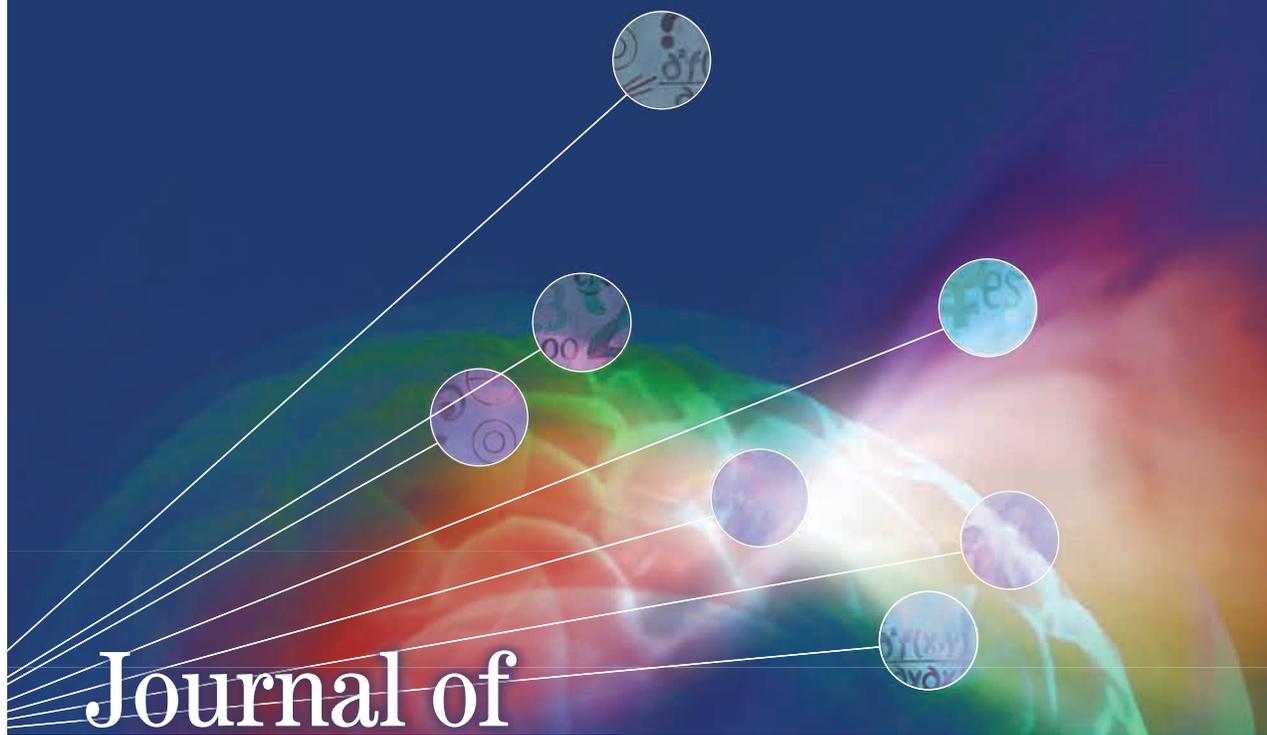


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Treatment Integrity: Fundamental to Education Reform

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Education reform efforts are frequently introduced and discontinued without producing the promised impact. The problem may lie not with the quality of the reform initiative but rather with the quality of its implementation or treatment integrity. This article reviews the variables that influence treatment integrity and some specific approaches for increasing it and concludes with a proposed data-based decision-making approach to scaling up treatment integrity in large educational systems. If true education reform is to occur, then it will be necessary to assure that the reform efforts are implemented with integrity.

Keywords: treatment integrity; education reform; data-based decision making; systems change

“If a job is worth doing, it is worth doing well.”

