



PRIME

Planning Realistic Implementation
and Maintenance by Educators

How to Select an Evidence-Based Intervention

A Guide

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A Brief Introduction to Project PRIME

PRIME is a system of implementation supports designed to increase treatment integrity, the extent to which an intervention is implemented as planned. We know that evidence-based interventions need to be implemented with a high level of treatment integrity to maximize student outcomes; however research shows that most implementers struggle to maintain adequate levels of treatment integrity after just a few days. For this reason, school-based consultants should promote implementers' levels of treatment integrity through the utilization of PRIME supports.

The evaluation of treatment integrity in applied settings is also an important factor in determining the functional relationship between interventions and student outcomes. Decisions about increasing or decreasing supports are data-based when treatment integrity data are considered in conjunction with student outcome data. For more information about PRIME, the theoretical model behind PRIME, and treatment integrity, please see Chapters 1, 2, and 5 of the PRIME Manual.

The PRIME model assumes implementation of evidence- or research-based interventions. The purpose of this prerequisite guide is to provide a brief overview a four-step process for selecting evidence-based interventions to address specific student concerns.

What Will This Guide Tell Me?

PRIME is a system of implementation supports designed to increase the extent to which an intervention is implemented as planned. Best practices indicate that school-based interventions should be supported by research, as these interventions have the most likelihood of promoting positive student outcomes. However, it can be difficult to identify an appropriate evidence-based intervention for a student. Therefore, the purpose of this prerequisite guide is to outline a simple, four-step process for selecting evidence-based interventions to address specific student concerns. Familiarity with this process will help consultants feel more comfortable engaging in problem-solving consultation and implementing PRIME supports.

What is an Evidence-Based Intervention?

Throughout this guide and the PRIME Manual, “intervention” refers to a strategy, curriculum, or manualized program implemented with an individual student or group of students to prevent or remediate a target problem. An evidence-based intervention is one that has been shown, in controlled research studies, to be efficacious in improving student outcomes (i.e., achievement or behavior). For this reason, evidence-based interventions are also commonly referred to as “research-based interventions.” When we refer to interventions in the PRIME Manual, we expect that evidence-based or research-based interventions are being employed. As they are rigorously examined, consultants and implementers (i.e., consultees) can be more confident that these interventions will prevent or remediate a target problem, compared to interventions that are untested.

How to Select an Evidence-Based Intervention

Evidence-based interventions need to be reviewed and selected based on the specific issues demonstrated by the target student(s). So the process for identifying an intervention includes identifying the student issue and evaluating intervention options. More specif-

ically, the process of selecting an intervention can be broken down into four steps:

1. Identify the issue of concern, collect baseline data, and develop goals;
2. Search the Internet, books, and primary resources for interventions;
3. Consider benefits and disadvantages of intervention options; and
4. Select an appropriate evidence-based intervention

Step 1: Identify the issue of concern, collect baseline data, and develop goals

To select an intervention, the primary student concern must be clearly identified. As a part of a problem-solving consultation model, this will occur at the beginning of the consultation process, in the problem identification stage. The target problem, whether academic or behavioral in nature, should be clearly defined and operationalized. For more information about how to identify student concerns, please see *Problem-Solving Consultation: A Guide* and Chapter 6 in the PRIME Manual.

Once the concern is defined, a method for assessing that concern should be chosen and used to collect baseline data. This method will involve measuring a dimension of the concern (e.g., frequency, rate, duration) through direct observation or assessment. For instance, if behavior is a concern, observation data on the frequency of “call outs” may be assessed or if academic progress is a concern, then curriculum-based measures may be used to pinpoint the issue. Data collected during these initial three to five observations is called “baseline data” because it represents the current level of functioning prior to intervention.

Baseline data are critically important to the intervention selection process because the consultant and implementer use those data to determine an intervention goal. This goal should represent

the desired level of student functioning. A clear goal will allow the consultant to engage in a targeted search for intervention that will help the student meet his/her specific goal.

For more detailed information about choosing an assessment measure, collecting and interpreting baseline data, and setting intervention goals, please see Chapter 6 of the PRIME Manual: Progress Monitoring.

Step 2: Search the Internet, books, and primary resources for interventions

With a goal in mind, the search for an appropriate evidence-based intervention can begin. There are many resources for finding such interventions. The organizations and agencies listed in Table 1 (adapted from Frank & Kratochwill, 2008) maintain websites with information about specific intervention initiatives, which can facilitate finding interventions that align with student and school characteristics and needs. In addition, there are many handbooks and reference books that serve as excellent resources for interventions to address academic, behavioral, and social and emotional goals. Information on these books is provided in Table 2.

