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STRENGTHENING SOCIAL AND  
EMOTIONAL HEALTH



## FIDELITY OF IMPLEMENTATION: A brief report

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## Introduction

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The implementation-science field is a relatively new scientific area of research. As such, it is struggling with finding consistent terms for many of its concepts. The term Fidelity of Implementation is no exception. The same underlying concept is referred to by terms such as process evaluation (Melde, Esbensen, & Tusinski, 2006); program integrity (Dane and Schneider, 1998); or fidelity of implementation (Fagan, Hanson, Hawkins, and Arthur, 2008; Black, Washington, Trent, Harner, and Pollock, 2010; Summerfelt, 2003). Some researchers refer to it as translation research, or more specifically, “Type II translation,”<sup>1</sup> where communities implement and sustain effective practices (Rohrbach, Grana, Sussman, and Valente, 2006; Bloomquist, August, Horowitz, Lee, and Jensen, 2008). Even the notion of implementing programs in schools is subject to varying terms: diffusion of research, diffusion theory, adoption and its stages, implementation research, transportation of prevention interventions, etc. The focus of this paper is on establishing the best way to introduce a prevention program (sometimes referred to as an evidence-based intervention, EBI) into a school setting, and in turn, finding the best way to sustain it.

To understand how programs are implemented and to understand which facets of program implementation were successful in fulfilling stated objectives, it becomes imperative to ascertain and identify processes that support or aggravate program implementation. Evaluation methods and resulting data facilitate these processes.

By collecting data that capture different facets of program fidelity implementation, programs can be assessed, with programmatic areas identified that have been implemented seamlessly, so those can be replicated. In other areas, however, complications, adversities, or failure to implement according to protocol can be addressed, corrected, or modified. As Dane and Schneider (1998) note, “If integrity data are not collected, it is difficult to determine whether nonsignificant results are due to a poorly conceptualized program or to an inadequate or incomplete delivery of the prescribed services” (p. 23). Lastly, and critically, outcome analyses by themselves do not inform how the program achieved its results, nor do they inform which facets of a given program succeeded or failed (Melde et al., 2006).

In sum, the purpose of this review is to present best methods in introducing a prevention program into a school setting, and once a program is introduced, understanding the mechanisms required for continued sustainability.

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<sup>1</sup> Type II translation is the process of evidence-based programs, products and services being institutionalized.

## Understanding the Baseline before Selecting Site(s)

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Before actual implementation of an evidence-based program begins, certain baseline conditions need to be in place with regard to selecting a school (or school district) where stability is shown, and sufficient staffing and resources are present to support a program initiative (Lehman, Greener, and Simpson, 2002; Tibbets, Bumbarger, Kyler, and Perkins, 2010). In addition, teachers (or the curriculum facilitators), will also require certain attributes in order for programs to be implemented effectively, and where applicable, sustained.

Lehman et al. (2002) discuss the Organizational Readiness to Change (ORC) for drug-treatment programs. The Institute for Behavioral Research has developed measures to assess the required infrastructural inputs<sup>2</sup> (Lehman et al., 2002). This is an important resource for considerations about infrastructural elements. Of the Organizational Readiness to Change scale, psychometric properties were established for ten of the 18 scales, where reliabilities were above .70. (Lehman et al., 2002). These ten scales had a range of four to eight items, and included constructs such as immediate training needs, staffing, growth (with regard to staff attributes), mission and communication. In Lehman et al., there are three key areas that need to be studied before actual implementation of a given program: institutional readiness, organizational climate and motivational readiness.

For an anti-smoking health intervention to be implemented in East Texas schools, a system called *Bridge-It* was devised to assess school capacity. The devised system included an 8-factor, 36-item survey to analyze capacity for program implementation (Roberts-Gray, Gingiss, and Boerm, 2007). Some of these factors were compatibility, external leadership, resources, and implementer characteristics (e.g. willingness to try program, level of professional preparation of staff for their role in implementing the program, implementers' perceptions of compatibility).

In tandem with understanding these constructs for baseline consideration of potential implementation sites, there are also state- and district-level policies and mandates in capacity building that need to be understood (Roberts-Gray et al., 2007).