—*Proverb*

Education has been in a state of nearly constant reform since the launch of Sputnik in 1957. To cite a recent example from the United States, the federal initiative Goals 2000: Educate America Act (1994) specified outcomes to be achieved by the year 2000 (all students start school ready to learn; high school graduation rate reach 90%; and students in grades 4, 8, and 12 demonstrate competency in challenging subjects). It was quickly succeeded in 2001 by No Child Left Behind, which defined goals to be achieved by 2014 (all students functioning at grade level). During roughly the same time, numerous state initiatives (e.g., to reduce class size) have accompanied federal projects. In spite of all of these efforts, there has been little improvement in educational outcomes for students. For example, data from the National Center for Education Statistics (2011) show a nearly flat trend since 1971 in reading and math scores for 4th-, 8th-, and 12th-grade students. This long-running status quo is nothing to celebrate because U.S. students rank 14th in reading and 25th in mathematics when compared to students from other nations (Organisation for Economic Co-Operation and Development, 2012).

REFORMING PROSPECTIVELY

One reason that reform efforts arise so frequently is that many of them are abandoned before they are fully implemented (Aladjem & Borman, 2006; Latham, 1988). Reformers apparently

find it easier to imagine a better educational future than to act in the present to secure it. This disconnect between future perception and current action is at the core of this article, and its origins can be understood in terms of the principles of prospective cognition. Speaking loosely, prospective cognition means thinking about the future and entails actions that are planned with their delayed consequences in mind. Jordan (2009) proposes that future-action planning and current perception are entwined at the neural level. Thus, what we perceive in the here and now, therefore, is integral to imagining how things might be different in the future. Any factor that impairs current perception will promote faulty action planning. This is true for individuals, but especially for groups acting collaboratively (Jordan, 2009), as necessarily is the case in the reform of educational systems. Individuals thinking about the future have merely their own perceptions to worry about. Groups of individuals must somehow coordinate the perceptions of everyone.

Why are educational innovations so often discontinued? Among the many reasons that have been advanced are that the implementation process was more difficult, more time-consuming, and more dependent on specialized staff expertise than expected (Elliott & Mihalic, 2004; Latham, 1988). In light of these complaints, it is distinctly possible that *the problem is not with the reforms per se but rather with the quality of their implementation* (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005).

Treatment integrity refers to the extent to which an intervention is implemented as planned (Gresham, Gansle, Noell, Cohen, & Rosenblum, 1993; Moncher & Prinz, 1991; Yeaton & Sechrest, 1981). Interventions that are not implemented as planned are unlikely to produce the benefits they were designed to create. Unfortunately, interventions may be implemented as planned only rarely. For example, it has been estimated that drug education programs are implemented well only 19% of the time (Hallfors & Godette, 2002). This may explain why such programs, when widely disseminated, show limited effectiveness even though they have been found to be effective in pilot and demonstration efforts (in which treatment integrity was adequate). There are reasons to think that many other educational programs are also poorly implemented. A wide variety of educational interventions that perform well in well-controlled demonstration studies show reduced effectiveness when widely implemented in public schools—possibly because of poor treatment integrity (Schoenwald & Hoagwood, 2001).

In the language of prospective cognition, perceptions of insufficient student development and achievement are what trigger the reform process. Reform efforts are shaped by assumptions about how present actions can affect future student outcomes. Implementation, which is temporally intermediate between the unsatisfying present and an appealing future, is a critical aspect of the perception–action link of reform. Specifically, systematic information about treatment integrity sustains a continuous feedback loop that makes it possible to know whether current practices are in line with what was planned. As will be explained shortly, this information also is essential to ultimate judgments about whether reforms yield the expected benefits.

ROLE OF TREATMENT INTEGRITY IN EVALUATIONS OF EDUCATIONAL OUTCOMES

Despite considerable data showing a direct link between treatment integrity and the effects of an intervention, only recently have systematic efforts been taken to measure and influence

it (Durlak & DuPre, 2008; Fixsen et al., 2005). The extent to which treatment integrity is maintained is unclear because researchers rarely report measures of treatment integrity (O'Donnell, 2008; Swanson, Wanzek, Haring, Ciullo, & McCulley, 2011). Such measures verify that effects are a function of the planned intervention and not an undocumented variation of it or of another intervention altogether (Gresham, MacMillan, Beebe-Frankenberger, & Bocian, 2000). Knowing about treatment integrity, therefore, is essential in allowing educators to make informed decisions about the effects of an intervention.

