




**Testing the Efficacy of a Low-cost Model
for Improving Implementation Quality**

Brian K. Burnbarger
National Prevention Network Research Conference
September, 2009



This research is supported by a grant from the Pennsylvania Commission on Crime and Delinquency

Special thanks to:
Lyn Skillington and Walter Curfman
of the Bedford County (PA) Unified Family Service Systems
and
The teachers and administrators of
Everett, Chestnut Ridge, Northern Bedford, Tussey Mountain,
Bedford, and Hyndman

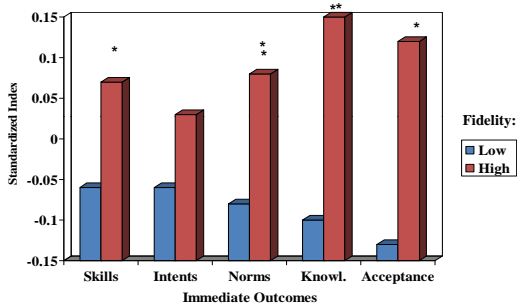
Background

- Correlation between implementation fidelity/quality and positive outcomes
- High quality implementation less common in natural settings
- Monitoring of implementation quality and fidelity is uncommon outside the research context
- Great variability across implementers
- Limitations of the traditional training and TA paradigm in large-scale diffusion

Why does implementation quality matter?

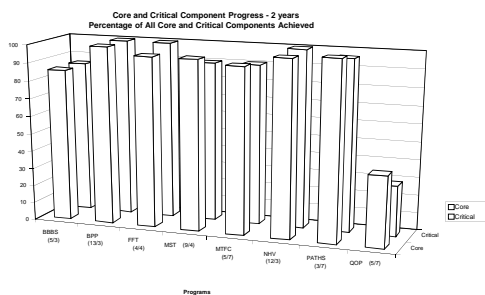
- Research has clearly linked implementation quality and fidelity with stronger outcomes
- Higher quality and fidelity is associated with better outcomes across a wide range of programs and practices (PATHS, MST, FFT, TND, LST and others)
- Fidelity enables us to attribute outcomes to the intervention, and provides information about program feasibility

Fidelity is associated with program outcomes



Rohrbach, Graham, & Hansen, 1993 (Adolescent Alcohol Prevention Trial)

Fidelity can be achieved (in a research context)



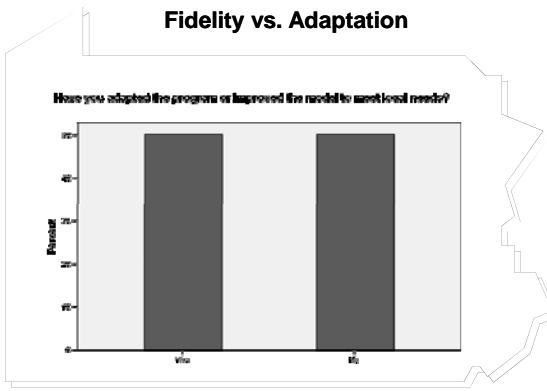
The reality....

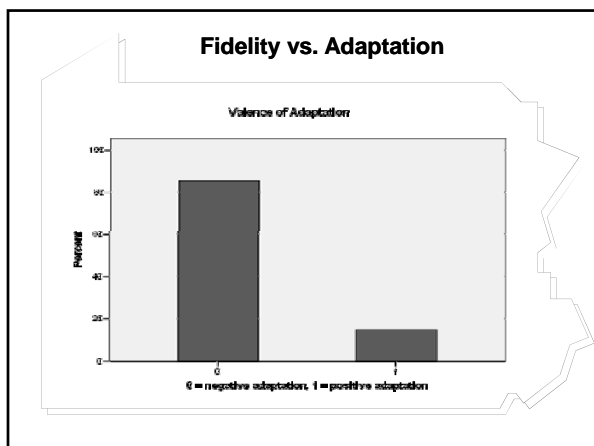
- While possible, fidelity is not a naturally occurring phenomenon – adaptation (more accurately program drift) is the default
- Most adaptation is reactive rather than proactive
- Most adaptation weakens rather than strengthens the likelihood of positive outcomes
- There is no “inoculation” against program drift

Adaptation happens...

- Between 23% and 81% of program activities may be omitted during implementation. (Durlak, 1998)
- Only 19% of schools implement research-based curricula with fidelity. (Hallfors & Godette, 2002)
- Only about 75% of the students received 60% or more of the Life Skills Training Program. (Botvin, et al., 1995)

Fidelity vs. Adaptation





LEEP-LST Study:
Standardized Mean Fidelity Score by Implementer
(Bumbarger & Miller, 2007)

Implementer	Mean Fidelity	N	Std. Dev	Minimum	Maximum
Police Officer Only	62.47	29	18.27	27.5	94.7
Teacher Only	65.25	13	11.81	43.4	85.1
Team Taught	72.03	12	16.62	47.8	94.3

LEEP-LST Study:
Standardized Mean Fidelity Score by Implementer
(Bumbarger & Miller, 2007)

Implementer	Mean Fidelity	N	Std. Dev	Minimum	Maximum
Police Officer Only	62.47	29	18.27	27.5	94.7
Teacher Only	65.25	13	11.81	43.4	85.1
Team Taught	72.03	12	16.62	47.8	94.3

Why does poor implementation quality occur?

