Handbook of Evidence-Based Interventions for Children and Adolescents

Lea A. Theodore
Editor
Handbook of Evidence-Based Interventions for Children and Adolescents
Lea A. Theodore, PhD is a Psychologist Licensed by the Board of Psychology in New York and Virginia. She is a Full Professor in the Graduate Program in School Psychology Program at the College of William and Mary. She has worked in private practice and consults in public and private schools, hospital, and behavioral health centers. Since receiving her doctorate from the University of Connecticut in 2002, she has published or has in press approximately 70 refereed articles and chapters, and has conducted numerous invited and peer-reviewed presentations at national conferences. Dr. Theodore received the Early Career Alumni Award from the University of Connecticut in 2009, in part because of her national ranking as one of the top 20 most productive authors in school psychology. She was Associate Editor for School Psychology Quarterly (2007–2012), one of the top-tier journals in the field, and currently sits on the editorial boards of several national and international educational and psychological journals where she provides professional reviews of manuscripts. Her scholarship and her practice focus on promoting science, practice, and policy relevant to psychology and education. Dr. Theodore’s research, in particular, focuses on the development of effective and efficient intervention strategies to improve students’ academic and behavioral functioning, which is critically important to the field.

Dr. Theodore is active in Division 16 (School Psychology) of the American Psychological Association (APA), for which she has served as Division co-chair and chair of the APA Annual Conference Hospitality Suite, co-chair and chair of the Division’s Annual Convention program, and as a member of the Conversation/Videotape Series committee. Dr. Theodore extended her contributions to APA in nationally elected positions, including Vice-President of Division 16 Membership (2006–2008), Vice President of Professional Affairs (2009–2011), and is currently the President of the Division of School Psychology, additionally serving on the Division’s Executive Committee. Further, Dr. Theodore served as the APA Representative to the Public Interest (PI) Directorate Network and was invited to serve as the Division’s representative to co-write the 2012 School Psychology Petition to the Commission for the Recognition of Specialties in Professional Psychology (CRSPP) within the APA. As an advocate for mental health services, Dr. Theodore lobbied legislators on Capitol Hill for the passage of the Mental Health Parity Act in 2008, and most recently, the Mental Health Reform Act (S. 1945) and Helping Families in Crisis Act (H.R. 2646) in November, 2015. She has received several Outstanding Service awards and recognitions from the American Psychological Association for her vast contributions.
For my mother, Maria P. Theodore, a simply extraordinary woman whose grace, intellect, gentle kindness, humility, integrity, and giving spirit have made me the woman I am today.
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Tremendous progress has been made over the past three decades in the area of evidence-based interventions and practices. As a long-time champion of the evidence-based practices movement in psychology (American Psychological Association Task Force on Evidence-Based Practice for Children and Adolescents, 2008) and school of psychology in particular (e.g., Kratochwill & Stoiber, 2000; Kratochwill & Shernoff, 2004), I was delighted to be invited by Lea Theodore to write a foreword for this major and significant contribution to the scientific literature. The *Handbook of Evidence-Based Interventions for Children and Adolescents* (hereafter called the *Handbook*) represents another milestone in progress in the social sciences and education in evidence-based practice. This work is not a handbook of best practices; it is a handbook of empirical practices and there is a very major difference. In this regard, evidence-based interventions are not designated only through expert opinion or consensus. Evidence-based practices, as the term implies, are based on scientific evidence, usually quantitative experimentation that has allowed the testing of the intervention or procedure under conditions that invoke strong causal inference for their effectiveness.

On review of this work and reflection on the significance of the contribution, I believe that this *Handbook* will impact at least three major areas of professional work in psychology, mental health, and education. First and foremost, the impact will be in the area of professional practice. The contributing chapter authors present major updates on the interventions for a wide range of childhood disorders and problems. And these are interventions that advance our options for making a very significant difference in the lives of children and families. This *Handbook* is also comprehensive, with coverage of childhood problems that occur across most clinical and applied settings, such as schools, clinics, medical centers, and community settings. In this regard, this *Handbook* will be of tremendous relevance and application for psychologists in practice in multiple specialty areas as well as for other mental health professionals who wish to provide the best mental health and educational services that we have available.

Second, this *Handbook* will impact research on evidence-based interventions. With the empirical focus of the contributions to this work, it is clear that we have intervention benchmarks that can be used with a high probability of positive outcomes. But contributors have been able to identify areas where research is needed to either expand the effectiveness of procedures and/or where critical research work must be done to advance knowledge in the range of applications. In many cases, the contributing authors have also identified issues that impact implementation of evidence-based interventions in their areas of focus. In implementation work we are learning not only of options for customizing and accommodating evidence-based interventions but also factors that must be addressed when these interventions are adopted, scaled up, and sustained in practice settings (Forman, 2015). And we are now seeing numerous options for research methodology on implementation science, including our traditional randomized clinical trial studies and single-case research designs. Moreover, in future work, we must invoke replication studies and new methodologies for understanding our intervention protocols; moving forward will require the use of mixed methods to more fully understand how best to implement these interventions in clinical and applied settings.
Third, this Handbook provides a rich curriculum for training the next generation of graduate students in evidence-based practice. The focus on quality graduate training in evidence-based practices must be a major agenda for psychology and related fields (Kratochwill, 2007). Graduate training is a key leverage point for making a significant impact on the wide range of mental health and educational problems of our youth; but, graduate training programs in psychology and related fields have significant challenges in this work. For psychology graduate training programs, the challenges include how evidence-based interventions are packaged and structured, researchers’ understanding of how culture affects efficacy, and continual shifts in evidence-based practice designations. To address the challenges ahead, we (Shernoff, Bearman, & Kratochwill, in press) made some “policy recommendations” that are relevant to the theme and focus of this Handbook:

- We suggested that developing graduate students’ technical skills in delivering evidence-based practices is as equally critical as developing proficiency in functioning as evidence-based providers, and professional training and practice standards should reflect both domains of training as well.
- We recommended that professional training standards reflect the urgent need to ensure that practicum students and interns continue to have exposure to and experience with evidence-based practices during these formative training experiences.
- Prioritizing common elements (i.e., those elements that are common to many evidence-based interventions) over entire training curricula can streamline how mental health programs are organized and may avert clinical and applied setting organizations from investing scarce resources in purchasing all manualized interventions with overlapping content.
- Although dissemination and implementation models do not have a strong presence in our professional practice guidelines, training in such models can enhance the way in which information about mental health practices spreads in applied and clinical settings and can facilitate the development of shared norms and values regarding mental health interventions that are delivered.

Lea Theodore and the contributors to this Handbook have done a great service to the mental health and education fields. Their work will have far-reaching positive impact on practice, research, and training and, ultimately, on serving the mental health needs of children and adolescents.

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REFERENCES


THE EVOLUTION OF EVIDENCE-BASED INTERVENTIONS: BRIDGING RESEARCH AND PRACTICE

According to the eminent scholar W. Edwards Deming (http://www.goodreads.com) “It is not enough to do your best; you first have to know what to do and then do your best.” This quote underscores the significance of evidence-based practice or interventions that have been documented to be effective through empirical support. The application of evidence-based practice leads to consistent and efficacious service provision within the helping professions by guiding well-informed decision making. Empirical, replicated, research-based evidence is the foundation of science; for scientist-practitioners, providing evidence-based interventions is the sine qua non. For schools, children, and families, evidence-based interventions are the basis of augmenting children’s and adolescents’ intellectual and emotional functioning, and a healthy lifelong development. Investigating the evolving base of scientific knowledge in effective practices is a movement that has been implemented in medicine; education; and clinical, counseling, and school psychology. Mental health professionals are at the forefront of providing ameliorative services to children, adolescents, and families; it is important to note that it is the use of evidence-based interventions that is the hallmark of sound, effective professional practice.