Figure 1 is a decision tree describing the relationship between outcomes, treatment integrity, and decisions. Decisions about continuing or revising an intervention always start with the question: *Is the student making acceptable progress?* When treatment integrity is high, then reasonable decisions can be made about how to proceed with the intervention. When student outcomes are positive, continuing the intervention is warranted. When student outcomes are negative, the ongoing intervention should be modified or replaced.

When the level of treatment integrity is low or unknown, no informed decision is possible about how to proceed. When student outcomes are positive and treatment integrity is low or unknown, the intervention *may* be effective, but alternative explanations are possible. An unknown alternative intervention (e.g., an undocumented change in student medication) may be in effect, or the positive outcome is transient and unrelated to the intervention and will soon be lost. Positive student outcomes justify continuing the intervention and associated progress monitoring, but in the end, as Figure 1 indicates, data about treatment integrity are necessary to make wise decisions about whether to improve treatment integrity or to change interventions.

When student outcomes are negative and treatment integrity is low or unknown, there is risk of a false-negative conclusion that the intervention is ineffective. False-negative conclusions are problematic because they cause effective interventions to be abandoned. As a result, the educational institution wastes significant dollars that were spent in purchasing the intervention and training staff on the features of the intervention. Student time has been wasted on activities that confer no benefits. Moreover, without a culture of assuring good treatment integrity, there is no assurance that the replacement intervention will be implemented properly and the cycle of adoption, poor implementation, and abandonment will begin again, thereby assuring the short life span of most educational interventions (Aladjem & Borman, 2006; Latham, 1988). As described in Figure 1, when students are not progressing and treatment integrity is low, the best decision is to increase treatment integrity. Once treatment integrity has been increased, then student outcomes can again be reviewed. If there is progress, then the intervention should continue. If there is no progress, even with high treatment integrity, then the intervention should be revised. The interaction between student outcomes and treatment integrity provides a continuous feedback loop to educators about the effects of interventions.

To summarize thus far, two conditions are necessary to reform education: (a) identifying interventions with sufficient research support to justify their implementation at scales of social importance and (b) implementing those interventions with sufficient integrity to impact the performance of students. Without measures of treatment integrity, no informed decisions can be made about the adequacy of implementation, and, consequently, no judgments can be made about the effects of the intervention. Because treatment integrity is so important to educational reform efforts, it is important to understand the variables that influence it. Understanding these variables can lead to a technology for assuring high treatment integrity.

