support and implementation fidelity.

## **Discussion**

Widespread replication of effective prevention programs is unlikely to affect the incidence of adolescent delinquency, violent crime, and substance use until the quality of implementation of these programs by community-based organizations can be assured. This paper presented the results of a process evaluation focused on identifying the extent to which schools participating in the Blueprints for Violence Prevention Initiative were able to successfully implement the LifeSkills Training (LST) drug prevention program. In addition, the project identified factors that promoted implementation quality, challenges that were faced during replications, and the degree to which problems were overcome.

The process evaluation demonstrated very high rates of implementation fidelity among the sites and schools participating in the project. According to observer reports, sites delivered, on average, 86 percent of the program objectives and activities required in the three-year curriculum. Teachers were observed using all four recommended teaching practices (didactic instruction, discussion, demonstration, and behavioral rehearsal) and student participation in lessons was good. Teachers and site coordinators also reported strong implementation outcomes and satisfaction with the program. For example, end-of-year surveys demonstrated that 71% of the teachers delivered all the required LST lessons over the three-year period, class length was in accordance to dosage requirements, and satisfaction with the curriculum was better than average. Program coordinators rated the LST program

favorably in regards to the quality of the materials, flexibility, time required, and complexity. Another measure of the success of the program is shown by the high rate of student participation. On average, 89% of students participated in lessons.

Factors related to each of the four components of implementation fidelity (i.e., adherence, dosage, quality of program delivery, and student participation) were also assessed in four multiple regression models. LST program characteristics and student behavior were associated with outcomes in two of the four models. Sites whose coordinators had rated the LST program favorably with regard to quality, flexibility, complexity, and time required had higher levels of teacher adherence and dosage. Program developers are increasingly producing detailed manuals that specify the nature of the required program components [57]. Attractive packaging of a curriculum and ease of use are important considerations in school-based programs. Teachers often lack the time to develop lessons and activities around violence and drug prevention. Programs that are well-developed and contain specific instructions and activities for implementation can be extremely beneficial to teachers who are already overburdened. In an earlier Blueprints project in which eight other Blueprints programs were replicated, ideal program characteristics was found to be related to higher dosage and sustainability of the program [58].

Better student behavior was related to higher teacher adherence and use of interactive teaching techniques. Teachers who spend excessive amounts of time reprimanding and striving to maintain control of a class have less time to teach the lessons and engage students in meaningful discussion and behavioral rehearsal. Teachers who are not adept at managing their classes may avoid the use of interactive techniques for fear of losing control of the class. Our own observations in classrooms showed that teachers with poor classroom management skills often lost control of the class when using interactive techniques. This suggests that

schools should consider teacher training in classroom management skills prior to adopting programs that use interactive techniques, such as LST.

Two other variables were marginally related to teacher adherence: the quality of the local coordinator and a greater amount of time spent teaching each lesson. In the absence of a strong and proactive coordinator, programs can drift. A good coordinator can provide direction, leadership, and motivation to keep implementation on track. Good coordinators maintained contact with teachers, identified potential problems and worked to resolve them before they became major obstacles. Allowing adequate time to teach each lesson was also important. Qualitative interviews with program staff provided additional support for this finding. Instructors frequently reported to research staff that it was difficult to cover all the required information, even in a 50-minute class period. Time constraints were exacerbated when teachers had to use instruction time to manage student misbehavior.

It is difficult to interpret the finding that greater teacher support for the program was related to less frequent use of interactive teaching techniques. We suspect that many of the teachers lacked the skills and experience to use the interactive methods. They may have been very motivated and supportive of the program, but unable to adjust to the more frequent use of these teaching techniques. Some motivated teachers may have limited their use of the interactive techniques in classrooms that contained students who were difficult to manage. In fact, good student behavior and the use of interactive techniques were positively correlated. LST training workshops exposed instructors to these teaching techniques; however, instruction in effective classroom management techniques was not included, and more in-depth training in the efficient use of these techniques may be necessary.