A southern anecdote succinctly captures the importance of meaningful interventions. The saying goes, “You can weigh a pig ten times a day, but if you don’t feed it, it ain’t gonna grow any bigger.” Mental health professionals have long been experts at providing diagnostic and prognostic assessments in diverse areas such as information processing, intellectual functioning, academic achievement and skill development, personality development, and so on. These assessments contribute immensely to our understanding of the individual differences and psychosocial development of children and adolescents. However, it is only the subsequent application of effective interventions designed to ameliorate diagnosed deficits and overcome deleterious prognostications that ultimately contribute to children’s overall healthy development. Hence, although diagnostic and evaluative information sheds essential light on the overall functioning of the child, including personal strengths and weaknesses, it is ultimately effective treatments that are most needed—it is not only feeding the pig, but also feeding it a “proven diet” that helps it grow bigger and stronger!

Although many graduate programs in the helping professions teach students which interventions are known to be effective, programs very rarely train their students how to implement those very same practices. That is, students seldom implement the specific treatments they learn about because they seldom learn how to do so. Failure to select and implement appropriate evidence-based interventions is dangerous because instructional practices, academic accommodations, medication recommendations, and restrictive behavioral procedures and behavioral placements are often based on the premise that programs or interventions will resolve the presenting problems. Failing to “feed the pig,” or failing to intervene effectively after assessing and diagnosing deficits, also results in compounded adjustment difficulties or psychosocial problems in children and adolescents. For
instance, in addition to failing to resolve the referral issue, ineffective treatments may contribute to a wide range of progressive and compounding intrapersonal problems (e.g., depression, substance abuse), interpersonal social-psychological difficulties (e.g., interpersonal relationships, peer rejection), or negative academic outcomes (e.g., poor academic achievement, increased absenteeism, school dropout). These adverse factors impede children’s and adolescents’ healthy development. The culmination of these unresolved and exacerbated psychosocial issues can result in a life of seriously diminished quality. Simply said, the personal and societal costs of not intervening or intervening ineffectively cannot be underestimated.

The Handbook of Evidence-Based Interventions for Children and Adolescents focuses on applied, empirically supported interventions proven to make significant contributions to the practice and preparation of professionals in school, counseling, clinical and child clinical psychology, social work, special education, school counseling, and speech and language pathology—that is, helping professionals working in school and clinical settings. The need for such a book is based on three significant limitations of extant intervention-oriented books and handbooks:

1. Other books tell the reader which interventions to employ, but fail to explain specifically how to implement them.
2. They focus on single contexts or settings (i.e., either school-based interventions or those that may be implemented in a clinical setting).
3. They focus on a too specific, narrowly defined list of topics.

The Handbook of Evidence-Based Interventions for Children and Adolescents counters these three cited limitations. First, the book is a comprehensive treatment of the most salient issues that mental health professionals face in educational and clinical settings (e.g., school crisis and response, educational issues and disorders, childhood psychopathology, social and emotional functioning, physical- and health-related disorders, neuropsychological disorders). Second, it provides practitioners with empirically supported interventions, as well as step-by-step methods that illustrate how to implement these interventions with children and adolescents. Third, the interventions addressed in the book may be employed by a diverse collection of professionals in the schools, as well as those working in private practice and community and mental health settings. The book provides readers with a clear, empirically supported connection between intervention research and practice throughout the helping professions.

With the most salient intervention-related topics and issues facing mental health professionals written by undisputed leaders in their respective fields, this compilation of chapters is dedicated to empirically supported interventions in school, counseling, clinical and child clinical psychology, social work, special education, and school counseling. The Handbook of Evidence-Based Interventions for Children and Adolescents has been organized into six broad sections: School Crisis and Response, Educational Issues and Disorders, Childhood Psychopathology, Social and Emotional Functioning, Physical- and Health-Related Disorders, and Neuropsychological Disorders, with each chapter focusing on immediate and relevant issues that individuals working with children encounter. Each chapter begins with an overview and a summary of the base of evidence for interventions vis-à-vis each topic. Serving as a theoretically derived, yet practical resource for school- and clinic-based professionals, the final part of each chapter provides evidence-based interventions with practical step-by-step guidance in intervention implementation and examples of application. By providing mental health professionals with sound, evidence-based interventions in a cogent, step-by-step manner, the gap between research and practice is bridged, thereby leading to improved academic, social, and emotional adjustment and/or functioning of children and adolescents, ultimately resulting in sound intervention science and practice by not only describing which interventions are best suited for specific disorders, but also by providing guidelines for how best to implement those procedures. Hence, the focus is on the practical aspects of helping children and adolescents by providing interventions for practitioners to implement, ultimately giving them the option of employing
what also works with their unique and individual strengths as helping professionals as well as a “best fit” for children.

Although evidence-based practice is critical in helping children, we also need continued research efforts, researchers with innovative ideas that may be tested and retested to promulgate evidence-based interventions so that the field does not grow stagnant. Continued research regarding the most effective and research-based methods are integral to not only supporting children, but cultivating and developing healthy adults as well. By enhancing the lives of children, we may teach children the capacity to overcome, endure, and transform into resilient, prosperous individuals. These are the efforts and attributes that this Handbook seeks to espouse.

Lea A. Theodore
Special thanks to Nancy Hale, Editorial Director, who believed in my concept for this book and the practical utility that it holds for all mental health professionals. Her excitement about this project paralleled my own. I am most grateful for her positive encouragement and expert editorial guidance, which facilitated the coordination of this endeavor.

For Dr. Bruce A. Bracken: When I shared my idea of developing this book, which I had since 2004, I never imagined how much you would encourage me to bring this dream to fruition. From its inception to completion, you have been my biggest supporter, mentor, and sounding board. This work would not have been possible without your expert guidance and thoughtful edits. Your active support is a gift for which I will always be grateful.
Introduction
Treatment Integrity: Evidence-Based Interventions in Applied Settings

Lisa M. Hagermoser Sanetti and Melissa A. Collier-Meek

OVERVIEW

Today’s community and educational contexts require the selection, adoption, implementation, and evaluation of evidence-based interventions, treatments that have been proven to be effective in multiple outcome evaluations. Various initiatives for reform in mental health settings and education-related laws (e.g., 2001 reauthorization of the Elementary and Secondary Education Act), movements (e.g., multitiered systems of support), government agencies (e.g., Institute of Education Science’s Doing What Works and What Works Clearinghouse resources), and professional organizations (e.g., National Association of School Psychologists, Council for Exceptional Children) advocate evidence-based interventions as the foundation of service delivery for children and adolescents with academic, behavioral, and social-emotional problems. For these evidence-based interventions to benefit youth, they must be implemented in practice as they were during their validation. The extent to which interventions are implemented as planned is referred to as treatment integrity (also referred to as “treatment fidelity,” “procedural reliability,” “procedural fidelity,” or “treatment implementation”; Sanetti & Kratochwill, 2009a). Collecting, analyzing, and evaluating treatment integrity data, along with child outcome data, are critical to ensuring the validity of decisions made about intervention effectiveness.

Attention to the role of treatment integrity for data-based decision making has increased significantly over the past 5 years (McInerney & Elledge, 2013). A child’s response to evidence-based interventions that are implemented as planned is evaluated to determine whether the current intervention should be continued, discontinued, or replaced by a more or less intensive intervention. Currently, most decisions regarding the effectiveness of child interventions are made with only progress-monitoring data (Cochrane & Laux, 2008). These decisions assume that the intervention has been consistently and completely implemented as intended. However, most intervention research indicates that interventions are not employed with adequate treatment integrity (Noell et al., 2005; Noell, Witt, Gilbertson, Ranier, & Freeland, 1997). Unfortunately, if a treatment is not implemented with fidelity, inaccurate decisions regarding the child are often made. Invalid and incorrect intervention decisions cause high costs for children (e.g., inappropriately restrictive or intensive interventions and placements) and systems (e.g., time of personnel selecting intervention, resource costs of high-intensity interventions). To make accurate decisions about a child’s response to an intervention, it is essential to evaluate both progress-monitoring data and treatment integrity data, and to
promote higher levels of treatment integrity when needed (Kilgus, Collier-Meek, Johnson, & Jaffery, 2014; Sanetti & Kratochwill, 2009a).