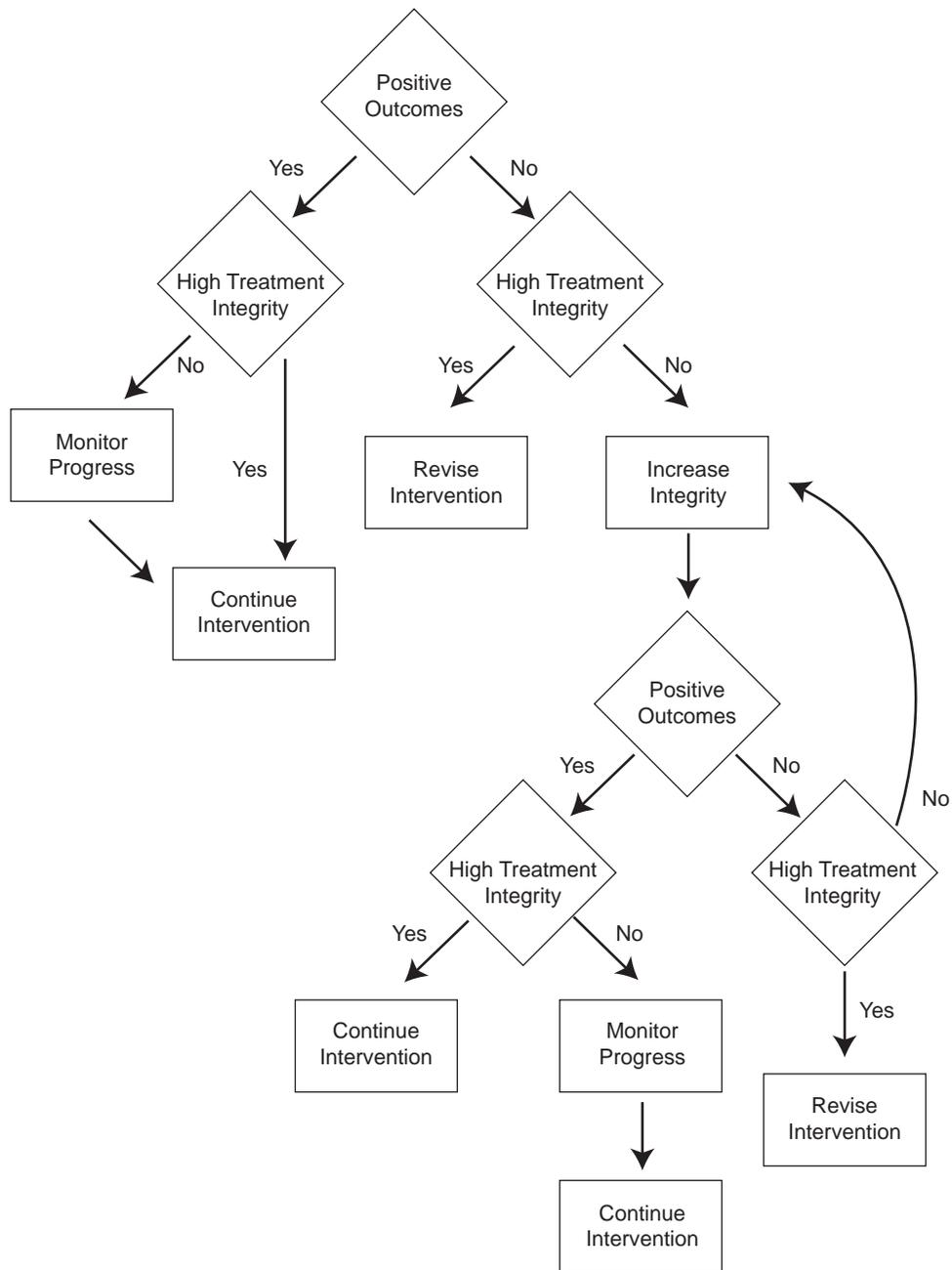


FIGURE 1. Decision tree reflecting interaction between outcomes and treatment integrity and influence on decisions about interventions.

VARIABLES INFLUENCING TREATMENT INTEGRITY

Before educators can begin to influence treatment integrity, it will be necessary to understand the variables that influence it, both directly and indirectly. Assuring high treatment integrity is about influencing the behavior of those responsible for implementation. When educators are asked to implement a new educational intervention or asked to improve the quality of implementation of an existing intervention, they are essentially being asked to adopt a new set of customs. Rogers (2003) has suggested that the adoption and implementation of new practices is a social process and concludes that innovations will be adopted and implemented to the extent that they

1. Are compatible with the beliefs, values, and previous experience of individuals within a social system.
2. Solve a problem for the implementer.
3. Have a relative advantage over the current practice.
4. Gain the support of opinion leaders.

Compatible With the Beliefs, Values, and Experience of Individuals

An intervention that matches the beliefs, values, and experiences of the individuals in the social system (i.e., implementers) is likely to be perceived as credible and reasonable (Albin, Lucyshyn, Horner, & Flannery, 1996; Detrich, 1999). For example, Elliott and Mihalic (2004) report that program credibility within a community is a significant factor in the adoption and implementation of evidence-based violence and drug abuse prevention programs. In this context, credibility refers to a program approaching important problems in ways that are consistent with community beliefs about what constitutes appropriate treatment.

In educational settings, the acceptability of a treatment is influenced by its consistency with implementers' values and beliefs about how to best educate students and by implementers' prior experience with an intervention (Elliott, 1988). In the latter case, an important contextual factor affecting treatment acceptability, and thus treatment integrity, is the training of the teacher. Training provides experiences that influence values and beliefs. A recent review of preservice training found that special education teachers received significantly more training in academic assessment such as curriculum-based measurement (CBM) than general education teachers (Begeny & Martens, 2006). These results help to explain why special education teachers view CBM more favorably than general education teachers and why they implement it with greater integrity. Overall, teachers who rate CBMs favorably produce greater gains for their students than those who rate CBMs less favorably (Allinder & Oats, 1997).