- Unforeseen barriers (time, resources, access to the population)
- Inadequate training or understanding of the program's underlying theory
- Implementers lack necessary skills
- Lack of perceived efficacy/relevance/acceptance
- Programs that aren't "user friendly"
- Lack of Administrator support
- Dysfunctional/unsupportive context
- Inertia

Improving implementation locally

- Good pre-implementation planning
- Improve practitioner knowledge of prevention science (etiology and theories of change)
- Build a sustainable infrastructure for monitoring implementation fidelity and quality
- Build internal capacity AND desire
- What gets measured matters

Practical strategies

- Never let the initial training be the only training
- Peer coaching & observation (capacity building model)
- Schedule regular opportunities for reflective practice and de-briefing
- Data in must ALWAYS require data out – create feedback loops and safe environments for reflection
- Emphasize the importance of a clear understanding of a program's logic model

Building a sustainable infrastructure

- Fidelity is susceptible to many variables and thus is fluid over time – it must be monitored continually
 - Acknowledge the difference between adoption phase and implementation phase
- The tendency for adaptation does not significantly diminish over time – there is no inoculation against drift
- Processes for monitoring fidelity and quality should be part of the program infrastructure
- Training, Evaluation, Fidelity and Sustainability are inseparable – they must be addressed and planned for comprehensively

LST Implementation Support Study

Study Purpose

- Develop and test the efficacy of a low-cost, low-intensity model for providing implementation support
 - Must require little effort and investment on the part of implementers
 - Must not result in significant additional cost to implement the program

LST Implementation Support Study

Study Hypothesis

Teachers who participate in the intervention will have higher mean levels of implementation quality and fidelity, and less variability across implementers

Pilot Study Design

- Botvin's LifeSkills Training middle school drug prevention curriculum
- 19 classroom teachers from 6 schools in one Pennsylvania county
- Random assignment to implementation support or "typical" condition
- Joint pre-implementation training
- Implemented with ~3,000 students during one school year
- Baseline assessment, teacher self reports, videotaped observations, student pre- and post-surveys

Intervention

- Weekly 20-minute facilitated group discussion via web-based video conference
 - Facilitator was a research assistant with a knowledge of the curriculum and basic tenets of prevention science
 - Review last lesson, then focus on upcoming week's lesson(s)
 - Goals, key points & activities
 - Where does the lesson fit in the logic model?
 - Suggestions for interactive teaching and problem solving
- Lesson-specific podcasts accessed individually
 - 2-3 minute audio review accompanied by 2-3 slides

Post-training Baseline Assessment

- No statistically significant baseline differences between groups
 - Demographics/personal characteristics
 - Experience (general teaching and prevention)
 - Prevention knowledge
 - Perceptions re prevalence of adolescent ATOD use
 - Motivation/support for implementing LST
 - Perceived efficacy

Teacher Reports of Implementation

Significant group differences favoring the intervention (implementations support) group on:

- Completion of the lesson
- Students' attitude toward the curriculum
- Students' sustained interest in the program materials and activities
- Students displaying appropriate/on-task classroom behavior
- Students' willingness to discuss and process the lesson

No significant differences favoring the comparison group

Coded Observations

- Videotaped observation of every lesson in both conditions
- ~ 140 videotaped lessons blind coded by nationally certified LST trainers
- 16 items measuring of fidelity/adherence, quality of delivery, and participant responsiveness

Coded Observation Findings

- 11 of 16 measures significantly favored the intervention group
 - Percent fidelity/adherence to content (I=76, C=65)
 - Teacher's positive attitude toward the curriculum
 - Teacher maintains order in the classroom
 - Teacher has class deal with questions
 - Students were engaged and participated in discussion
 - Teacher asked open-ended questions
 - Teacher used encouragement & positive reinforcement
 - Teacher encouraged involvement and participation
 - Teacher stimulated active discussion among students
 - Global rating of teacher's overall delivery of the lesson
- No measures favored the comparison group even at a trend level

Barriers & Limitations

- Sample size and program type may limit generalizability
- No clear dose-response relationship across implementers
- No intervention x condition effect at the student level
- Issues related to matching implementation schedules across schools
 - Asynchronous model may be a better fit

Discussion

- This study supports the hypothesis that forms of inexpensive, low-intensity support may be effective at improving implementation quality
- Reinforces the assumption that the traditional training/TA/coaching paradigm can be re-conceptualized and improved
- Provides a potential model for planning the scaling-up of interventions

Thank You!

Brian K. Bumbarger
Evidence-based Prevention and Intervention Support Center (EPISCenter)
Prevention Research Center
Penn State University
206 Towers Bldg.
University Park, PA 16802
EPISCenter@psu.edu
(814) 863-2568
