



Defining and assessing FoI in a large-scale randomized trial: Core components of values affirmation[☆]



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ABSTRACT

A growing body of work suggests that values affirmation can serve as a simple, powerful tool for reducing achievement gaps. The dramatic results of these studies have been shared with and discussed by educators, researchers, and policy-makers, spurring excitement about deploying the intervention in schools around the country. Scholars grasp of the mechanism by which the intervention alters student achievement is limited. We develop a framework for assessing fidelity of implementation by identifying the most crucial elements of an ideal classroom-administered values affirmation. We apply this framework to data from a district-wide randomized trial of values affirmation. Our descriptive analysis shows that fidelity varied across schools, teachers, and over time. We believe that our results make a strong case for future implementations to take fidelity into account. Assessment of fidelity of implementation using a critical components framework will ensure better understanding of variation in the impacts of values-affirmation. Our data support integrating teachers more fully into the process of delivery, though we strongly caution that the integration of these written interventions into regular curriculum must be handled carefully. Lastly, even with the threats to the fidelity of delivery and stealth we find significant impacts of the intervention on the intended audience (Borman, Grigg, & Hanselman, 2016). These significant positive impacts despite low fidelity of some critical components suggests that there may be aspects of the intervention that are less important as they are defined and understood in the original protocol.

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1. Introduction

Studies suggest that values affirmation exercises, in which individuals are instructed to identify, reflect on, and write about their core values, can serve as simple, yet powerful tools for reducing achievement gaps (Cohen, Garcia, Apfel, & Master, 2006; Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009; Miyake et al., 2010; Sherman et al., 2013). However, dramatic results do not always manifest (Borman, 2012; Kost-Smith et al., 2012; Dee,

2014). Our district-wide randomized trial of values affirmation among 7th graders revealed important, but relatively modest, impacts that varied across schools. These findings contrast with the significant and substantively larger impacts produced by earlier studies (Cohen et al., 2006; Miyake et al., 2010). This is not an unusual story in the study of educational interventions (Makel & Plucker, 2014). What might explain these divergent findings? In this paper, we define and measure fidelity of implementation for values affirmation interventions, and investigate variability in implementation across schools and classrooms as one possible contributing factor in these inconsistent effects. Our aims are twofold: we contribute to the specification and development of this promising classroom intervention, and simultaneously model a process that will inform the scaling and field implementation of other social-psychological classroom interventions.

Fidelity has not often been an explicit consideration in most prior studies of values affirmation. Research-based classroom interventions often employ small samples, highly controlled

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implementations, and close contact with the teachers who deliver the intervention, all of which ease monitoring processes and ensure high levels of control, obviating a need to specify and measure implementation fidelity. We therefore begin by employing a core implementation components approach to reexamine the literature on values affirmation and draw from it the most crucial elements of a classroom-administered values affirmation intervention. Because our study evaluates a scaled-up replication of the intervention developed by Cohen et al. (2006, 2009), we pay particular attention to their hypotheses about which aspects of the intervention are most crucial to improve student outcomes. Our examination therefore supports the development of fidelity measures for such an intervention. In so doing, it serves to illuminate challenges to implementation that arise in the field, raising questions about the conditions necessary for a values-affirmation intervention to positively affect student outcomes. These are important steps to take to facilitate this interventions' deployment across several schools. On whole, specifying and measuring fidelity is important for translating educational research into sustainable classroom practice, and the process we model here is one that might be productively utilized by educational researchers developing other interventions.

In the following pages we discuss approaches to the study of fidelity and apply them to the literature on values affirmation. We then describe our measurement tools, analysis, results, and conclude with a discussion of implications for future research as well as for development of these exercises for broader use.

We find substantial variation in fidelity across schools and classrooms, particularly in terms of teacher delivery of the intervention. By the fourth affirmation exercise, notable declines in both student and teacher engagement with the exercise is observed. Our evidence reveals that several components of implementation were executed with fidelity, such as the time and place of the intervention. At the same time, we identify a tension between two core implementation components of the ideal intervention, stealth and low-stress environment; this internal conflict may explain the variation in teacher delivery that took place, despite the detailed training and manuals provided.