The importance of implementers' beliefs is evident in general education teachers' reluctance to use reinforcement-based procedures that are incompatible with their beliefs (Fuchs, Fuchs, Harris, & Roberts, 1996; Noell & Witt, 1996). Jones and Lungaro (2000) suggest that this reluctance can be reduced by basing treatment recommendations on functional assessments of misbehavior rather than on arbitrarily selected reinforcers. Interventions that address a student's motivation may be more consistent with educators' beliefs about proper instruction.

To date, there have been relatively few attempts to assess and incorporate acceptability variables during the implementation of school interventions. The importance of contextual

factors related to the implementer's values and beliefs suggest that interventionists should act as cultural anthropologists when planning the implementation of a new program in a specific context. The more that is known and understood about the implementers and the culture in which they are working may make it possible to develop interventions that are more acceptable and more likely to be implemented.

Solve a Problem for the Implementer

The capacity of an intervention to solve an already-recognized problem for the implementer affects motivation to implement. Motivation to implement does not assure high levels of treatment integrity, but odds are improved relative to instances in which the intervention does not solve a problem for the implementer. Implementer motivation is a primary concern in school-wide positive behavior support (SWPBS), which is a data-based decision-making, multitiered system of support for improving the behavior of students (Sugai & Horner, 2006). All students participate in a universal, school-wide behavior management system with two levels of more intensive intervention that are applied only to students who fail to show progress under less intensive arrangements, as determined through office discipline referrals. Before agreeing to enter a school, SWPBS describe the goals of SWPBS to school personnel and require that 80% of the school faculty agree to make student behavior a major priority for 3 years (Sugai & Horner, 2006). School personnel thus have the opportunity to decide whether SWPBS addresses a problem that matters to them, and where broad support is not forthcoming, considerable time and resources are saved by not initiating an intervention that is unlikely to be implemented with integrity.

Relative Advantage Over Current Practice

As noted earlier, an intervention has an advantage over current practices if it is perceived to solve a problem for the implementer; however, this advantage can be moderated by the effort required to implement the solution. If an intervention requires considerably more time and effort than the current practice, then willingness and ability to implement may be reduced. Effort has been identified as a significant variable in the acceptability of an intervention (Elliott, 1988). Time required to implement has been reported as the single largest determinant of acceptability (Witt, Martens, & Elliott, 1984) and is one of the most commonly cited reasons for failing to implement an intervention as prescribed (Dusenbury, Brannigan, Falco, & Hansen, 2003; Klingner, Vaughn, Hughes, & Arguelles, 1999). If an intervention requires more time than current practices, then the quality of implementation and obtained outcomes will likely suffer because teachers, who face significant time pressures, are unlikely to implement all of the components of the intervention.

Change itself is effortful. Riley-Tillman and Chafouleas (2003) have suggested interventions that slightly modify existing routines within a classroom are more likely to be implemented and sustained and that large-scale changes to the existing routines are more likely to be rejected. Large-scale efforts to change existing practices in a classroom are likely to fail because, from the perspective of the teacher, they represent significant effort. Current practices exist because they serve some function (i.e., they solve some problem for the teacher). Intervention always occurs in the context of a classroom's ecology and changing any aspect of that ecology will have both anticipated and unanticipated consequences. Minimizing changes to routines is least disruptive to the current classroom ecology.

Support of Opinion Leaders

In large-scale system change such as education reform, those introducing an innovation such as a new reading curriculum or framework for addressing academic and social behavior (e.g., SWPBS) to a school often are outside consultants and as a consequence have relatively little credibility or history with those responsible for implementation. Implementation is enhanced when “local champions” support consultant recommendations (Elliott & Mihalic, 2004). In SWPBS, outside consultants do not make the recommendations for specific interventions. Rather, they provide a framework for problem solving and rely on district- and school-based leadership teams, made up of credible persons from the school, to identify problems and develop solutions (Sugai & Horner, 2006). The general notion is that, those who are credible and have relationships with school personnel are most likely to successfully influence adoption and implementation practices of individuals in the school. The local champions are able to speak the language of the culture, share common values, and are valued by the members of the school culture. Their ability to shape and influence school practices is substantially greater as a consequence.