Though research on factors related to implementation fidelity is growing, this is a relatively new area of study and few other studies to date have relied on quantitative analysis to identify these factors. In the Blueprints Initiative evaluation of 42 sites replicating eight

model programs, multivariate analyses showed several factors related to implementation fidelity, including quality of technical assistance, ideal program characteristics, consistent staffing, and community support [58]. The National Study of Delinquency Prevention in Schools demonstrated significant correlations between a number of school- and teacher-level factors and program quality, including the quality of the program coordinator, integration into the school schedule, organizational support, and standardization of program materials [21].

Unlike the National Study of Delinquency Prevention in Schools, the Blueprints Initiative provided schools with program materials, teacher training, and technical assistance to replicate the LST program. In addition, sites were screened in advance to determine their readiness and support to implement the program with fidelity. Throughout the project, research staff provided program monitoring to ensure that curriculum activities were taking place, and one-third to one-fourth of all lessons were observed. Given this level of support, implementation of the curriculum did not occur under typical, “real world” conditions. Thus, schools participating in this project may not be representative of all schools that might choose to implement LST, and the support provided may have resulted in higher implementation levels than otherwise observed. In fact, the results demonstrated implementation fidelity rates even higher than those found in LST research trials and some replication efforts. It may be that the most important predictor of implementation quality was the technical assistance provided, and that this support overshadowed other factors which might be more important in community-based replications that do not receive technical assistance.

Given the nature of this project, the results of the multivariate analyses should be taken with some caution. Most of the independent variables were assessed using self-reported information from LST instructors and local coordinators. Not all teachers completed surveys, and it may be that teachers who were less supportive of the program did not participate in the assessment. In addition, data was cross-sectional, and causal inferences regarding predictors

and outcomes cannot be made. These limitations emphasize the need for additional studies assessing predictors of implementation quality in community-based replications of prevention programs. More research is needed to identify the degree to which communities can replicate programs successfully, and more quantitative analyses of factors that influence the successful adoption of new programs are needed. Studies utilizing multiple respondents, longitudinal designs, and random assignment are particularly needed.

Despite the levels of program monitoring and support provided in the Blueprints Initiative, it is telling that schools nonetheless faced many challenges during implementation. Interviews with program staff indicated barriers related to finding room in the school schedule for the program, with schools trying to avoid taking time away from academic subjects but also risking student resentment if electives or free time was used to teach LST. Most schools struggled to some extent with gaining full support from key participants, including site coordinators, instructors, principals and other school administrators. Finally, student misbehavior and classroom management difficulties were reported by many teachers, particularly when trying to implement the interactive components in the curriculum.

In most cases, schools were able to overcome barriers, at least over the course of the three-year project. Schools also varied in their willingness to identify challenges to research staff. Most schools seemed reluctant to ask for TA, even though they were strongly encouraged at the start of the project and in annual reports to utilize the free technical assistance available. In many cases, CSPV staff did not learn about problems until site visits were made, and requests for visits by LST trainers were rare. We quickly learned that “no news was good news” did not apply to the schools participating in this project and that *proactive* TA (versus waiting for schools to contact TA providers) was needed to identify and solve implementation challenges.

During the past decade, we have learned much about the importance of implementation fidelity in achieving effective outcomes and about what is required to attain a high-quality implementation. The primary lesson learned in this project was that schools can effectively replicate evidence-based drug prevention curricula, including teaching the majority of required lessons, content, and activities in a manner that engages students. Doing so involves much planning and problem-solving, and schools must be ready to encounter challenges. Even when problems are encountered and solved, they may reappear later in implementation and have to be resolved again. The provision of technical assistance and implementation monitoring is also critical for identifying and overcoming barriers to implementation. Merely offering services is not enough, however. Those seeking to support schools' efforts to replicate programs should be active providers and willing to make site visits, rather than reactive consultants who prefer to wait until services are requested.

### **COMPETING INTERESTS**

The authors declare that they have no competing interests.

### **AUTHORS' CONTRIBUTIONS**

The replication project was directed by SFM, and AF and SA were project managers at different time intervals throughout the project, overseeing field staff and data collection. SFM conceived of the study, and SFM and AF participated in the study design, statistical analyses, and writing. AF had a major role in preparing the first draft. SA prepared the file for analysis. All authors read and approved the final version.