Table 1. Internet Resources for Evidence-Based Interventions

Organization or Agency	Initiative	Scope	Websites
National Institute of Child Health and Human Development	National Reading Panel	Review of research on how children learn to read and information on evidence-based methods for teaching reading	http://www.national-readingpanel.org/Publications/summary.htm
Institute of Education Sciences	What Works Clearinghouse (WWC) / Doing What Works (DWW)	Practice guides for research-based practices (WWC) / videos and tools to translate research-based practices to schools	ies.ed.gov/ncee/wwc and dww.ed.gov

National Institute for Literacy	Information and Communication System (LINCS)	Information on evidence-based literacy practices	lincs.ed.gov/
Office of English Language Acquisition (OELA)	National Clearinghouse for English Acquisition and Instructional Programs (NCELA)	Resources for meeting the instructional needs of English language learners	www.ncela.gwu.edu
Intervention Central		Information and resources for individual and class- and school-wide academic and behavioral issues	www.interventioncentral.org
The IRIS Center		Interactive training and evidence-based professional development resources for supporting students with disabilities	iris.peabody.vanderbilt.edu
Evidence-Based Intervention Network		Descriptions and modeling videos of educational evidence-based frameworks.	ebi.missouri.edu
Best Evidence Encyclopedia		Online resource for educators and researchers of scientific reviews of variety of programs for children in grades K-12	www.bestevidence.org
Division for Learning Disabilities (CEC)	Teaching LD	Online resource for educators of students with learning disabilities	www.teachingld.org/ld_resources/default.htm

Florida Center for Reading Research		Information about research-based practices related to literacy instruction and assessment for children in pre-school through 12th grade	www.fcrr.org
OSEP Technical Assistance Center of Positive Behavioral Interventions and Supports		Information on implementing positive behavior intervention and supports sponsored by the Department of Education	www.pbis.org

Table 2. Book Resources for Evidence-Based Intervention

Title	Author/Editor and Year	Description
<i>Child and adolescent therapy: Fourth edition: Cognitive-behavioral procedures</i>	Kendall (2011)	Information pertaining to effective cognitive behavioral approaches for treating frequently encountered child and adolescent disorders, including theory, research, and treatment manuals
<i>Evidence-based psychotherapies for children and adolescents, Second Edition</i>	Kazdin & Weisz (2010)	Treatment approaches for a broad range of social, emotional, and behavioral problems in children and adolescents, including conceptual foundations, interventions, and treatment manuals
<i>Handbook of evidence-based treatment manuals for children and adolescents, Second Edition</i>	LeCroy (2008)	Treatment manuals, as well as theoretical foundations and research support, for clinical disorders, social problems, and preventative interventions
<i>Handbook of reading interventions</i>	O'Connor & Vadasy (2011)	Research on and description of effective interventions for word recognition, spelling, fluency, vocabulary, comprehension, and writing

<i>Effective school interventions: Strategies for enhancing academic achievement and social competence</i>	Rathvon (2008)	Evidence-based interventions at the individual and classroom level for academic and social problems; information on designing, implementing, and evaluating interventions
<i>Behavioral interventions in schools: Evidence-Based Positive Strategies</i>	Akin-Little, Little, Bray, & Kehle (2009)	Information regarding behavioral interventions at the primary, secondary, and tertiary prevention levels
<i>Implementing Evidence-Based Academic Interventions in School Settings</i>	Rosenfield & Berninger (2009)	Research on and description of evidence-based interventions for math, literacy, and writing, and information concerning intervention implementation issues

In addition to the Internet and book resources, consultants or implementers can gather recommendations from colleagues, and then obtain information and supporting resources on recommended interventions directly from the publisher or author (a web-based search will likely yield the publisher or author's name). Although it can be challenging to obtain information on unpublished interventions directly from publishers and authors, unpublished interventions can be less costly than published ones. For example, often developers of unpublished interventions will forward school districts copies of manuals and training materials for a nominal fee (Kratowill et al., 2008).

Additional support for identifying possible interventions can be obtained through state and regional education support centers and consultants. Publications concerning best practices in a specific field (e.g., *Best Practices in School Psychology V*, Thomas & Grimes, 2008) can also be accessed as sources of information regarding interventions for particular concerns.

Step 3: Consider benefits and disadvantages of intervention options

Selected interventions must be effective, but also align with the needs of the student and the resources available for implementation (Sanetti & Gritter, 2010). Once consultants find a handful of potential interventions, they can gather information that helps determine which intervention is best suited for the primary concern and the setting. To do so, review the identified interventions based on the following factors: (a) student characteristics, (b) contextual factors, (c) evidence, and (d) practicality.

Student Characteristics. The characteristics that need to be considered when reviewing interventions include the student's goals and demographics. The intervention should address the primary concern and at least one of the goals (typically the prioritized goal) identified in Step 1. In addition, ideally, the student should be similar in terms of disability, age, gender, race, and cultural background to those students who have been shown to benefit from the intervention.

- Do the goals of the intervention match the student's needs?
- Is the student or class similar to those who have previously benefitted from the intervention?
- Does the disability, age, grade, gender, ethnicity, race, etc. of the students the intervention was designed for match the specific target student? If not, can the intervention be adapted to meet the unique needs of the student or to make it more culturally sensitive without significantly changing the core components of the intervention?

Contextual Factors. Important contextual factors refer to the match between the setting in which the intervention was evaluated in research and the current setting of the student. These factors include the location of the intervention (e.g., school setting), staff-student ratio, time of day/year, and administrative or parent support (Sanetti & Gritter, 2010).