Not only should the organizational climate be determined, but the individual practitioners' readiness to adopt the program should be as well (Rohrbach et al., 2006; Durlak and DuPre, 2008). The Stage of Change manual (Peterson, Baker, and Weber, 2010) should be consulted for understanding the motivational readiness of individuals who will be implementing Type II translation work.

Therefore, implementing a program is best fostered in stable environments with important attributes of continued resources and support (Lehman et al., 2002; Tibbets et al., 2010; Bloomquist et al., 2008).

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<sup>2</sup> These can be found on IBR's website <http://www.ibr.tcu.edu/evidence/evi-orc.html>

## Evaluation of Implementation Areas

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With a suitable site or school district decided upon, there remain key implementation considerations for program implementation: structural inputs, teacher inputs, student characteristics and adaptability.

Structural inputs, or organizational climate, are those that are found at the school level. They include leadership support, sufficient resources to facilitate program initiation and maintenance, and adequate space for instruction and storage of supplies (Rohrbach et al., 2006).

Teacher inputs, namely the quality of program delivery, are highly dependent on teacher buy-in to the program, and to the resources available to the teacher (Durlak and DuPre, 2008; Fagan et al., 2008). Also, sufficient training needs to have occurred well before the program starts, but without a subsequent waiting period. What sufficient training constitutes, however, is still not clearly understood, with Rohrbach et al. (2006) calling for additional research to ascertain the effectiveness of different training methods.

Factors that influence the quality of program delivery refer to the method and style that teachers use in delivering the curriculum, such as knowledge of the program, preparedness to teach, visible support and enthusiasm for the program, pacing of the class, and use of interactive teaching practices (Dusenbury, Brannigan, Hansen, Walsh, and Falco, 2005). The use of manuals with published curriculum is a critical component of program implementation; in addition, it needs to be in a language and format that are familiar to the teachers (Rohrbach et al., 2006; Dane and Schneider, 1998; Flay et al., 2008).

All of these implementation facets of program quality can be measured by a variety of data-collection methods: on-site visits, focus groups, surveys, questionnaires, etc. By monitoring or evaluating these programmatic elements, the data is available to decipher which programmatic element is working or not; this allows for prompt assessment for potential modifications, reinforcements to the original design protocol, or elimination of a program element.

As noted in an earlier section, understanding how the different facets of a program are being operationalized permits an in-depth understanding of how programs elsewhere can be implemented, and how program quality affects outcomes.

## Tradeoffs between Implementation and Adaptation

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While programs during the efficacy-trials stage are designed and tested with the specific target population in mind, program variations surface during the implementation period (Black et al., 2010). Often, the tradeoffs develop as varying conditions at sites present with new challenges. Factors such as demographics, teacher style, curriculum relevance, and structural constraints play into the changing face of the originally designed and constructed program.

There are varying degrees to which programs are modified, and this can be either beneficial or injurious to program outcomes. When implementation-evaluation data are collected, either concurrently or shortly thereafter, the adaptations can be assessed for effectiveness, and managed accordingly. Instead of treating modifications as failures, it is more effective to monitor them, thereby allowing the chronicling of their effects on program outcomes (Durlak and DuPre, 2008). When providers are knowledgeable about their communities, it stands to reason that their additional insight may help rather than hinder program implementation (Haine, Sandler, Wolchik, Tein, and Dawson-McClure, 2003). With implementation data in hand, these findings will guide the evaluation in determining if the adaption has facilitated the program outcomes.

Tradeoffs to program implementation require the additional responsibility of addressing how those changes are affecting outcomes, and with implementation data to help inform the story of how program outcomes were achieved, how the program outcomes were achieved can be understood.

## Sustainability

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The Society for Prevention Research (2008) defines sustainability as:

Sustainability research is the systematic study of how the use of EBIs is institutionalized or maintained over the long term within specific settings or service delivery systems, including sustained engagement of providers and targeted populations. Studies examine factors that may contribute to long-term implementation of an EBI, such as funding availability, organizational capacity, and policies that support a functional infrastructure for the intervention (e.g., training, laws, and reimbursements for services – CDC, 2007).