There are myriad interventions being implemented within multitiered systems of support and across various service contexts (e.g., community and clinical settings, juvenile justice) with limited resources available for intervention evaluation. It is essential for those who are implementing or evaluating interventions to systematically decide how best to assess, analyze, and promote treatment integrity (Barnett, Hawkins, & Lentz, 2011). This chapter provides an overview of treatment integrity assessment foundations, guidelines for developing a treatment integrity assessment plan, analyzing treatment integrity and child outcomes together, and promoting treatment integrity. Together, this information may facilitate the development of high-quality, feasible, and defensible intervention evaluation in applied contexts.

TREATMENT INTEGRITY ASSESSMENT FOUNDATIONS

In the following subsections, an overview of the current conceptualization of treatment integrity as a multidimensional construct, as well as commonly used assessment methods and possible response formats, is discussed.

Dimensions

Over the past decade, scholars have proposed that treatment integrity is multidimensional (Sanetti & Kratochwill, 2009a), and emerging evidence suggests that these dimensions have evaluation utility (Sanetti & Fallon, 2011). The primary dimension is adherence, or the extent to which intervention steps are implemented as planned. Adherence is a prerequisite for other relevant dimensions (e.g., quality, frequency, and duration), which cannot be assessed unless an intervention is implemented. When an intervention is implemented, it may be relevant to evaluate quality, or the competence with which intervention steps are implemented. Moreover, it may be useful to evaluate the frequency and duration of intervention sessions. To highlight the relationship among adherence, duration, and frequency, consider an intervention that is implemented once a week for 30 minutes. A review of progress-monitoring data suggests that the child is not going to make his or her goal. Adherence, frequency, and duration data are collected and indicate that adherence was high and the intervention was competently delivered as intended (every Tuesday for 30 minutes). However, the child attended the group only 6 of the past 10 weeks (i.e., frequency), and left 10 minutes early on 2 days (i.e., duration). Adherence data would indicate whether the intervention sessions were implemented as planned. Frequency and duration data would identify that the child was exposed to only 53% of the intervention (160 minutes of instruction). Analyzing adherence, frequency, and duration data together would result in different conclusions about the implementation of the intervention and the child’s response than if only adherence data were collected (i.e., the intervention was implemented with fidelity, but the child had not received the intervention with sufficient frequency and duration to benefit). Although it may be simpler to collect only adherence data, this brief case example highlights the importance of gathering treatment data on frequency and duration. A comprehensive treatment integrity evaluation process will likely result in more accurate decision making when multiple dimensions of treatment integrity are considered rather than a single dimension.

Assessment Methods

Given the nascent nature of the treatment integrity literature base, there are few formally validated measures of implementation. Some packaged interventions include a treatment integrity measure (e.g., Good Behavior Game; Embry, 2003); however, the vast majority of interventions do not, and practitioners are left to create their own treatment integrity measures. The most commonly used methods include direct observation of implementation, evaluation of permanent products that result from implementation, and self-report of implementation (Sanetti & Kratochwill, 2009a). These methods vary considerably with regard to several characteristics, including the (a) frequency with which the method can be completed; (b) ability of the method to include all intervention steps (e.g., there might
not be a permanent product for every intervention step); (c) defensibility of the method (e.g., directness, empirical support, reliability data); (d) time, training, and personnel necessary to complete the assessment; and (e) intrusiveness of data collection. The basic procedures and advantages and disadvantages of each are briefly discussed here followed by a general description of response formats, or the rating options commonly used for each (see Sanetti et al., 2014 for more detailed discussion of treatment integrity assessment).

Direct Observation. One of the most commonly used methods for measuring treatment integrity is direct observation (Lane, Bocian, MacMillan, & Gresham, 2004). This method requires the intervention to be divided into a comprehensive list of discrete, observable, and measurable intervention steps. Next, it is important to determine how and when implementation will be rated during an observation (e.g., partial interval recording throughout, global ratings at conclusion of observation period), who will complete the observations, whether observer training is needed, if inter-rater reliability observations will be completed, and how and when to schedule observations (e.g., when is the intervention being implemented, how frequently will implementation be observed). There are no empirically supported guidelines for making these decisions; rather, considerations related to feasibility, reliability, and evaluation utility should drive decision making (see “Developing a Treatment Integrity Assessment Plan” section of this chapter).

Direct observation is a highly flexible assessment method. That is, it is relatively simple to create treatment integrity instrumentation and observation procedures that meet the needs of a variety of interventions (e.g., academic, behavioral, social-emotional). Furthermore, depending on the intervention, adherence, quality, frequency, and duration may all be able to be measured using this method (Sanetti & Collier-Meek, 2015). Direct observation is the most direct form of treatment integrity assessment, and is the most defensible when high-stake decisions (e.g., movement to a more intensive intervention, referrals for special education) need to be made. Unfortunately, direct observation is also highly resource intensive with respect to the time required for conducting observations and training observers. Furthermore, having someone physically in the intervention setting may alter the behavior(s) of those being observed and may not be acceptable to the individual implementing the intervention. Finally, depending on the scope of the intervention, it may not be possible to observe all aspects of intervention implementation (e.g., behavioral support plans implemented throughout the day; interventions implemented across home and school).

Permanent Product Review. Permanent product review is another method that has been frequently used to assess treatment integrity in school-based research (e.g., Noell et al., 2005). This method requires the collection of products that naturally result from intervention implementation. First, as with direct observation, the intervention is divided into a comprehensive list of discrete, observable, and measurable intervention steps. Next, the products that result from implementation are considered and mapped onto intervention steps, and decision rules for how products will be rated are determined. For instance, completed ratings on a child’s daily self-monitoring form may indicate that a child was given prompts and adequate time to rate his or her behavior throughout the day.

Permanent product review can be a relatively time-efficient and comprehensive treatment integrity assessment method, as it does not require additional time on the part of the implementer and all instances of implementation can be sampled with minimal intrusiveness and reactivity (Lane et al., 2004). Interventions with forms (e.g., self-monitoring, Check-in Check-out) or worksheets (e.g., academic math problems) are well suited for permanent product review. The collection and analysis of the products may require some training, but could be completed by a variety of individuals in an applied setting. That said, many interventions simply do not result in products that could be used, or result only in products for a small subset of intervention steps. Even for those interventions that are well suited to permanent product review, the collection and analysis of the products may be time intensive, and often quality of implementation cannot be measured based on products.

Self-Report. Self-report is the most commonly used method of treatment integrity assessment by school professionals (Cochrane & Laux, 2008).
Similar to direct observation, this method requires the intervention be divided into a comprehensive list of discrete and measurable intervention steps. Next, how the individual implementing the treatment rates each step as well as when and how often observations will be completed need to be determined.