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## Tables

**Table 1: Independent Variables and Their Association (r) with Dependent Variables**

Variable <sup>1</sup>	No. of Items	Range	SD	Mean Score	r – Implem. Score	r - Teach All	r – Inter-active	r – Student Particip.
LST Training Quality	3	2.80-4.97	0.39	4.31	-0.14	-0.14	-0.01	-.07
LST Program Characteristics	4	1.80-5.00	0.71	3.42	0.14	0.20*	-0.05	.09
Program Coordinator	1	1.00-3.00	0.67	2.16	0.16	-0.02	0.12	.11
School Characteristics	13	1.92-5.00	0.65	3.89	0.05	0.03	0.10	.07
Admin. Support	1	2.89-5.00	0.48	4.22	0.11	0.09	-0.13	.24*
Teacher Support	1	2.74-5.00	0.47	3.68	0.14	0.01	-0.20*	.17
Parental Awareness	1	1.00-4.67	0.62	3.05	0.20*	-0.07	0.06	.32**
Length of Class (minutes)	1	32.5-68.1	5.42	48.22	0.15	0.06	0.12	.03
Student Behavior	1	2.78-4.82	0.37	4.02	0.55**	-0.04	0.28**	.19

<sup>1</sup> All variables are coded so that higher scores represent better outcomes.

\* Pearson Correlation is significant at the .05 level (2-tailed).

\*\* Pearson Correlation is significant at the .01 level (2-tailed).

**Table 2: Implementation Fidelity Results**

<b>Outcome</b>	<b>Mean</b>	<b>Range</b>
<b>Overall Adherence Score<sup>1</sup></b>	86%	64-98%
<i>Level 1</i>	86	57-100
<i>Level 2</i>	85	33-100
<i>Level 3</i>	88	64-100
<b>Taught All Lessons<sup>2</sup></b>	71%	
<i>Level 1</i>	77	-
<i>Level 2</i>	75	
<i>Level 3</i>	60	
<b>Use of Teaching Techniques<sup>1</sup></b>		
<i>Discussion</i>	37%	23-58%
<i>Lecture</i>	32	13-58
<i>Behavioral Rehearsal</i>	20	8-33
<i>Demonstration</i>	12	0-28
<b>Student Participation<sup>2</sup></b>	89%	63-100%
<i>Level 1</i>	92	15-100
<i>Level 2</i>	88	28-100
<i>Level 3</i>	85	25-100

<sup>1</sup>Reported by classroom observers

<sup>2</sup>Reported by classroom instructors

**Table 3: Factors Related to Implementation Adherence – Implementation Score**

<b>Independent Variable</b>	<b>B</b>	<b>SE</b>	<b>Beta</b>
<b>LST Training Quality</b>	-2.38	1.53	-0.14
<b>LST Program Characteristics</b>	1.89	0.89	0.19**
<b>Program Coordinator</b>	1.47	0.88	0.14*
<b>School Characteristics</b>	-0.77	0.99	-0.07
<b>Administrative Support</b>	1.26	1.39	0.09
<b>Teacher Support</b>	1.30	1.37	0.09
<b>Parental Awareness</b>	-0.86	1.08	-0.80
<b>Length of Class</b>	0.20	0.11	0.16*
<b>Student Behavior</b>	9.96	1.62	0.53**
<i>Constant</i>	32.48**	12.24	-
<i>R-squared (Adjusted)</i>		0.40 (0.34)	

All variables are coded so that higher scores represent better outcomes.

\* p< .10 \*\*p<.05

**Table 4: Factors Related to Implementation Dosage – Teach All Lessons**

<b>Independent Variable</b>	<b>B</b>	<b>SE</b>	<b>Beta</b>
<b>LST Training Quality</b>	-0.09	0.07	-0.15
<b>LST Program Characteristics</b>	0.08	0.04	0.22**
<b>Program Coordinator</b>	0.01	0.04	0.02
<b>School Characteristics</b>	-0.02	0.04	-0.04
<b>Administrative Support</b>	0.08	0.06	0.16
<b>Teacher Support</b>	-0.01	0.06	-0.02
<b>Parental Awareness</b>	-0.06	0.05	-0.16
<b>Length of Class</b>	0.00	0.00	0.09
<b>Student Behavior</b>	-0.00	0.07	-0.01
<i>Constant</i>	0.60	0.52	-
<i>R-squared (Adjusted)</i>		0.09 (0.002)	

All variables are coded so that higher scores represent better outcomes.