Interim Summary

This section suggests that educational innovations must be considered not in isolation but rather as part of the broad ecology of the educational system. To be successful, a reform effort must, from the beginning, involve those who are responsible for implementation in the selection of system changes. An intervention that is simply mandated can be undermined by refusals to implement or through implementation with low levels of treatment integrity. Ultimately, such an intervention is likely to be abandoned and replaced. If this cycle persists then there is little reason to hope that educational reforms will result in substantive change. Taxpayer dollars and student and educator time will have been wasted.

STRATEGIES TO INCREASE TREATMENT INTEGRITY

Promoting Intervention Acceptability and Contextual Fit

Acceptability of an intervention can be promoted by giving teachers choices about what practices to implement or by designing interventions that create as little disruption as possible in the existing classroom ecology (Detrich, 1999; Hoier, McConnell, & Pallay, 1987).

In an innovative approach to assuring high quality of implementation, Kern, Childs, Dunlap, Clarke, and Falk (1994) developed a menu of curricular modifications for improving an individual student’s academic performance and allowed teachers to choose which recommendations they would implement. The specific interventions chosen by each teacher were, by definition, acceptable to the teacher, and acceptability likely was a function of contextual fit with the routines of the classroom. This study highlights the importance of incorporating teacher preferences, involving implementers in decision making, and contextual fit when making intervention recommendations.

The means by which behavior support plans are developed substantially influences teacher ratings of their adequacy (Benazzi, Horner, & Good, 2006). Plans that were developed by teams including various school personnel were rated as more preferred, as fitting better with the local context, and as having better technical adequacy than were plans developed by a behavior specialist alone. The take-home message is that to increase the probability of

implementation, individuals who are seen as credible by the implementers should be part of developing the intervention plan. Relying on experts to assure that the interventions are technically sound is necessary, but technical adequacy is not sufficient to assure implementation. A technically adequate plan that is not implemented will not be effective. Similarly, a highly preferred plan that is not technically adequate will not be effective. Effectiveness requires both technical adequacy and implementation.

Teaching Implementation Skills

The most commonly used approach to increasing treatment integrity is staff training. The reasonable assumption underpinning this approach is that if staff members are taught about an intervention, then they will be able to effectively implement it. Most often, “training” consists of staff in-service or professional development days (Joyce & Showers, 2003) typified by a trainer lecturing to the staff audience about an educational innovation. In this format of training, unfortunately, there are few opportunities for staff to practice and receive feedback about implementation, so mastery of the innovation rarely is achieved. Joyce and Showers (2003) reviewed the effectiveness of staff development approaches and found that this traditional form of staff training does not reliably change what happens in the classroom.

Joyce and Showers (2003) found that staff training results in consistent implementation only if it includes coaching that takes place in the classroom. For example, in an effort to improve the quality of implementation of three reading programs, Vaughn, Hughes, Schumm, and Klingner (1998) developed a training model that included lecture about the reading programs, demonstrations in the classroom by an expert, coaching of the teachers in the classroom, and problem-solving meetings. The trainer was embedded in the school for the entire school year. A high quality of implementation was achieved by most of the teachers while coaching was in place, and the majority sustained implementation for the remainder of the school year. Several continued implementing the following year with at least moderate levels of integrity. Three years after coaching, nearly all of the teachers continued to implement at least one of the programs with at least moderate integrity (Klingner et al., 1999).

Coaching provides teachers with intensive and direct instruction in conceptual and procedural foundations of instructional practices as well as individualized feedback and support in the implementation setting (Wasik & Hindman, 2011). Effective coaching requires an expert demonstration of what is being coached, observing the teacher implementing the program, and feedback to the teacher (Wasik & Hindman, 2011). Applying this coaching model, Wasik and Hindman (2011) reported that Head Start teachers who received coaching performed better across all aspect of literacy instruction, implemented the instructional elements of the program with greater integrity, and their students had greater literacy achievement. In a 2-year project, Hindman and Wasik (2012) demonstrated that literacy coaching improved the instructional interactions of Head Start teachers and resulted in positive outcomes for students.

