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FRAMEWORK



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## NeMTSS Research Brief

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### **Essential Components and Applications of Implementation Fidelity**

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**NEBRASKA CENTER FOR RESEARCH ON  
CHILDREN, YOUTH, FAMILIES & SCHOOLS**

# Essential Components and Applications of Implementation Fidelity: An NeMTSS Research Brief

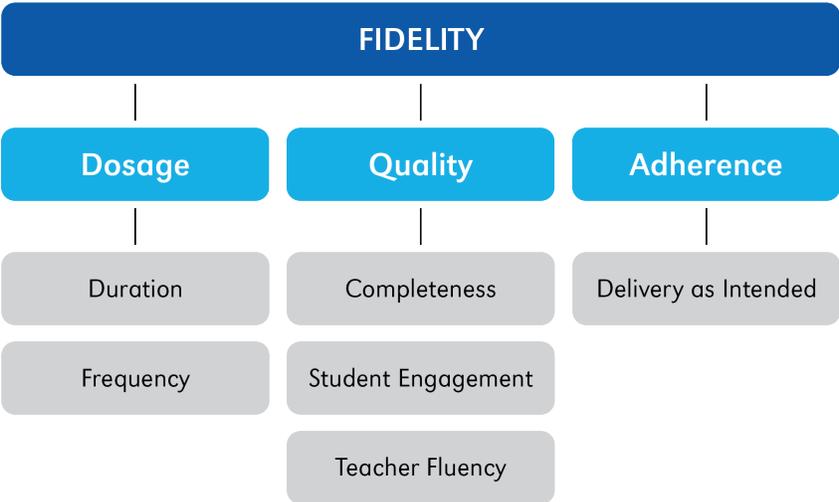
## Key Points:

- There are three main components to implementation fidelity: (a) dosage, (b) quality, and (c) adherence (Fixen et al., 2005).
- Fidelity of program implementation is critical for both teacher and student success.
- Direct and frequent assessment of an intervention for fidelity is considered to be best practice (National Research Center on Learning Disabilities, 2006). Teachers and school personnel can use tools like fidelity checklists and utilize permanent products to assess implementation fidelity of core instruction and/or interventions.
- Assessing fidelity of implementation of core instruction and interventions should be a common practice in schools and among educators and administrators as it can help identify gaps in instruction and areas for improvement. Data describing fidelity of implementation can also help identify areas of need for professional development/training or resource allocation (National Research Center on Learning Disabilities, 2006).

## Fidelity: What is it?

Fidelity refers to the degree to which a program, curriculum, or intervention is implemented as designed (Fixen et al., 2005). In other words, how practitioners are using instructional practices consistently and accurately, as they were intended to be used. There are three main components to fidelity: (a) dosage, (b) quality, and (c) adherence (Fixen et al., 2005) (Figure 1).

Figure 1. Main Components of Fidelity



Implementation dosage includes the duration and frequency of intervention delivery, while quality of implementation looks at completeness of intervention delivery, student engagement with the intervention, and teacher fluency in delivering the intervention. Lastly, adherence of implementation looks at the extent to which program components were implemented as intended (Fixen et al., 2005). Fidelity can be assessed a number of ways, but the most practical and popular methods for assessing implementation fidelity in schools are: (a) permanent products (e.g., academic work samples), (b) observations (e.g., a supervisor sitting in on an intervention session), and (c) self-assessment rating scales (Mckenna et al., 2014).

## Why is it Important?

Implementation fidelity is essential to the core components of a Multi-Tiered System of Supports (MTSS) framework (Nebraska Department of Education, 2018). Additionally, implementing instruction and interventions with fidelity satisfies one of the Individuals with Disabilities Education Act's (IDEA) legal requirements for appropriate instruction and plays a critical role in determining whether a student received adequate instruction (IDEA, 2004). Similarly, core instruction and interventions cannot be evaluated properly if not implemented with fidelity. In sum, implementation fidelity must be documented before altering interventions for unresponsive students. If a program or intervention is not delivered as intended, the issue might lie in the delivery of content, as opposed to an individual characteristic of the student receiving the content (Mckenna and Parenti, 2017).

Several research studies have confirmed the importance of fidelity of implementation to maximize the effectiveness of educational programs. The results of these studies suggest that positive student outcomes may be attributed to three related factors: (1) fidelity of implementation at the school level, (2) degree to which the selected interventions are empirically supported and (3) fidelity of intervention implementation at the teacher level (National Research Center on Learning Disabilities, 2006; Foorman & Moats, 2004; Gresham et al., 2000; Foorman & Schatschneider, 2003).

Additional research has found fidelity to be beneficial to teachers as well. When teachers have high-quality instructional materials and interventions, as well as the knowledge and tools to implement them effectively, they can maximize their impact on student outcomes (King-Sears, et al., 2018; National Research Center on Learning Disabilities, 2006). Additionally, when educators have a high sense of self-efficacy, they tend to enjoy their work better and feel more confident in their ability to affect change. (National Research Center on Learning Disabilities, 2006). Consequently, fidelity of implementation is critical for both teacher and student success.