\* p< .10 \*\*p<.05

**Table 5: Factors Related to Implementation Quality of Delivery – Interactive Teaching**

<b>Independent Variable</b>	<b>B</b>	<b>SE</b>	<b>Beta</b>
<b>LST Training Quality</b>	0.39	0.80	0.05
<b>LST Program Characteristics</b>	-0.13	0.47	-0.03
<b>Program Coordinator</b>	0.29	0.46	0.06
<b>School Characteristics</b>	0.56	0.53	0.12
<b>Administrative Support</b>	-0.58	0.73	-0.09
<b>Teacher Support</b>	-1.47	0.72	-0.23**
<b>Parental Awareness</b>	0.28	0.57	0.06
<b>Length of Class</b>	0.05	0.06	0.09
<b>Student Behavior</b>	2.38	0.85	0.28**
<i>Constant</i>	32.48**	12.24	-
<i>R-squared (Adjusted)</i>		0.17 (0.09)	

All variables are coded so that higher scores represent better outcomes.

\* p< .10 \*\*p<.05

## ADDENDUM ON SITE SELECTION AND TRAINING

### SITE SELECTION

The site selection process involved an application review and a feasibility site visit. The term “site” refers to the entity applying. A site application could involve one or more schools within a district or one or more school districts within a locality. In a few instances, the locality spanned multiple counties or parishes. In 14 sites an outside prevention agency was the applicant. These agencies partnered with schools to provide trained instructors to teach LifeSkills Training (LST), relieving teachers of that task. Addendum Table 1 shows site locations and number of schools.

There were three separate announcements by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) in three subsequent years to provide training and technical assistance to sites that wanted to adopt the LST program. Only Grant 1 sites responded to the Request for Proposal (RFP) by writing a 30 page grant application. Grant 2 and 3 sites applied directly to the Center for the Study and Prevention of Violence (CSPV) by completing an application designed by CSPV. This change in the application process enabled CSPV to collect more pertinent information on a site’s commitment and plan for implementation very early in the grant review process. The application was designed to encourage sites to think carefully about logistical details involved in implementation (e.g., when the program would be taught, in what class and by whom) in hopes that potential problems would surface earlier than later, providing a better chance for resolution. If potential problems were discovered in the application stage, a call was made to the site to try to resolve the issue. For instance, a site might have stated on the application that they would implement LST in PE, with a mixture of 6-8<sup>th</sup> grade students. Since Level 1 of LST is intended to be taught to only one grade (6<sup>th</sup> or 7<sup>th</sup>), we would have considered this a breach of fidelity and asked the site to reconsider the placement of the program or find a way to separate the different grades. This helped sites to tackle difficult issues early.

If potential problems discovered during the application stage were deemed to be resolvable, a feasibility visit was scheduled. A CSPV representative and an LST certified national trainer (under contract with National Health Promotion Associates, Inc., the dissemination agency for LST) met with key stakeholders at the site. Attendance by the site coordinator, principal and at least one teacher representative from every school within the site was required. These visits generally lasted from 3-4 hours, and included a presentation by the LST trainer that covered the core components of the program followed by a question and answer period. The CSPV representative followed this segment with an explanation of the requirements of the grant and a semi-structured interview with all participants to obtain information on the overall level of commitment, the site’s plan for implementation, and their willingness to conduct the program with fidelity and allow teachers to be observed while implementing LST lessons. After this visit, with input from the NHPA certified trainer, a decision was made by CSPV as to whether or not to accept the site. In some instances, it was clear that some of the schools within a site were committed to the project and willing to implement the program with fidelity, while others were not. Thus, there were instances where schools within a site were asked to withdraw prior to site selection.