Access to sustainable funding needs to be established with the program's design (Society for Prevention Research, 2004). This theme resonates in many articles reviewed, where the most critical element for ensuring sustainability is that of a continued funding mechanism (Bloomquist et al. 2008; August, Bloomquist, Lee, Realmuto, and Hektner, 2006; Tibbets et al., 2010; Roberts-Gray, 2007). From their research, Tibbets et al. have presented several additional factors that lead to sustainability of evidence-based interventions: characteristics of the implementing site, key relationships, and the intervention itself. As articulated in an earlier section, selecting a site that is suitable to implement the prevention program further increases the likelihood of the program achieving sustainability.

Ensuring sustainability will require strategic planning with funding mechanisms in place, where streaming of funds is understood and available from both private and public funding sources.



## Call for Additional Research

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This review demonstrates that a multitude of factors can influence outcomes, and that measurement thereof is mandatory when a program is newly implemented in a school. Currently the literature addresses the factors that require assessment, though little is known about which factor most affects the success of a given program, the extent to which individual factors alone can affect implementation or program outcomes, what are the possible interactive effects of the factors, or even what are the most important evaluation questions to be answered.

While the lack of a “cookbook” exists in terms of which methods to use in assessing these factors, it is also true that a common-sense approach to evaluation and fidelity of implementation is to answer simple questions: Do the practitioners know what the program goals are? How useful was the training? Is the curriculum easily accessible and user friendly? Do the practitioners know whom to call if they have questions about the curriculum?

There is also no consensus on methodology. In some research, it appears as if the only valid way to collect implementation data is via some long, multi-item, psychometrically reliable and valid comprehensive assessment tool; while other, more qualitative approaches may yield critical information not only about lack of implementation quality, but also about identification of barriers and potential solutions. Given the large lists of potential factors to be assessed, ranging from educational leadership, to teacher buy-in, to faithful implementation of a manualized intervention, to effective supervision, it seems that in many cases it is not possible to assess all these elements in the typical implementation of a program. Attempting to do so with questionnaires and observational rating tools would not only make the program feel like a research endeavor, but may alter the program’s cost-benefit ratio in negative ways. In many cases, teacher defensiveness against a program may be defensiveness against the ancillary research components of the program (e.g. randomization, outcome and implementation measure competition, being observed).

Lastly, from our perspective, finding the balance between implementation and outcomes measurement is the art of understanding how different data-collection methods will serve different populations and roles more effectively. Additional methods research and the practice of fidelity-of-implementation research will further inform both the measurement and the suitability of given data-collection methods.

## Conclusion

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This review highlights the need for understanding the many facets that play into the success or failure of program implementation in schools. Collecting fidelity-of-implementation data on the processes and the manner in which a program protocol has been implemented provides the critical insight into how program outcomes have been achieved. Methods and types of assessments, however, need to be decided upon and need to be in place prior to program implementation. Furthermore, it is imperative that evaluation materials and methods capture the individualized programmatic elements that speak to that respective initiative, due to the nature of programmatic elements varying greatly within prevention programs (reducing teen pregnancies, preventing drug usage, building social skills, eliminating bullying, etc.).

The field of fidelity-of-implementation research holds great opportunity. From this review, it is clear that future evaluation initiatives will be plentiful, especially in consideration of the many facets that potentially can affect outcomes. By closely assessing the processes of how programs are disseminated, the balance between these competing demands on the successes of program implementation can be understood (Haine et al., 2003).

Traditional psychometric approaches can be used to assess implementation fidelity (Summerfelt, 2003). This was demonstrated in the measures development of the Organizational Readiness to Change (ORC) for drug-treatment programs. These are shared on the Institute of Behavioral Research's website (Lehman et al., 2002). Yet, there is a balance between transforming a program into a research endeavor, and obtaining needed information from practitioners who may be far more comfortable with more personal, qualitative modes of data collection.

Lastly, serious consideration about the program's financial sustainability needs to be built into program design from the earliest stages. The development of evidence-based programs that no one can fund is probably a waste of resources that otherwise would have alternative uses that could benefit the target population.

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