Providing Feedback Based on Treatment Integrity

Treatment integrity, once established, often does not maintain. It can decline quickly once acceptable criterion levels have been achieved (Duhon, Mesmer, Gregerson, & Witt, 2009; Noell et al., 2000). This suggests that instruction alone is not sufficient to obtain stable levels of treatment integrity. Also needed are consequence-based approaches, which involve action following the implementation of the plan.

Performance feedback is the most common consequence-based approach to treatment integrity (Noell, Duhon, Gatti, & Connell, 2002). Performance feedback has been used to increase integrity of implementation by individual implementers (Noell et al., 2000) and by problem-solving teams (Bartels & Mortenson, 2005; Burns, Peters, & Noell, 2008). Feedback has been used to prevent declines in integrity (Duhon et al., 2009) and as a means of reestablishing integrity once it declined (Witt, Noell, LaFleur, & Mortenson, 1997). It supports acceptable levels of treatment integrity when provided at different frequencies (daily or weekly), in different formats (written, verbal, graphically), and with different agents (individual teachers or problem-solving teams). The available data suggest that performance feedback is an essential feature of any effort to instate or maintain treatment integrity.

Antecedent variables, such as those that engineer acceptability and contextual fit, may be taken into account when planning consequence-based approaches. In a study evaluating the acceptability of feedback, methods differences were found for frequency of monitoring (weekly was acceptable; daily was not); source of feedback (principals although not unacceptable were significantly less preferred); the methods for providing feedback (discussing future problems more acceptable than discussing missed steps; discussing missed steps more acceptable than practicing those steps); and 1:1 feedback sessions were rated as acceptable relative to telephone, e-mail, and handouts (Easton & Erchul, 2011). These data suggest that when coaching and monitoring of teacher performance is part of the implementation plan, it would be wise to assess teacher preferences before beginning.

SCALING UP TREATMENT INTEGRITY

Scaling up refers to implementing a reform effort on a broad scale involving many schools and the many personnel and settings they represent. Most research demonstrations of increasing and maintaining treatment integrity have taken place under circumstances that rarely are reproduced in field settings. The studies often have involved a relatively small number of participants; have employed external resources (e.g., academic research teams) to provide supports like, training, coaching, and feedback; and have taken place over a relatively brief time. If education reform efforts are to be successful, then it is necessary to find ways to use only the existing resources of local schools and school districts to support all teachers in implementing interventions with integrity, regardless of whether the interventions are large, multicomponent packages such as instructional programs, school-wide behavior support plans, or individual support plans developed by problem-solving teams. Reform depends on all teachers in all schools implementing with integrity to improve in student achievement. In this section, a data-based decision-making model is proposed that recognizes resource limitations and incorporates what is known about treatment integrity and effective practices for increasing the quality of implementation.

Given the limited resources in most schools, any approach to supporting treatment integrity will require the judicious use of existing resources. A multitiered system of support for those responsible for implementation allows resources to be allocated where they are needed and when they are needed. The proposed approach to promoting treatment integrity closely mirrors response to intervention (RtI) approaches to influencing student behavior and achievement. RtI is a multitiered, data-based decision-making approach to determining the intensity of services required for an individual student to make progress (Daly, Martens, Barnett, Witt, & Olson, 2007). Much like SWPBS, in RtI, all students receive universal

instruction, ideally, with a scientifically based instructional package. If a student is not benefiting from the universal instruction, then supplemental supports, such as extra instructional time, are provided to the student. If the student is still not making satisfactory progress, then more intensive interventions, such as instruction with an alternative curriculum, are provided. Data about the student's academic performance determine the intensity of support. The same logic is applied to supporting staff in implementing an educational intervention. Myers, Simonsen, and Sugai (2011) have provided some empirical evidence of this model. In their study, a multitiered system of support was used to increase the frequency and quality of teacher praise. All teachers were trained on the importance of praise and the features of it. Following training, all teachers were monitored, and those that failed to meet performance criteria were placed in a more intensive support condition in which they were given feedback on a weekly basis regarding their rates of praise. If a teacher benefitted from this level of intervention, then nothing further was required. If there was not sufficient improvement in teacher praising, then an even more intensive intervention was introduced, which involved feedback on a daily basis, overt scripts to follow, and a daily discussion with the researcher to clarify any issues that arose. If a teacher was responsive to this level of intervention, they were returned to weekly feedback. Importantly, teacher behavior, rather than some predetermined plan, dictated the intensity of support for treatment integrity.