The number of sites that applied and were selected follows:

#### ***Grant 1***

In December, 1998, OJJDP issued an RFP for communities that wanted to address drug prevention in their schools/communities by implementing the LST program. Twenty-seven sites responded to the RFP, and from these, 14 sites were approved to receive the technical assistance and curriculum materials offered by this grant, which would be provided

through CSPV and NHPA. No monetary awards were made to the sites. The 14 sites included 78 schools and approximately 39,214 students who were projected to receive LST over the three-year period of the grant.

On June 25, 1999, a second RFP was issued by OJJDP for implementing LST. Thirty sites applied for this grant, and five were initially rejected. Among the 25 remaining sites, 21 passed through all steps of the feasibility process. The 21 sites included 64 schools and approximately 37,450 students who were projected to receive LST over the three-year period.

Combined, 57 sites responded to the first and second RFPs. Of these, 35 were selected to receive the training and technical assistance provided by the grant. The number of participating schools changed each year, as some schools withdrew from the grant and some schools were added because of school restructuring or high schools (grade 9) that were added in the third year of implementation. By the end of Year Three, these sites included 156 schools in 33 sites and approximately 74,073 students. There were two complete site failures, representing three schools, and an additional nine schools across six sites that withdrew their participation from the project (see Addendum Table 2). Three of these schools withdrew prior to Year One implementation.

### ***Grant 2***

On March 1, 2000, OJJDP issued an announcement of a funding opportunity for communities that wanted to address drug prevention in their schools/communities by implementing the LST program. This time, sites used an application process developed by CSPV to apply. Forty-six sites responded to the announcement, and from these, 35 sites were approved, after feasibility visits, to receive the technical assistance and curriculum materials offered through the grant. By the end of Year Three, there were 130 schools in 33 sites that completed implementation, and approximately 50,154 students who received the curriculum. There were two complete site failures, representing two schools, and an additional seven schools across six sites that withdrew their participation from the project. Three of these schools withdrew prior to Year One implementation.

### ***Grant 3***

On March 14, 2001, OJJDP issued the last announcement to fund new LST sites. Sites could apply directly to CSPV. Fifty-three sites responded to the announcement, and from these, 38 feasibility visits were conducted, and ultimately 35 sites were approved to receive the technical assistance and curriculum materials offered through this grant. Four of the original applying sites were combined into two sites because of close proximity to one another. By the end of Year Three, there were 117 schools in 33 sites that completed implementation, and approximately 48,128 students who received the curriculum. There were two complete site failures, representing two schools, and an additional six schools across five sites that withdrew their participation from the project. Three of these schools withdrew prior to Year One implementation.

## **TRAINING**

The grant provided for one training per site for each year of the grant, which consisted of a two-day initial training in Year One, followed by booster sessions in the subsequent years. Booster trainings were one or two days (both models have proven effective through research), depending on the needs of the site (number and level of training teachers needed), although each site was encouraged to conduct two-day booster workshops. Trainings were coordinated by NHPA, who began the planning process several months prior to the actual training date, typically during the spring in anticipation of an early fall training. The sites were required to address all logistical concerns, including submission of the number of participants attending, while NHPA ordered all materials and arranged travel for their trainers. Once all three grants were operating at the same time, and most of the sites requested

their training within the same time frame, NHPA utilized multiple staff to cover the demands of the planning process. They also employed numerous certified LST trainers who were located around the country to accommodate all training needs.

Training objectives included a review of the background theory, research and rationale behind the LifeSkills Training program, familiarizing participants with the curriculum, developing the teaching skills necessary to successfully implement the program, discussion of implementation issues, and an opportunity for participants to practice teaching selected portions of the LST curriculum. Trainers utilized the various teaching skills (didactic, discussion, demonstration, and behavioral rehearsal) during the training in order to reinforce these methods of program delivery. CSPV required that all program facilitators and site coordinators attend the initial training in the first year. CSPV made a point to emphasize the importance of the coordinators attending training, in order to become more knowledgeable about the program and the necessary requirements for proper implementation, as well as to show support to implementing staff. Data was not collected on exactly how many site coordinators did attend the trainings in their entirety, although all coordinators attended at least part of the training. If coordinators were replaced at any point during implementation, the new coordinators were also asked to attend the upcoming site training. Classroom observers were also required and paid to participate in the training to familiarize themselves with the lesson objectives. School administrators and other support staff (i.e., counselors) were highly encouraged to attend, but in many instances, administrators were unable to reserve the time away from their duties to participate. Many, however, made a point to at least attend for introductions and to express their support to the teachers.