As with direct observation, self-report instrumentation may be designed for almost any intervention. Further, it offers considerable flexibility in format (e.g., checklists, narrative notes) and delivery (e.g., paper and pencil, e-mail, electronic fill-in forms), is highly resource efficient, can target multiple dimensions of treatment integrity, may be completed frequently, and requires minimal training. Despite these benefits, much of the available research suggests that most individuals implementing an intervention (herein after called “implementers”) will overestimate their level of adherence, resulting in data that are not accurate (e.g., Noell et al., 2005). There is some more recent evidence, however, to suggest that daily self-report (Sanetti & Kratochwill, 2011) and intervention training (Fallon, personal communication, 2014) can result in more accurate self-report data. These results are consistent with the self-report literature in medicine (Riekert, 2006); thus, it may be that accurate self-report data can be obtained, but that additional research is needed to identify the variables related to self-report that increase accurate responding. For example, medical researchers have found increased self-report accuracy when there is a shorter rating period (e.g., daily vs. weekly rating), implementers are informed that inconsistency in treatment integrity data may occur, and that these data are not being used to judge the implementer (Riekert, 2006). Self-report of treatment integrity should be used only when low-stake decisions (e.g., ensuring Tier 1 implementation: Response to Intervention) will be made with the data or in combination with other treatment integrity assessment tools.

**Response Formats**

Once a format of the treatment integrity assessment method has been chosen and the intervention steps have been operationally defined (and, for permanent product review, products have been mapped to intervention steps), response formats must be determined. Just as there are different options for the treatment integrity assessment method, there are different options for the response format for each intervention step. The response format selected depends on the treatment integrity dimension (e.g., adherence, quality) and specificity of information to be collected (Table 1.1).

For adherence, across all methods, a simple occurrence/nonoccurrence or present/absent rating could be used. Alternatively, across all methods, adherence could be rated more globally using a Likert-type scale, such as (a) implemented according to plan, (b) implemented with deviation, (c) not implemented despite an opportunity for implementation, or (d) no opportunity/not applicable (Sanetti & Collier-Meek, 2015). Quality data are typically available only from direct observation and self-report methods, and are often collected using a Likert-type scale such as (a) 4 = excellent, “step implemented skillfully as indicated by: appropriate interaction, smooth/natural looking, appropriate timing, and competent implementation”; (b) 3 = good, “step implemented adequately, but in a less skillful manner; step somewhat flawed in at least one of the indicators under ‘excellent’”; (c) 2 = fair, “step implemented poorly in a manner that is inadequate or seriously flawed in at least one of the indicators under ‘excellent’”; (d) 1 = poor, “step implemented poorly, with none of the indicators under ‘excellent’” (Sanetti, Kratochwill, & Long, 2013, p. 61). For frequency and duration, an observer or implementer may provide a narrative response regarding the duration of the intervention (e.g., start and end times) or rate that the intervention occurred within a specific duration (e.g., greater than or equal to 20 minutes, less than 20 minutes; between 16–20 minutes, 21–25 minutes, and 26–30 minutes). When permanent product review is used, the number of products can provide an estimate of frequency and duration for an individual intervention. For group or class-wide interventions, the target child’s attendance may provide information about frequency and duration. Regardless of assessment method, it may be informative to provide an area for the observer or implementer to make notes about any implementation deviations, barriers, or facilitators that may inform adjustments to the intervention or treatment integrity support.
TABLE 1.1

<table>
<thead>
<tr>
<th>Treatment Integrity Assessment Methods</th>
<th>Dimensions of Treatment Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adherence</strong></td>
<td><strong>Quality</strong></td>
</tr>
<tr>
<td>Direct observation</td>
<td>• Occurrence/nonoccurrence</td>
</tr>
<tr>
<td></td>
<td>• Likert scale with behavioral anchors</td>
</tr>
<tr>
<td></td>
<td>• Likert scale with behavioral anchors</td>
</tr>
<tr>
<td></td>
<td>• Narrative response re: number of minutes/sessions</td>
</tr>
<tr>
<td>Permanent product review</td>
<td>• Present/absent</td>
</tr>
<tr>
<td></td>
<td>• Likert scale with behavioral anchors</td>
</tr>
<tr>
<td></td>
<td>• Narrative response</td>
</tr>
<tr>
<td>Self-report</td>
<td>• Occurrence/nonoccurrence</td>
</tr>
<tr>
<td></td>
<td>• Likert scale with behavioral anchors</td>
</tr>
<tr>
<td></td>
<td>• Narrative response</td>
</tr>
</tbody>
</table>

DEVELOPING A TREATMENT INTEGRITY ASSESSMENT PLAN

The following is a multistep process for: (a) identifying the purpose for collecting treatment integrity data, (b) determining the intervention level and type of treatment integrity data needed, and (c) considering the level of risk for implementation failure and erroneous decisions.

Purpose of Assessment

The first step when considering treatment integrity assessment is to identify the purpose for the implementation data. Although treatment integrity is often discussed with respect to data-based decision making, there are other purposes for collecting treatment integrity data, such as evaluation, diagnostic decision making, progress monitoring, and screening (Chafouleas, Riley-Tillman, & Sugai, 2007). When evaluation is the purpose, the goal is to obtain a global, summative snapshot of implementation, meaning that the overall implementation of a curriculum may be assessed to determine whether a policy is being carried out appropriately. When diagnosis is the purpose, the goal is to assess treatment integrity to ensure that high-stakes decisions about a child’s classification based on intervention response are valid (e.g., team evaluating a child’s response to intensive intervention to determine if the child should be considered for special education classification). When progress monitoring is the purpose, the goal is to assess treatment integrity for a specific intervention to ensure valid, data-based decisions can be made regarding child support services (e.g., school team monitoring ongoing interventions that are lower stakes to make data-based decisions regarding appropriate...
level of intervention). When screening is the purpose, the goal is to identify those implementers who are at risk of or are demonstrating poor intervention implementation so that decisions can be made regarding professional development needs (e.g., collect data on teachers’ classroom management strengths and weaknesses so that targeted support can be provided).

**Type of Data Needed**

The second step is to consider, given the purpose of the assessment, what type of treatment integrity data need to be collected. For example, if an individual is developing a treatment integrity assessment plan for a child or adolescent with a history of not responding to Tier 2 or small group interventions, who is transitioning to a more intensive Tier 3 intervention, professionals may want to collect adherence, quality, duration, and frequency data given the importance of fully understanding all possible reasons for the child’s response or nonresponse (e.g., poor adherence, inadequate exposure, and highly variable quality of intervention delivery). Alternatively, mental health professionals may screen all teachers’ use of behavior-specific praise to evaluate their implementation of this important classroom management practice. Following this evaluation, professionals may collect more specific treatment integrity data (e.g., adherence, quality, frequency) to determine which teachers need differential support to improve their classroom management.

**Intervention Level**

The third step is to consider what intervention level is being assessed. For example, a mental health professional may assess the implementation of a curriculum or delivery of a particular intervention. It is important to consider the level of intervention (i.e., Tiers 1, 2, 3), the level of risk of not implementing an intervention, as well as the scope of assessment. The implementation of a Tier 1 school-wide curriculum, for example, will require all teachers to be evaluated, address all children’s needs simultaneously, and have appropriate resources. In comparison, an intensive, individualized intervention (Tier 3) will require fewer resources as only one teacher will be involved, may have variable intervention complexity, and has the situational risk of being evaluated for special education.

**Level of Risk**

The fourth step is considering both (a) the risk for implementation failure and (b) the risk of harm resulting from implementation failure (Barnett et al., 2011). Risk of implementation failure is often assessed relative to intervention complexity (e.g., Sanetti, Gritter, & Dobey, 2011). That is, the more complex the intervention, the higher the risk that the intervention will not be implemented as planned. An intervention may be made more complex due to: (a) the number of intervention steps, (b) whether the intervention is implemented in the same manner each time, (c) the number of individuals who need to implement the intervention, or (d) the environment of intervention delivery.