- Has the intervention been shown in rigorous evaluations to produce meaningful results in school settings that are similar to the context in which the intervention will be implemented?

Evidence. When reviewing interventions from Internet and primary sources, consider the levels of evidence found for the interventions in documentation of their *efficacy* and effectiveness.

PRIME Tip

Efficacy refers to the link between the intervention and positive outcomes in controlled research studies. *Effectiveness* refers to the link between the intervention and positive outcomes in actual practice settings, such as schools (Forman & Burke, 2008). Consideration of both is necessary for determining the level of evidentiary support for a possible intervention.

Many Internet and primary resources provide interventions with a categorical label corresponding to the level of evidence demonstrated by the intervention. The particular labels will vary depending on the evidence continuum utilized by the organization. Generally, categories correspond to *no evidence*, *some evidence*, or *evidence* for an intervention. One continuum of evidence proposed by Andrews and Buettner (2002a) includes the following descriptors:

- Untested – Either there is no documentation that the intervention has been used or it has been used, but not evaluated.
- Promising – The intervention has been implemented and significant impact evaluations have been conducted. Data supporting the intervention are promising. However, scientific rigor of evaluation is not sufficient. Undefined factors may be contributing to the success of participants. Interventions supported with local data from carefully administered and well-designed screening or progress-monitoring systems may fall into this category of evidence.

- **Evidence Base** – There is compelling evidence of effectiveness. Participant success can be attributed directly to the intervention. Evaluation studies have been replicated; there is scientific evidence that the approach will work for others in different environments.

Evidence is a process and always under development. Some interventions will develop stronger support as research is conducted and more is learned about implementation of the intervention and some interventions will fall from favor because new interventions will display greater relative success. An intervention may even become discredited or show negative outcomes for certain educational applications.

PRIME Tip

Additional resources for understanding the evaluation of scientific evidence for interventions, particularly when conducting a literature search, can be found in:

Identifying and implementing educational practices supported by rigorous evidence: A user friendly guide (U.S. Department of Education, 2003; <http://www2.ed.gov/rschstat/research/pubs/rigorous-evid/rigorous-evid.pdf>)

What is scientifically based research? A guide for teachers (National Institute for Literacy, 2006; http://lincs.ed.gov/publications/pdf/science_research.pdf)

Practicality. Practicality pertains to the resources available in the school to support the intervention. Information relevant to the practicality of intervention implementation includes the cost, staff training, space, staff availability, and time required for the intervention (Sanetti & Gritter, 2010).

To document the resources available in the school, resource mapping can be used to help analyze and subsequently secure resources prior to and during implementation of the intervention. This will allow the consultant to compare the resources required for the

intervention with those available for intervention implementation within the school. One method proposed by Andrews and Buettner (2002b) includes the following descriptors:

- Available – Detailed descriptions of implementation procedures are available and clear. Training, curriculum materials, and other support materials needed for implementation are available.
- Affordable – The total cost of intervention materials and training are affordable given the school’s budget. Training time and support needed to implement the intervention are reasonable and affordable. The time commitment for administering the intervention is feasible.
- Feasible – The intervention is consistent with the intervention provider’s and school’s vision and approach to meeting the needs of students. The approach used is consistent with existing policies and procedures. Implementation will not create insurmountable challenges.

Are there adequate resources available to: (a) purchase materials needed to implement the intervention, (b) support professional development to learn about the intervention, and (c) implement the intervention with integrity?

Step 4: Select an appropriate evidence-based intervention

Once potential intervention options have been narrowed based on the student’s characteristics and relevant contextual factors, consultants will need to consider the quality of evidence for an intervention in conjunction with the practicality of implementation, which are discussed in Step 3. Andrews and Buettner (2002c) created a decision-making matrix to assist consultants in this process. This matrix displays the continuum of both evidence and practicality (see Figure 2) and is described below.

Figure 2. Evidence-Based Intervention Decision-Making Matrix (Andrews & Buettner, 2002c)

		Evidence		
		Low	-----	High
Practicality	Low	Untested and Available	Promising and Available	Evidence-Based and Available
	-----	Untested and Affordable	Promising and Affordable	Evidence-Based and Affordable
	High	Untested and Feasible	Promising and Feasible	Evidence-Based and Feasible

Sometimes, it is not possible to consider implementing interventions, even those with a strong evidence base because of practicality barriers. Interventions that are available, but are neither affordable nor feasible are not realistic for use in school settings. Interventions that are both available and affordable may have promise for implementation if they are feasible. Ideally, interventions will be implemented as designed. It is possible, however, that adaptations may need to be made to the intervention to accommodate the available resources within the school (Kratochwill et al., 2008). Identifying where each potential intervention falls within this matrix facilitates the selection of an intervention that is most likely to be successful.

What Did I Learn?

This guide provides an outline of the steps necessary to select an evidence-based intervention. To find an appropriate intervention, consultants must first identify the student concern and search available resources for interventions that address this concern. Aspects of interventions under consideration, including student characteristics and contextual factors, should be investigated further. Finally, an intervention should be chosen based on its evidence and practicality.

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