Over the course of the grant, a total of 312 on-site trainings were conducted, and included 4,369 participants. Teachers who taught multiple levels of the curriculum often attended training each year. At the completion of training, participants completed a survey. Over 80% (3,529) of participant surveys were collected. They were asked to rate the overall quality and organization of the training workshop, and indicate their level of confidence in properly implementing the program as a result of training. Participants also rated aspects of the trainer(s), including poise, knowledge of the program, rapport and communicability, level of enthusiasm, ability to answer questions/concerns, and an overall trainer rating. They could also comment about what they felt were the most and least valuable aspects of the training, the length of the training, if they felt any areas were not adequately covered, if they felt a need for additional training, and any other comments. The data collected was fed back to the individual sites in their year-end reports. The reports were also disseminated to NHPA, so that trainers could learn how to better prepare for upcoming trainings with their sites. In general, participant sentiment regarding the trainings was very positive and sites were very satisfied with the trainings and their trainers. They liked learning about the program, and being able to practice the lessons in front of their peers for feedback, as well as allowing for time to discuss any implementation issues or concerns they might have. If any problems were indicated, CSPV worked with NHPA and the site to meet the needs of the site, which sometimes meant using a different trainer in subsequent years.

It was inevitable that the project experienced teacher turnover. This occurred for several reasons, including moving the program to a new subject area, new school hires, replacements for sick teachers, etc. Every effort was made to accommodate sites that needed to train additional teachers after their official site training had been completed. Most often, if several new teachers needed to be trained, an additional training was provided to the site. NHPA required at least 6 participants in order to classify the workshop as a training (for billing purposes). If only a few teachers needed training, a technical assistance visit was arranged to complete training. Twenty eight such TA visits were completed over the course of the project. The final option was to send teachers to a nearby training at another site, if

possible. There were, however, instances in which the site did not inform either CSPV or NHPA of new staff until implementation had ended. In these few instances, the students were either taught by an untrained teacher, or did not receive the program. The data collected does not indicate how many students this affected, although it only occurred at 10 sites.

### **TECHNICAL ASSISTANCE**

Grant funding enabled NHPA representatives to provide technical assistance (TA) to sites in each year of the project, in the form of telephone and e-mail consultation, and on-site visits. A total of only 67 on-site TA visits were conducted throughout the course of the grant. As mentioned above, 28 of these were to conduct training for additional teachers. The remainder of the visits were conducted at various times for each site. Those sites that requested a visit prior to implementation discussed potential upcoming issues or concerns with their NHPA representative in order to avoid issues during program implementation. Other sites requested a visit during their implementation, in order to obtain clarification on issues or to review the progress of implementation. The remainder of visits occurred once implementation was complete, in order for teachers to provide feedback to each other and to prepare for the next year's implementation. Reports to CSPV on why many sites did not take advantage of this service varied. Many of the NHPA representatives only corresponded with their sites if they were contacted. CSPV field representatives discovered on many of their site visits that teachers were either unaware or they had forgotten that TA was available to them. Sites were reminded each year that technical assistance was available and encouraged to contact their TA Provider with any issues or concerns. Finding time during the school year to schedule a visit was often difficult, and in these cases, TA was just not sought, or the sites corresponded with the TA Provider either via telephone or e-mail. Most teachers reported that they did not feel the need for additional assistance, particularly after their initial year of implementing the program and they were more comfortable delivering the curriculum.