Another type of risk that varies across interventions is situational risk. As defined by Barnett and colleagues (2014), “Situational risk is an estimate of harm or cost to a child or others if the intervention is not carried out adequately” (p. 101). Mental health professionals regularly design and implement interventions with high situational risk, such as those related to child academic failure, possible special education classification, behavioral or social-emotional diagnosis, self-harm, and harm to others. Furthermore, interventions that are large in scope, such as those that involve entire communities or school populations, may be considered to be of high situational risk due to the large scale of the potential harm if they are not implemented well. When situational risk is considered to be high, a treatment integrity assessment plan should be multimethod (e.g., direct observation and self-report) with immediate, high-frequency data collection and evaluation (Barnett et al., 2011). Situational risk may be considered to be moderate during the initial implementation of an intervention, especially if the implementer is not familiar with the intervention. When situational risk is moderate, a treatment integrity assessment plan may be multimethod with immediate, high-frequency data collection and evaluation during the initial implementation phase, which is faded to less frequent, single-method (e.g., direct observation) treatment integrity assessment once adequate implementation and positive child outcomes are demonstrated. Finally, situational risk may be considered to be low when an intervention has been in place for a while, child outcome data have been consistently positive, and treatment integrity data have
been consistently adequate. When situational risk is low, a treatment integrity assessment plan may include less frequent, single-method assessment.

**ANALYZING ASSESSMENT OUTCOMES**

Once a treatment integrity assessment plan is developed and treatment integrity and child outcome assessment data are being collected as planned, it is necessary to evaluate these data to make valid, data-based decisions about intervention effectiveness. Evaluation of these data (e.g., treatment integrity and child outcome data) allows for four possible data profiles, each of which is associated with different next steps (see Table 1.2).

The first two data profiles are associated with positive child outcomes that indicate the child is improving sufficiently to meet his or her intervention goal. In the first data profile, the data could indicate positive child outcomes and adequate levels of treatment integrity. In this case, it would be appropriate to continue the intervention as the child is responding to the intervention as it is currently being implemented. Periodic review of progress-monitoring data and treatment integrity data are nevertheless warranted to ensure sufficient child progress continues and high levels of intervention implementation are sustained. In the second profile, the data indicate sufficiently positive child outcomes and low treatment integrity. In this case, there may be other factors influencing outcomes, the expected rate of child progress may need to be updated, or there may be issues with treatment integrity assessment. Further investigations of these potential issues could result in a team continuing the intervention at its current level of implementation, bolstering levels of implementation and the rate of child progress, or adjusting the treatment integrity forms or assessment plan.

The last two data profiles involve poor child outcomes that suggest that improvement is insufficient to meet the child’s intervention goal(s). In the third profile, the data may indicate poor child outcomes and adequate treatment integrity. In this case, after reviewing for potential treatment integrity assessment issues, it would be appropriate to increase the intensity of the intervention or change the intervention. Alignment of the intervention with the problem should be considered, and, if possible, the intervention intensity should be increased (e.g., more frequent intervention sessions). If the intensity of the intervention is deemed appropriate or it is not possible to change, a different or more intensive intervention may be warranted. In the fourth data profile, the data may demonstrate poor child outcomes and low treatment integrity. In this case, it is necessary to promote treatment integrity levels; it is not possible to evaluate intervention effectiveness until a child is exposed to the intervention as planned (Kilgus et al., 2014; Sanetti & Kratochwill, 2009a).

**PROMOTING TREATMENT INTEGRITY**

To deliver interventions as designed, most implementers will require some support. In response to this need and the critical importance of maintaining

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**TABLE 1.2**

**HOW TO ANALYZE ASSESSMENT OUTCOMES TO IDENTIFY DATA-DRIVEN ACTION STEPS**

<table>
<thead>
<tr>
<th>Treatment Integrity</th>
<th>Child Outcomes</th>
<th>Action Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>Positive/Sufficient to Meet Goal</td>
<td>Continue intervention</td>
</tr>
<tr>
<td>Inadequate</td>
<td>Poor/Insufficient to Meet Goal</td>
<td>Increase intensity of the intervention or change intervention</td>
</tr>
<tr>
<td></td>
<td>(b) the expected rate of progress, and (c) treatment integrity assessment</td>
<td>Promote treatment integrity</td>
</tr>
</tbody>
</table>
high levels of treatment integrity, a series of implementation support strategies, such as performance feedback and prompting have been identified (Fallon, Collier-Meek, Maggin, Sanetti, & Johnson, 2015; Simonsen, MacSuga, Fallon, & Sugai, 2012). These strategies vary in their intensity (e.g., onetime meeting, ongoing meetings), areas to target (e.g., knowledge of intervention, motivation to implement), and extent of research support (e.g., emerging support, identified as an evidence-based practice). Delivering research-based implementation support strategies can facilitate high initial levels of implementation and/or bolster low levels of treatment integrity and, in turn, support child outcomes.

For practitioners to provide the implementation supports in an efficient and effective manner, these strategies may be organized within a conceptual framework, Multi-Tiered Implementation Supports (MTIS; Sanetti, Kratochwill, Collier-Meek, & Long, 2014; Sanetti & Collier-Meek, 2015). Just as children receiving support through the multitiered systems of support described earlier in the chapter (e.g., response to intervention through Tiers 1, 2, and 3), implementers can benefit from foundational research-based training (i.e., Tier 1) and ongoing assessment used to target increased levels of support as needed (i.e., Tiers 2 and 3). Organizing implementation supports within a multitiered framework is aligned with best practice in professional development, which indicates that implementers require ongoing levels of support to be successful (Joyce & Showers, 2002; Sanetti & Collier-Meek, 2015). In addition, organizing intervention strategies from brief and informal to intense and continuous is resource efficient. Research-based treatment integrity promotion strategies for mental health professionals are discussed in the following text.

With respect to treatment integrity provided in schools, implementation support delivered at the Tier 1 level should be easy to implement and amenable to use during consultation (Sanetti & Collier-Meek, 2015). Notably, these strategies may be employed by mental health professionals in clinical and community settings as well. Tier 1 implementation support may include how consultation is approached, the manner in which an intervention is selected, or how the implementer is trained. High levels of treatment integrity have been associated with collaborative consultation, in which the implementer and consultant together identify the intervention, plan implementation, and intervention monitoring (Kelleher, Riley-Tillman, & Power, 2008); expert-driven consultation, in which the consultant determines the intervention and plans for implementation and monitoring (Schoenwald, Sheidow, & Letourneau, 2004); instructional coaching, in which intensive and differentiated support is provided by a skilled coach (Knight, 2007); and the Classroom Check-Up, a classroom management support model that incorporates motivational interviewing techniques (Reinke, Lewis-Palmer, & Merrell, 2008). Utilizing one of these consultation approaches may increase the likelihood that the intervention is systematically identified and supported, and, through these processes, may impact the treatment integrity with which the intervention is delivered.

More broadly, Tier 1 implementation supports may also include how an intervention is identified. When selecting an intervention, it is critical that the intervention addresses the child concern and is appropriate for the context (Kratochwill, 2008). Once baseline data are collected, an appropriate evidence-based intervention that is practical for the implementer and suitable for the context is identified. Allowing the implementer the opportunity to practice implementing the interventions before the treatment is employed can result in higher levels of implementation (Dart, Cook, Collins, Gresham, & Chenier, 2012). Collaboratively discussing an intervention with an implementer is suggested (Kratochwill, 2008; Reinke et al., 2008). To support preparation for delivering an intervention, implementation planning that involves (a) detailed logistical preparation for each of the intervention steps, and (b) the proactive identification of potential implementation barriers, may be used (Sanetti et al., 2014).

Once an intervention is selected, it is critical to ensure that an implementer has the skills to deliver and follow through with the intervention. In most cases, training is needed so that the intervention is implemented as intended, with high treatment integrity, and ultimately resulting in positive changes for the child. Direct training includes teaching the implementer each intervention step; having a consultant model the intervention; practicing the intervention with the implementer, and providing him or her with positive, yet corrective, feedback.
In addition, providing reference materials, such as intervention scripts (Ehrhardt, Barnett, Lentz, Stollar, & Reifin, 1996) or intervention manuals that detail intervention implementation (Randall & Biggs, 2008), can increase treatment integrity by supporting the implementer’s skills.