2. Theoretical framework

2.1. Conceptualizing and measuring fidelity in the context of values affirmation

Fidelity (also referred to as program integrity) can be broadly defined as the extent to which an intervention is implemented in accordance with the intentions of the designers. A substantial amount of work suggests that failure to achieve fidelity explains the disappointing results of many promising programs (Dusenbury, Brannigan, Falco, & Hansen, 2003; Mihalic, 2004). The extent to which fidelity varies over the course of an intervention can substantially mediate efficacy. This has been referred to as an "implementation gap," and is especially likely when fidelity is not adequately addressed during research design (Durlack & DuPre, 2008; Lipsey, 2009). Therefore, when researchers are piloting, evaluating, and scaling interventions, measuring fidelity is important to establish internal validity and avoid compromising external validity – as well as to maximize statistical power for detecting effects and causal heterogeneity (Cook & Poole, 1982; Chen & Rossi, 1983; Dumas, Lynch, Laughlin, Phillips Smith, & Prinz, 2001; Maynard, Peters, Vaughn, & Sarteschi, 2013). Proper evaluation of implementation fidelity can also help intervention developers make adjustments to program design that lead to improved fidelity in the future (Lakin & Shannon, 2015).

Monitoring, documenting, and measuring fidelity is important for setting expectations regarding which components of an intervention are likely to be successfully transported to other sites, as well as identifying which components are likely to pose challenges for scale-up and broader implementation (Fagan, Hanson, Hawkins, & Arthur 2008; Esbensen, Matsuda, Taylor, & Peterson 2011). This is particularly crucial in designing interventions for use by human service based organizations such as schools, complex institutions "with hundreds of thousands of practitioners situated in a variety of provider organizations that function within uniquely configured state and federal service systems" (Fixen, Blase, Naoom, & Wallace, 2009; p. 532). Identification of challenging components can lead to beneficial changes in the intervention before scale-up has been initiated.

During the 1970s policy analysts, evaluators and methodologists, many of whom were concerned with policy implementation in educational settings, began earnestly investigating the disconnect between interventions as conceived and their implementation (Lipsky, 1971; Pressman & Wildavsky, 1973; Berman & McLaughlin, 1976; Fullan & Pomfret, 1977; Hall & Loucks, 1977; Berman, 1978; Sechrest, West, Phillips, Redner, & Yeaton, 1979). Several studies later focused on meta-analyses assessing the impact of fidelity of implementation on intervention effects. Their findings indicated that interventions designed with measurement tools for implementation identified positive, measureable impacts of fidelity on desired outcomes (Mihalic, 2004; Blase & Fixsen, 2013). However, education and policy scholars debated the merits of maximizing fidelity when doing so would limit the ability to make necessary intervention adaptations for local contexts, thereby potentially jeopardizing the quality of the intervention (Mowbray, Holter, Teague, & Bybee, 2003). Policy scholars established that implementers – often 'street-level' bureaucrats like teachers and police officers – might subvert the original intent of an intervention but could also profitably adapt it to a local context (Elmore, 1979). Methodologists, less concerned with success than accurate estimation, pointed out that effect size estimates were also potentially misleading given the heterogeneous quality of implementation efforts. These early scholars generally recommended designing policies to constrain implementers as a way of ensuring higher fidelity of implementation.

The concept of fidelity has since come to mean more than simply the extent to which implementers deliver an intervention as intended; it is now widely regarded as a multidimensional construct referring to aspects of delivery and receipt, in which fidelity can vary by programmatic characteristics as well as by features of the settings in which interventions are being placed (Stein et al., 2008; Zvoch, 2012). The meaning of fidelity thus varies widely in its manifestations across context and discipline. Several frameworks have emerged, among them the core implementation components approach (CIC), the five dimensions approach, and the structure and process approach (Dane & Schneider, 1998).

The CIC approach builds on Hall and Hord's emphasis on the "building blocks" of an intervention (1987, p. 117) and seeks to address implementation fidelity and preserve the integrity of an intervention by identifying its most "essential and indispensable" elements, those that directly impact the intended outcomes (Wallace, Blase, Fixen, & Naoom, 2005; Fixen et al., 2009; Protheroe, 2009). Many scholars and agencies have similarly emphasized a focus on "critical components," "essential characteristics," and "critical parts," among others (Century, Rudnick, & Freeman, 2010). For example, in an effort to mediate the tension between quality implementation and the potential hazards of an overly stringent intervention design, the U.S. Department of Education (USED, 2009) stated "Quality implementation can be defined as the effective delivery of a program's core components to its target audience". They recommended that in order to ensure

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