**Addendum Table 1. LST sites and number of schools participating at the end of the grant (does not include schools that withdrew that are listed in Addendum Table 2)**

Grant 1 Site Name	# Schools	Grant 2 Site Name	# Schools	Grant 3 Site Name	# Schools
Alexandria, LA	21	Amarillo, TX	3	Bartlesville, OK	1
Brooklyn, NY	2	Baton Rouge, LA	2	Boulder/Westminster, CO	4
Chicago, IL	1	Benecia, CA	1	Caldwell, ID	1
Cortez, CO	1	Bryan, TX	3	Cedar Rapids, IA	1
Des Moines, IA*	2	Buffalo, WY	2	Clarksdale, MS*	12
E. Cleveland, OH	6	Cache Co., UT	3	Cleveland, OH*	2
Elizabeth, NJ	4	Carbon Co., WY	2	Dallas, TX*	1
Fontana, CA	7	DeKalb Co., AL	6	Decatur, AL	0
Foxborough, MA	2	Edmonds, WA	2	Durham, NC	4
Hiram, ME	6	Elizabeth, NJ	5	Evanston, WY*	1
Houston, TX	1	Evansville, IN	12	Evansville, IN	24
Hudson, NY	1	Greece, NY	4	Fitzgerald, GA	0
Johnstown, PA	1	Hamilton, MT	2	Florence, NJ	1
Juneau, AK*	0	Hartford, CT	3	Granite Falls, WA	2
Kansas City, MO	2	Hays, KS	2	Hettinger, ND	1
Kirksville, MO*	0	Hemet, CA	7	Humbolt, IA	1
Little Rock, AR	8	Lincoln Co., NM	3	League City, TX	9
Livonia, NY	2	Louisville, CO	0	Lynwood, WA	2
Logan Co., OH	4	Lynn, MA	4	Marblehead, MA	1
Lubec, ME	12	Madison, FL	2	Metuchen, NJ	1
Madison, WI	3	Madison, WI	2	Monroe, WA	4
Marksville, LA	3	Mahnomen, MN	3	New Brighton, PA	1
Mason City, IA	2	Marion Co., KS	7	Niagara Falls, NY	3
Moses Lake, WA	2	Minneapolis, MN	4	Plentywood, MT*	4
Oakhurst, NJ	2	Natchitoches, LA	10	San Jose, CA	6
Plaistow, NH	1	Newton, IA*	2	San Pablo, CA	1
Rochester, NY*	23	Norwich, CT	2	Spokane, WA*	4
Salt Lake City, UT*	15	Norwood, CO	1	Springfield, MO	5
Springfield, MA	7	Ontario Co., NY	8	Utica, NY	2
Stover, MO	1	Portage, WI	2	Van Horn, TX	1
Utica, NY*	2	Prineville, OR	1	Washington, DC	4
Vallejo, CA	4	Sabine, LA	7	Waushara Co., WI	2
Vero Beach, FL	4	Shreveport, LA	0	Wayne Co., NY	5
W. Palm Beach, FL	2	Sweet Home, OR	6	Wenatchee, WA	3
Willingboro, NJ	2	Wenatchee, WA	7	Winter Haven, FL*	3
	156		130		117

\* Program was taught by staff from an outside agency at some or all schools.

**Addendum Table 2. Site and School Failures**

Grant 1 Site Name	# Schools	Grant 2 Site Name	# Schools	Grant 3 Site Name	# Schools
<i>Full Site Failures</i>		<i>Full Site Failures</i>		<i>Full Site Failures</i>	
Juneau, AK	2	Louisville, CO	1	Decatur, AL*	1
Kirksville, MO	1	Shreveport, LA	1	Fitzgerald, GA	1
<i>School Failures</i>		<i>School Failures</i>		<i>School Failures</i>	
Alexandria, LA	2	DeKalb Co., AL	1	Durham, NC*	1
Brooklyn, NY	1	Hamilton, MT*	1	Evanston, WY*	1
Des Moines, IA*	1	Lincoln Co., NM	1	Spokane, WA	1
Lubec, ME	3	Minneapolis, MN*	1	Washington D.C.	2
Oakhurst, NJ*	1	Ontario Co., NY	2	Boulder/Westminster, CO*	1
Vallejo, CA*	1	Webster Parish <sup>1</sup>	1		
	12		9		8

\*Schools that withdrew from the project prior to year one training and implementation.

<sup>1</sup>Webster Parish applied with the Nachitoches/Sabine Parishes.