In schools, Tier 2 strategies are warranted when Tier 1 strategies are provided and low levels of treatment integrity persist (Sanetti et al., 2014). However, these same strategies may be employed by all mental health professionals. Tier 2 strategies involve more intensive implementation support and are designed to target a particular issue that is challenging for the implementer, such as intervention delivery skill, lack of appropriate fit, or need for reminders. To support the implementer’s ability to deliver the intervention with skill, role-play (Trevisan, 2004) or participant modeling (Tschannen-Moran & McMaster, 2009), which involves systematic training, modeling, demonstration, and feedback that are targeted to the implementation scenarios and context, respectively, may be provided. Other strategies focus on defining intervention implementation and treatment integrity assessment (i.e., treatment integrity planning protocol; Sanetti & Kratochwill, 2009b), or planning implementation and remediating barriers (i.e., implementation planning; Sanetti et al., 2013, 2014). For implementers who have difficulty remembering to employ an intervention, prompts and self-monitoring may be used (Petscher & Bailey, 2006; Simonsen et al., 2012).

Treatment integrity data can be used to guide the appropriate Tier 2 implementation support. For instance, if an implementer delivers an intervention with low treatment integrity or provides the intervention throughout the day but with low levels of quality, role-play or participant modeling may be appropriate. If the implementer regularly omits particular intervention steps, it may be appropriate to reteach just these specific steps. If the implementer delivers the intervention with high adherence, but does not do so regularly, then prompts or self-monitoring may be useful.

Finally, Tier 3 strategies are the most intensive implementation support and are delivered individually on an ongoing (e.g., weekly, response-dependent) basis, in school systems as well as clinical settings. Tier 3 strategies are to be provided to implementers with persistently low treatment integrity. In other cases, Tier 3 implementation supports may be appropriate when the intervention is intensive and implementation is low, as it may not be appropriate to wait to deliver Tier 2 and then Tier 3 implementation supports. Performance feedback that involves verbal and/or graphic displays of implementation and child outcome data is effective (Fallon et al., 2015).

CONCLUSION

Ensuring evidence-based interventions are implemented with adequate treatment integrity is critical to evaluating and supporting child outcomes (Kilgus et al., 2014; Sanetti & Kratochwill, 2009a). Treatment integrity, a multidimensional construct, may be assessed by direct observation, permanent product review, or self-report through varied response formats. To determine the appropriate assessment method requires consideration of the purpose of assessment, type of data needed, intervention level, and type of implementation or situational risk. Together with child outcome data, treatment integrity data can be analyzed to determine data-driven next steps related to the intervention and implementation. If support is needed, it can be delivered to implementers within MTIS to efficiently and effectively provide research-based treatment integrity promotion strategies. Such ongoing and systematic attention to treatment integrity will maximize the benefit of the evidence-based interventions.

NOTES

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2. There is no agreed-upon level of “adequate” treatment integrity that is applicable across interventions (Sanetti & Kratochwill, 2009a). Rather, at this time, intervention-specific research and a review of treatment integrity data along with progress-monitoring data can be used to determine the level of implementation necessary to reach the child outcome goal.
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IRIS Center Modules on Implementing a Program or Practice with Fidelity. Retrieved from http://iris.peabody.vanderbilt.edu/module/ebp_02/#content

Two modules provide content related to implementation of evidence-based interventions in multiple formats (text, video demonstrations, audio interviews with experts and practicing educators, and interactive activities).


The website provides free online modules, lessons, tools, and resources about implementation relevant across human services professions.


This is a manual developed for school-based practitioners that includes sections on a multitiered implementation support model, Tier 1 supports (direct training, implementation planning), collection of data (treatment integrity, student outcomes), analyzing treatment integrity and student outcome data together, using data to identify next steps and Tier 2 (participant modeling, role-play, raising awareness, motivational consulting) and Tier 3 (performance feedback) supports. Research-supported assessments and implementation support protocols provided.

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Evidence-Based Interventions for Written-Language Disorders in Children and Adolescents

Merilee McCurdy, Jill Holtz, and Julia V. Roehling

OVERVIEW

Writing is a fundamental communication skill that is important for everyday success. Children and adolescents use written language to communicate their thoughts, ideas, and knowledge to teachers in school; send messages to friends; write papers and reports; and engage in expository writing activities. Unfortunately, because of the lack of high-quality instruction, student effort and motivation, and other complex factors, many students do not acquire adequate written-language skills to ensure future success. According to the Nation’s Report Card, only 33% of eighth graders and 24% of 12th graders possess “proficient” (i.e., solid academic performance) writing skills, and only 2% of eighth graders and 1% of 12th graders were considered “advanced” (i.e., superior performance; Salahu-Din, Persky, & Miller, 2008). The corpus of students included in this Report Card assessment were writing at the basic level, indicating only a partial mastery of written-language skills. Although fourth graders were not included in this evaluation, data collected for the Nation’s Report Card in 2002, which did include all grade levels, yielded a similar lack of proficiency. Alarmingly, only 28% of fourth graders were writing at or above proficiency and 14% of fourth graders did not meet criteria for basic writing skills (Persky, Daane, & Jin, 2003). Perhaps most concerning was that 94% of students with a diagnosed disability were found to be writing at a basic or below-basic level.

When considering that many students do not possess adequate writing skills, it is not surprising that there are numerous implications for individuals as they progress through school. Written-language deficits inhibit students’ ability to effectively communicate their knowledge on tests, often resulting in lower grades (Graham & Perin, 2007). Additionally, students with below-average writing skills are less likely to use writing as a means to extend their learning in other classes via book reports, papers, and essays. Unfortunately, these initial deficits can go on to impact those entering college and the workforce. University faculty and future employers report concerns similar to those expressed by public school teachers. Undergraduate instructors reported that 42% of high school graduates are unprepared for the writing demands of college (Achieve, Inc., 2005). In addition, a poorly written job application can strongly impact hiring success. For example, 80% of individuals responsible for hiring reported that poorly written job application materials typically results in individuals not being offered an interview or considered for a position (National Commission on Writing, 2004). Given the difficulties associated with school
progress, college preparation, and career success, it is necessary for educators and researchers to give increased attention to the development of written-language skills.

**ETIOLOGY AND FACTORS CONTRIBUTING TO WRITTEN-LANGUAGE DISORDERS IN CHILDREN AND ADOLESCENTS**

Writing is an exceptionally complex task composed of multiple processes. Although varied terminology is often used, theories of writing development recognize three stages of writing, including planning or prewriting, drafting or composing, and revising or editing phases (Berninger & Swanson, 1994; Flower & Hayes, 1980). These three phases are not required to occur in a predetermed order but are interconnected and ongoing throughout the writing process. For example, when required to write a story, a child/adolescent may plan a story, begin writing, and then return to revise the original plan. Editing can occur at any point during the writing process and is often repeated numerous times before producing a final draft. Given that writing is challenging for many students, there are a variety of reasons why students develop writing difficulties, including related reading concerns (Berninger, Abbott, Abbott, & Graham, 2002), poor prior instruction, lack of remedial instruction, and biological causes related to genetics and memory development (Berninger & Wolf, 2009). If children or adolescents experience any or all of these deficits, the act of writing becomes an aversive task leading to avoidant behaviors in students.