Adjustments would be required to scale this data-based decision-making model to the level of a school or a district without overburdening existing resources. For example, instead of first measuring teacher performance, student performance might be measured as per Figure 1. If the evidence shows adequate student progress, then no intervention is required. On some occasions, students may benefit from instruction even though the teacher is not implementing with adequate levels of integrity but withholding treatment-integrity intervention frees up limited school resources to work with teachers whose students are not making adequate progress (in the following text). As discussed earlier, although intervention is not recommended at this juncture, it is important to continue monitoring student performance. If a teacher is not implementing with integrity, student scores may eventually indicate a need for intervention.

Standards can be established so that it is not necessary for all students make adequate progress for a teacher to be considered as implementing with integrity. For example, if 80% of all of the students in the class are performing adequately on measures of academic and social performance, then no further intervention at the level of the teacher might be required. Instead, extra support can be provided to students who are not making progress, but the teacher is presumed to be implementing with reasonable effectiveness. If less than 80% of the students are making adequate progress, then the teacher's level of treatment integrity can be formally evaluated. If the intervention is being implemented with integrity, then it should be revised. If not, then boosting integrity is required before any judgments can be made about the success of the intervention.

Once it is clear what aspects of implementation require additional teacher support, intervention plans can be developed. The logic is to move from a least- to more-intensive model of support. An early level of intervention is performance feedback. Failing to respond to performance feedback may suggest that the teacher does not have the skills necessary to implement the intervention. If this is the case, then training must supplement feedback. If teachers benefit from this level of intervention as measured by improvements in implementation scores and ultimately, student performance, then no other support for teachers is required. If there is insufficient benefit, then more intensive types of support will be necessary.

CONCLUSIONS

For quite some time now, the world of education has been trapped in a recursive cycle of reform, abandon, and reform again, without any obvious improvement in the student outcomes that reform efforts target. Future-directed action, such as that inherent in education reform, depends on trustworthy perceptions of the present, and it may be argued that the “serial reforming” of contemporary education stems in part from a failure to attend to treatment integrity. Intelligent decisions about whether a new reform effort is required depend on a clear sense of how well a current reform is being implemented because this information is essential to determining whether the reform is working.

Fortunately, it is becoming widely understood that innovations must be implemented with integrity to have a chance of improving educational outcomes. Unfortunately, high-quality implementation does not automatically happen without active support of implementers (Duhon et al., 2009; Noell et al., 2000). The disconnect between attitudes and action was evident in a survey of school psychologists, in which 98% reported that measuring treatment integrity was important, but only 2%–11% actually measured treatment integrity while consulting on cases (Cochrane & Laux, 2008). Clearly, measuring treatment integrity is not common practice in schools—and measurement is only the starting point in promoting treatment integrity.

This article proposed an approach to treatment integrity that is sensitive to resource constraints, but the approach, to be properly implemented, would require certain changes in how educational systems operate. Resources must be allocated to measure integrity. Competent individuals must be made available to provide training and coaching to support teacher treatment integrity. A means must be developed to assess the degree to which training and coaching themselves are implemented with integrity. Producing better outcomes for students, by producing better implementation by teachers, requires a broad-scale change in how the system operates. Thus, implementing a data-based decision-making approach to the support of treatment integrity is itself a systems-level intervention. For this intervention to be implemented with integrity requires harnessing the same principles that apply to effective implementation by teachers and others who work directly with students.

All reforms require the investment of time and resources. The recent history of educational reform often is described as a series of bad investments, but whether most past reforms were effective is unclear because the extent to which they were implemented properly also is unclear. As with past reforms, considerable investment would be necessary to make systems-level changes that will weave treatment integrity monitoring and support into the fabric of educational systems. This would be the most prospective of investments, however, the goal is to assure that *every* future reform directly targeting student outcomes is devised in response to the an accurate understanding of the successes and failures of current educational practices.

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