## How can Schools Ensure Fidelity of Implementation?

Schools may wonder what they can do to ensure the fidelity of their core instruction and tiered interventions alike. Direct and frequent assessment of an intervention for fidelity is considered to be best practice (National Research Center on Learning Disabilities, 2006).

Specific proactive practices to help ensure fidelity of implementation on a school level (Maheady et al, 2013) include the following:

- Linking interventions to improved outcomes, which can bolster credibility
- Definitively describing operations, techniques, and components of programs/interventions
- Clearly defining responsibilities of specific persons
- Creating or using a data system for measuring operations, techniques, and components

- Creating a system for feedback and decision making
- Creating accountability measures for non-compliance

These are systems-level changes which may take considerable time and effort, but it is important to advocate wherever possible (e.g., on committees, in informal conversations, and in formal evaluations). To help guide educators' assessment of fidelity, it could be helpful to ask some of the following questions:

- Were the important pieces of the intervention delivered?
- Was the instruction consistent with the scope and sequence of the intervention?
- Did students receive the recommended amount and types of instruction?
- What was the nature of the delivery and teacher/student interactions?
- Did the teacher provide the instruction in the manner expected?
- Did the students follow the directions and complete the activities as expected?

These and similar questions might help teachers, administrators, and school psychologists take a closer look at how core instruction and interventions are being implemented in their classrooms and schools.

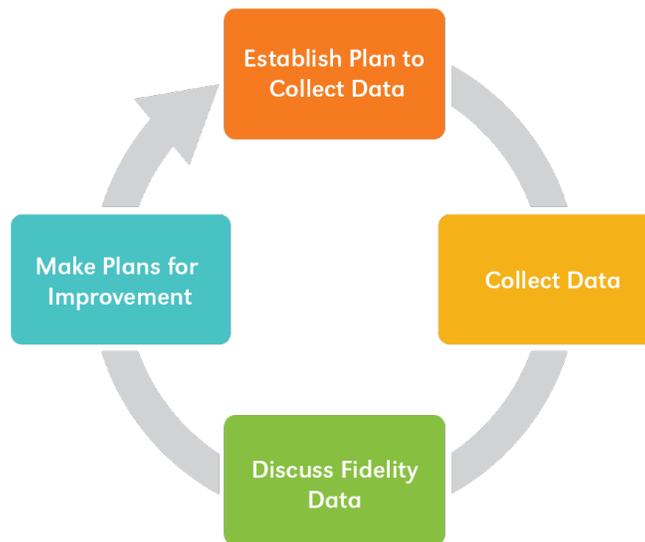
### Steps for Monitoring Fidelity

When monitoring fidelity, it can be helpful to think of the process using a circular 4-step model (Figure 2). The first step is to (a) establish a plan for collecting data. This may include reaching out to teachers, administrators, or anyone else integral to the process, who will either help collect data or help support the process in other ways (The IRIS Center, 2010). At this step, it is important to explicitly state and agree on what, when, where, and how data will be collected.

The second step is to (b) collect the data according to the plan that was established. The third step is to (c) discuss the fidelity data with teachers, administrators, or other personnel who will be involved with supporting this evaluation process (The IRIS Center, 2010). At this step, the personnel involved should discuss patterns, trends, and averages, evaluate what went well and what didn't, and link data to student outcomes when possible.

Finally, the last step is to (d) make plans for improvement. Based on the data that is collected and discussed, all individuals involved in the process can create a plan to improve fidelity and/or develop a sustainable process for regular analysis of implementation fidelity within a classroom or school-wide. At this step, participants in the process could also identify professional development or resources needed to maintain a sustainable process (The IRIS Center, 2010).

**Figure 2.** 4-Step Model for Monitoring Fidelity



### Tools to Measure Fidelity

There are many ways in which fidelity can be measured, but two specific methods that may be helpful for assessing fidelity in schools are the use of fidelity checklists, and the evaluation of permanent products (McKenna et al., 2014). Fidelity checklists are checklists comprised of tasks specific to a curriculum or intervention that are written out and checked off as they are completed. These can be collected via self-report or direct observation by a third-party observer. Permanent Products are physical items that can be reviewed to assess fidelity. Both checklists and permanent products can yield fidelity scores (i.e., a calculated score in which teachers rate their instructional fidelity and calculate a score to see the degree to which instruction was implemented; McKenna et al., 2014).

When developing a plan for assessing fidelity through a checklist, it is necessary to identify the core components of the practice or intervention that will be the focus of assessment (McKenna et al., 2014; McKenna et al., 2017). This is done by completing a task analysis of the instructional method or intervention and can include specific units of activity and the amount of time spent on them. Then, the checklist is created based on these core components, making certain that those critical activities for student learning are included (McKenna et al., 2014; McKenna et al., 2017). McKenna and colleagues (2017) provide several guidelines for creating a fidelity checklist:

- After selecting an instructional practice or intervention, identify the core components of the intervention or practice. There are a few ways to do this, including:
  - Observing an expert implement the practice or intervention and writing down key units of teacher and student activity.
  - Implementing the practice or intervention and writing down core instructional activities as they are implemented or observed.
  - Reading a practice manual or professional development product related to the intervention or practice.