Behavioral theory states that many individuals find aversive activities punishing and may, therefore, avoid these activities. By avoiding or escaping the punishing task, the individual obtains negative reinforcement as a consequence of these behaviors (Miltenberger, 2015) and is more likely to repeat these behaviors in the future. Students with writing skill deficits may engage in these behaviors when avoiding writing tasks. For children and adolescents who do not possess proficient writing skills, writing tasks are often not enjoyable and may even be punishing. Therefore, students may choose not to complete writing assignments or activities, or they may not put forth the effort required to produce a high-quality written product (Bruning & Horn, 2000). In the classroom, these students may refuse to complete written assignments or if they do complete them, it is done with minimal effort (e.g., writes one page instead of the required five). There are several negative implications stemming from the avoidance of writing tasks, such as the reduced practice of writing skills and diminished constructive feedback from the teacher, resulting in students not associating positive reinforcement with writing, as poor effort does not result in teacher praise, passing grades, or the feelings of success for completing a difficult task (Miltenberger, 2015). Ultimately, this behavior will result in a further impairment in the student’s writing deficits escalating the difficulties.

The development of strong writing skills requires many important components, such as adequate reading skills, high-quality teacher instruction, and student motivation. This chapter focuses on writing instruction/intervention and student motivation. Effective writing instruction relies on evidence-based instructional approaches for developing and increasing writing skills related to planning, drafting, and revising tasks. In addition, it is important to consider student motivation as a primary reason for students not demonstrating success with written-language tasks (Hidi & Boscolo, 2006).

**EVIDENCE-BASED INTERVENTIONS AND EMPIRICAL SUPPORT FOR WRITTEN-LANGUAGE DISORDERS IN CHILDREN AND ADOLESCENTS**

Two meta-analyses have informed the field of evidence-based writing instruction (Graham & Perin, 2007; Rogers & Graham, 2008). The first meta-analysis of experimental and quasi-experimental research methods (i.e., group design research; Graham & Perin, 2007) yielded effect size data indicating that strategy instruction (e.g., self-regulated strategy development [SRSD]; see the following text), summarization (e.g., Chang et al., 2002), peer assistance (e.g., MacArthur, Schwartz, & Graham, 1991), and goal setting (e.g., Page-Voth & Graham, 1999) were the most effective instructional techniques for improving writing skills for students in grades 4 to 12. The second meta-analysis included single subject designs (Rogers &
Graham, 2008), and found that percentage of non-overlapping data (PND) resulted in large to moderate effects for strategy instruction with planning, editing, and paragraph construction; teaching grammar; goal setting for productivity; and reinforcement. In both meta-analyses, strategy instruction was found to be the most effective and have the highest quality research.

**Skills Development.** Strategy instruction teaches a student to organize and use specific skills to master academic tasks in the classroom (Santangelo, Harris, & Graham, 2008). In its most simplified form, strategy instruction is a type of self-regulation that involves the use of mnemonics to teach students to recall and to apply important academic information. Strategy instruction has been shown to be an effective instructional technique in a variety of academic areas, particularly for students with learning disabilities (Graham & Perin, 2007). In the area of writing, the most researched intervention is SRSD (Graham & Harris, 2005; Harris & Graham, 1996). SRSD is an instructional strategy approach to writing, designed to improve a writer's knowledge, self-regulatory behaviors, and motivation.

Using a scaffolded instructional approach, SRSD teaches planning and writing skills while also targeting student motivation by addressing self-efficacy and student effort. SRSD includes six lessons, which can be individualized for each student. The lessons begin with conversations about the writing process and the student's likes and dislikes about writing. Initially, the student and adult engage in co-writing activities with the student taking more responsibility for the story as the lessons progress. By the final lesson, the student is an independent and improved writer (Danoff, Harris, & Graham, 1993; De La Paz, 1999; Graham and Harris, 1989; Tracy, Reid, & Graham, 2009), producing lengthier text with multiple story parts. For those interested in using SRSD with an individual student or groups of students, the creators of SRSD have provided detailed lesson plans (http://kc.vanderbilt.edu/projectwrite/lessonplans.html) and additional information on the Project Write website.

**Motivation.** As mentioned previously, many students view writing as an aversive event and therefore, have a propensity to avoid writing activities. To assist students in developing writing skills, it is necessary to address a student’s motivation to engage in writing activities. Two valuable resources in this area are from Bruning and Horn (2000) and Hidi and Boscolo (2006). Each group of authors conceptualize motivation and writing in similar but slightly different ways. With an applied classroom focus, Bruning and Horn identify four factors that are critical to the development of a student’s motivation to write. These factors include (a) nurturing functional beliefs about writing, (b) fostering student engagement through authentic writing goals and contexts, (c) providing a supportive context for writing, and (d) creating a positive emotional environment. In addition, Bruning and Horn identified classroom strategies related to each factor that teachers can use, such as finding writing tasks that assure student success, having students write for a variety of audiences, encouraging goal setting and monitoring of progress, and modeling positive attitudes toward writing.

Hidi and Boscolo produced a theoretical chapter that combined two bodies of research; research about writing and student motivation to identify commonalities and directions for future research. Specifically, themes were developed related to student interest of a writing topic, individual writing self-efficacy, self-regulation in writing, and the conceptualization of writing as a meaningful and social activity. Typically, writers who are interested in the topic also have high levels of self-efficacy and self-regulation. Writing instruction and interventions could be strengthened by including these components to enhance the development or remediation of writing skills.

High-quality instruction focused on skill development and student motivation to write should produce high-quality writers. This level of instruction may be enough to prevent the development of learning disabilities in many students. However, some students will not develop adequate writing skills and will require intensive intervention services to enhance writing skill development. Without early intervention services, extensive remediation may be necessary at a later point (Denton & Vaughn, 2010; Torgeson, 2000). Providing early intervention, using class-wide strategies such as the ones delineated in the following discussion, should decrease the number of students needing future assistance and remediation of written-language skills.
Summary. Writing is an important skill for success in multiple life contexts—school, work, and community—and writing instruction focused on skill development and students’ motivation to write is essential for improving students’ writing. Writing is a complex skill. Effective writing intervention relies on evidence-based instructional approaches for managing planning, drafting, and revising tasks. Writing interventions that allow students a choice of topics, incorporate feedback from peers, and teach self-regulation strategies are likely to enhance the development or remediation of writing skills.

HOW TO: A GUIDE TO THE IMPLEMENTATION OF INTERVENTIONS FOR WRITTEN LANGUAGE

Comprehensive Writing Program

McCurdy, Skinner, Watson, and Shriver (2008) describe a Comprehensive Writing Program (CWP) for improving the acquisition of targeted writing skills. This multicomponent CWP can be used to teach a variety of writing skills. The intervention consists of direct instruction in a targeted writing skill (i.e., complete sentences, adjectives, and compound sentences), assignment choice, daily writing practice, interdependent group contingencies with public postings of class-wide performance, and individual private feedback. The goal of this initial investigation was to apply multiple, high-quality teaching strategies to the targeted area of written language.

First, students are taught the writing skill. Instruction in the targeted skill involves (a) describing the appropriate use of the writing skill, (b) demonstrating examples of the writing skill used properly and improperly, and (c) prompting class-wide participation (i.e., choral responding) in determining the correct use of the skill. On completion of instruction, students practice using the targeted skill. As mentioned previously, students are more motivated to write about topics that are of interest to them, and thus, this intervention allows students to select their writing assignment (e.g., a choice of story starters). A class-wide goal is identified for the targeted writing skill. The class’s progress is charted and posted in the classroom. Once the class meets the goal for 3 consecutive days, the class earns a group reward. In addition, students receive individual feedback on their use of the targeted skill in their daily writing (e.g., an individual score for the target skill). Although daily individual feedback and graphing each student’s progress is optional, it is recommended, as it provides the student a clear visual of the performance over time, thus incentivizing him or her to continue writing.