- Determine if some components of the practice or intervention should be implemented at the beginning, middle, end, or in more than one part of a model lesson.
- For each part of a model lesson or practice, determine if there are components that should be implemented in a specific order or sequence.
- Determine if any core components of the intervention or practice should be implemented for a specific amount of time.
- Determine if there are components that you would like to rate according to the quality of implementation.
- Provide a draft fidelity checklist to other professionals who are knowledgeable in the practice or intervention. Refine the checklist according to feedback.
- Conduct practice observations using the fidelity checklist to identify parts that may be unwieldy or unclear. Refine the checklist as appropriate.
- Review the final checklist with fidelity assessors (i.e., other professionals with knowledge of the target practice).
- Begin assessing fidelity using the checklist.
- Periodically meet with fidelity assessors to receive feedback on the checklist and general fidelity assessment procedures. Refine as necessary.

When using permanent products to assess fidelity, some sources of information could be:

- Student self-monitoring sheets
- Student point sheets (e.g., Check-In/Check-out sheets)
- Charts
- Tokens
- Attendance records (which can really help monitor dosage. If a student isn't at school, they are not getting the required intensity of instruction.)

Permanent products may be particularly helpful when measuring the fidelity of interventions teachers use over the course of the school day. By examining products currently available, adherence to implementation may become apparent. For example, a daily report card with inconsistent or missing reports indicates poor fidelity.

## Making Plans for Improvement

When it is apparent that fidelity needs to be improved or the importance of fidelity needs to be stressed to teachers and other personnel, it is essential to have the skills to have these tough conversations. Sheridan and Kratochwill (2014) and Sheridan (2014) outline some critical practices to ensuring effective partnerships with school staff.

- Build on strengths of all participating parties and in the relationship (e.g., the collaborative nature of a professional relationship).
- Recognize and develop shared goals (e.g., student success).
- Build trust within the professional relationship by including others in the fidelity assessment planning process, and by acknowledging the challenges to implementation fidelity.
- Use effective, clear communication. All team members need to work together to identify a mutually advantageous solution in light of identified challenges. All team members should know they play a crucial role in this problem-solving process.

- Practice perspective-taking of others. Listening and acknowledging different perspectives, and taking a non-deficit, non-blaming approach will help build a successful partnership in which everyone’s opinions are valued.
- Use unifying language (e.g., use “we” when referring to needed improvements) and create opportunities for meaningful, joint roles.
- When conflict arises, focus on mutual goals and reframe tasks and goals to be consistent with the overarching intended outcomes.

After baseline fidelity data are collected, data findings must be shared with the teacher and relevant team members. During this discussion, it is essential to determine factors that may be contributing to the current fidelity scores- both with positive and negative outcomes.

Once there is an understanding of the fidelity data, use all information available to work with the teacher and other team members to develop agreed-upon strategies to implement in the classroom to increase fidelity. Be sure to set realistic fidelity goals and determine the process for continued data collection and progress monitoring (Sheridan, & Kratochwill, 2014; Sheridan, 2014). It will also be important to determine a time to meet again to evaluate progress toward the developed fidelity goal(s).

When the skills to facilitate change in fidelity outcomes are developed, it is possible to create long-term systems change. When high fidelity positively impacts students, school instruction and curriculum programs increase in credibility and reliability (National Research Center on Learning Disabilities, 2006) which leads to increased quality and consistency in student outcomes. The outcomes and accompanying credibility naturally lead to a more highly motivated staff who wish to maintain this credibility through continued faithful implementation of the curriculum and instructional practices (National Research Center on Learning Disabilities, 2006; see Figure 3).

**Figure 3.** Long Term Change Through High Fidelity

*Note.* Retrieved from National Research Center on Learning Disabilities (2006)



While addressing concerns in fidelity, it is important to keep in mind the broad aim of a fidelity system: ensuring classroom instruction and interventions are implemented and delivered as intended.

Developing a sustainable system of fidelity checks can help identify areas of improvement and the resources and support needed. When thinking of what is considered “high fidelity,” be sure to look for these key indicators of fidelity in a tiered system (National Research Center on Learning Disabilities, 2006):

- 80 to 85% of students passing tests
- Improved results over time
- High percentage of students on trajectory

### Implications for Practitioners

Assessing fidelity of implementation of core instruction and interventions should be a common practice in schools and among educators and administrators because it can help identify gaps in instruction and areas for improvement. Additionally, from a systems-level perspective, data describing fidelity of implementation can also help identify areas of need for professional development/training or resource allocation (National Research Center on Learning Disabilities, 2006). This may include formal opportunities for workshops and in-service training, partnerships with mentor teachers or coaches, and redistribution of resources (e.g., materials and personnel). Investing in assessing fidelity and establishing a system for fidelity monitoring is mutually beneficial to student and teacher outcomes.

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