Materials
1. Story starters
2. Notebooks or loose-leaf paper
3. Pencils
4. Printed copies of examples and nonexamples of writing skill applications
5. Chart paper or graph paper
6. Teacher approved rewards

Intervention Steps

1. Introduce and describe the target writing skill to be learned. Example: “We are going to learn how to combine simple sentences to create compound sentences. A compound sentence consists of two independent clauses joined by a coordinating conjunction (i.e., and, but, or, yet, for, nor, so) and a comma.”
2. Review how and when to use the skill. Example: “We use compound sentences when we want to connect two simple sentences that are logically related.”
3. Model appropriate skill use, providing examples and nonexamples to illustrate the use of the skill.
   Examples:
   Last month was hot. August was even hotter.
   Last month was hot, but August was even hotter.
   She stayed inside. Her brother walked the dog.
   She stayed inside, and her brother walked the dog.
4. Present additional examples illustrating both correct and incorrect use of the target skill. Ask students to distinguish between examples and nonexamples of the target skill. This can be done through class-wide choral responding. Students may also be encouraged to generate their own examples.
5. Allow students an opportunity to ask questions related to the targeted writing skill. Respond to any questions.
6. On the first day the skill is taught, describe
the group contingency (i.e., identified target
behavior, group criterion, and group reward).
Write the goal on the board, or display it using
an overhead projector. In subsequent sessions,
remind the class of its daily goal. Refer to the
posted graph showing the class’s progress with
the targeted skill.
7. Provide students with at least two different
story starters. Allow students to choose one of
the story starters for their stories.
8. Instruct the class to plan their stories for
3 minutes. Graphic organizers (e.g., story
webs) can be used to assist students as they
plan. Circulate to provide assistance as stu-
dents plan.
9. After students have finished planning, tell them
that they will have 10 minutes to write their
stories. Tell them to practice using the targeted
writing skill. 
10. After 10 minutes, tell the class to stop writing.
Collect their stories.
11. Before the next session, review the students’
stories and assess their progress. Calculate the
class’s overall score for the targeted writing
skill. Provide specific, individual feedback on
each student’s writing performance, and cal-
culate each student’s individual score for the
writing skill. Optional: Graph each student’s
individual progress.
12. At the next session, discuss the class’s progress
toward meeting the target goal. Post the class-
wide progress. Return stories to students with
their individual feedback and scores.
13. Once the class meets the class-wide goal for
3 consecutive days, the students earn a group
reward, such as popcorn, music, or free
time.
14. Move to the next goal (McCurd et al., 2008).

**Reciprocal Peer-Revision Strategy**

Teaching students to revise their essays involves
teaching students to manage multiple cognitive
processes associated with the writing processes
(e.g., reading critically, evaluating, and generat-
ing new text). Cognitive strategy instruction can
be used to teach the cognitive processes involved
in revising one’s writing, and providing opportu-
nities for students to provide peer feedback on

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**Materials**

1. Computers with Word-processing programs
2. Prompt sheets, consisting of print copies of the
nine steps in the peer-editing strategy
3. Pencils or pens
4. Computer paper
5. Writing prompts
6. Printed copies of sample essays

**Intervention Steps**

1. Explain to students that they will be working
in pairs to learn a strategy for revising their
compositions.
2. Discuss with students the characteristics of the
genre in which they are writing. Example: “A
descriptive essay is…”
3. Give each student a sample essay and the peer-
editing procedures. Lead a discussion of the
importance of revision in the overall writing
process. Stress the importance of feedback and
positive peer support.
4. Explain each step of the peer-editing strategy as
described in what follows. Provide students with
a prompt sheet that lists each of the following
steps. Tell the students that they will complete

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the first two steps in turn. Then each will work independently as their partner’s peer editor, after which they will discuss the paper in turn.

Step 1: Listen and follow along as the author reads the first draft of his or her composition aloud.

Step 2: Tell the author what you liked best.

Step 3: Reread the paper to yourself.

Step 4: Ask yourself the following four key revision questions about the composition:
   a. Parts? Does it have a good beginning, middle, and ending?
   b. Order? Does it have a logical sequence?
   c. Details? Where could the writer add more details?
   d. Clarity? Is there any part that is hard to understand?

Step 5: Make notes on the draft based on the revision questions.

Step 6: Discuss your suggestions with the author. Begin with a positive comment.

Step 7: Work independently at the computer to revise your own paper.

Step 8: Meet again with your partner to discuss the revisions you each have made and to check each other’s papers for mechanical errors.

Step 9: Work independently at the computer to make final revisions.

5. Model the strategy. Guide pairs of students through a demonstration using the sample composition. Be sure to stress the importance of positive peer support using the demonstration.

6. Assign partners. Then distribute copies of a second sample composition. Have the students practice the strategy in pairs. Circulate to provide assistance.

7. Provide students with a writing prompt. Have students compose an essay (e.g., a descriptive essay).

8. Have students work in pairs to apply the peer-editing strategy to their partner’s essay. Refer students to the prompt sheets with the revision steps. Encourage students to memorize the four key words in the revision questions. Prompt positive peer-editing behaviors as needed.

9. Have students make the final revisions to their drafts.

10. Every few weeks, change student pairings to allow students an opportunity to work with peer editors with a range of writing abilities (Stoddard & MacArthur, 1993).

Self-Monitoring

Self-monitoring has been shown to increase students’ academic engagement during writing as well as improve the writing performance of students with learning disabilities (Harris, Graham, Reid, McElroy, & Hamby, 1994). Teaching students to self-monitor involves teaching students to self-assess the quality and/or quantity of their writing and to record their writing progress. This process involves teaching students to record their number of words written, the number of story parts included in a story, the number of story parts included in an essay, or any other indicator of writing quality (e.g., number of different sentence types, number of active verbs used, and number of ideas).

Harris and colleagues (1994) described a strategy for teaching students to write longer stories. In addition to self-monitoring, the intervention includes goal setting, graphing of student performance, and performance feedback making it particularly powerful. The intervention involves teaching students to count their total words written. Then, students are taught to record their total writing output on a chart or graph. Although Harris and colleagues describe the intervention with respect to story writing, this intervention could be used with any genre.

Materials

1. Notebooks or loose-leaf paper
2. Pencils
3. Sample student essays
4. Chart or graph paper
5. Paper with self-monitoring steps

Intervention Steps

1. First, discuss the importance of writing longer stories. Example: “Stories with more words usually tell a more complete and better story.”
2. Tell the students that they will learn a strategy that will help them to write longer stories. Describe the self-monitoring strategy. Tell the students that after they finish a story, they will count the number of words they have written. Then they will record this number on a graph (e.g., bar graph). Finally, they will compare this number with the total number of words written for their last story. They will ask themselves whether they wrote more this time.
3. Model how to use strategy. Using a sample essay, demonstrate how to count the total words written (including misspelled words) and record the number on a sample graph. An overhead projector may be useful to project the story.

4. Have students practice counting the total words in one of their stories and then recording the number on a graph. (Younger children may need assistance graphing the total word count.)

5. Have students continue to record and graph their total words written for each subsequent story they write. Conference with each student to assess the student's writing progress. Monitor the student's use of the strategy with subsequent stories. Optional: Teachers may increase the effectiveness of the intervention by having students set goals for total number of words written. Students can record the goal on their charts. After writing, students can check to see if they met their goal.

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*Created by researchers at Vanderbilt University*
*Project WRITE is an online resource for teachers of grades 1 to 3 who are interested in implementing a SRSD approach to writing instruction. The website provides a detailed overview of SRSD, as well as lesson plans and support materials for working with either individual students or classrooms.*

*This website provides valuable teaching tools using strategy instruction. Materials are presented in seven areas: teaching strategies, lesson plans, reading, writing, mathematics, study skills, and self-regulation. Each summary paper provides step-by-step details for the use of the strategy instruction technique and an empirical citation for further research exploration.*

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