Implementing Evidence-Based Practices within Multi-tiered Systems of Support to Promote Inclusive Secondary Classroom Settings

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Research suggests that evidence-based practices (EBPs) implemented in secondary school settings will support the academic achievement of students with specific learning needs (Scruggs, Mastropieri, Berkeley, & Graetz, 2010). In order to effectively promote the use of EBPs in general education classroom settings, secondary schools are currently adopting multi-tiered systems of supports (MTSS) such as Positive Behavioral Interventions and Supports and Response to Intervention models (Fuchs & Fuchs, 2006; Sugai & Horner, 2006). However, secondary teachers’ may have limited knowledge of EBPs and adequate training in the implementation of EBPs in general education classroom settings (Kutash, Duchnowski, & Lynn, 2009; Stormont, Reinke, & Herman, 2011). The purpose of this article is to describe the process of implementing EBPs within secondary MTSS models of inclusion.

Keywords: secondary, evidence-based practices, multi-tiered systems of support, implementation, coaching, performance feedback

Western Mountain High School is located in the Pacific Northwest region of the United States. Western Mountain High has recently decided to adopt a multi-tiered system of support as a means to implement evidence-based practices supporting the academic achievement and inclusion of all students, including students with specific learning and behavioral needs, into their general education classrooms. However, after a schoolwide professional development presentation of the model, many of the teachers at Western Mountain High reported that they were not formally trained in the use of evidence-based practices. In addition, several secondary special education teachers reported not knowing exactly how to implement evidence-based practices to support students with specific learning and behavioral needs into a general education setting.

With an emphasis on the inclusion of students with specific learning needs into general education classrooms, secondary schools continue to examine systems and practices to facilitate inclusive classroom settings that address the learning needs of all students. While the literature provides us with many examples of these practices at
the elementary level, secondary teachers who instruct multiple class periods each day, are still learning how to adopt inclusive models of education. Recently, secondary schools have begun adopting models or frameworks of multi-tiered systems of support (MTSS) as a way to implement evidence-based practices (EBPs) unique to individual student needs within general education settings (Bradshaw, Pas, Debnam, & Johnson, 2015; Freeman, et al., 2016). Two common MTSS models incorporating the use of EBPs are Response to Intervention (RTI), which address academic needs, and Positive Behavior Intervention Supports (PBIS), which support students’ behavioral needs within general education classroom settings (Fuchs & Fuchs, 2006; Sugai & Horner, 2006).

MTSS interventions are based on tiers, or levels of support (i.e., primary, secondary, tertiary). Primary supports are instructional practices implemented class wide by the teacher. That is, the interventions are applied to everyone in the classroom. Examples of primary interventions include: classroom arrangements, active supervision, and the posting of class rules. Secondary and tertiary interventions, however, are more strategic and are based on groups of students with similar needs (secondary supports) and individual student needs (tertiary supports). There is some discretion on the difference between secondary and tertiary interventions (Fuchs, Fuchs, & Compton, 2012). However, in general, secondary interventions are more individualized, closely monitored and are more intensive to implement (e.g., a daily token system to an individual student) where secondary interventions are applied in small groups of students (Glover & DiPerna, 2007). In these two MTSS models, interdisciplinary teams consisting of special education teachers, general education teachers, administrators, and counselors, work with the general education teacher to identify an EBP based on the teacher’s assessment of student need. Teams work together to develop a plan to implement EBPs that will support individual students within general education classroom settings (Mellard & Johnson, 2007). Teachers collect data on student performance and teams collaborate to assess and monitor progress.

Although EBPs, applied within MTSS models, are designed specifically to support the needs of students within general education classroom settings, secondary teachers’ familiarity and reported use of EBPs in the classroom is often limited in scope (Kutash, Duchnowski, & Lynn, 2009; Scruggs, Mastropieri, Berkeley, & Graetz, 2010). To best support the academic and behavioral needs of students within general education classroom settings, it is necessary for teachers to be able to identify EBPs that are unique to student needs and to collaborate with MTSS team members to implement the use of those practices within the classroom.

This paper provides an introduction to EBPs and provides suggestions and resources to facilitate implementation in the classroom. While the use of specific EBPs can be applied to small and even larger groups of students, the focus of this paper will be on the implementation of EBPs as applied to individual students within the general secondary education classroom.

What are Evidence-Based Practices?

The literature in special education has a long history of identifying research based strategies. However, with the passage of the No Child Left Behind Act (NCLB, 2001) schools were mandated to use
strategies that had a corpus of evidence. Although since repealed and reauthorized as the Every Student Succeeds Act (ESSA, 2015), NCLB put into place a policy of accountability requiring all teaching practices, including practices in special education, to subsequently meet “high quality” research standards. Compared to those teaching methods that are “thought” to be effective (e.g., trial and error, personal experience, etc.), EBPs are defined as, “practices that are supported by multiple, high-quality studies that utilize research designs from which causality can be inferred and that demonstrate meaningful effects of student outcomes” (Cook & Cook, 2013, p. 73). Teaching strategies that are considered to be highly effective are rigorously examined through the use of empirical methods of research. In addition, in the field of education, teaching strategies, or instructional practices, receive a label of EBP by meeting standardized criteria suggesting they are “highly effective” methods of instruction (Gersten et al., 2005; Horner et al., 2005).

There are several resources available for educators that have evaluated interventions using the standardized criteria such as: the Evidence-Based Intervention Network (EBI), the IRIS Center, the National Professional Development Center on Autism Spectrum Disorders (NPDC), and the What Works Clearinghouse (WWC). These sources help educators identify and select EBPs by categorizing EBPs based on student academic or behavioral need (e.g., reading fluency, reading comprehension, self-management of behaviors). Materials are also included to assist with implementation in the classroom (e.g., online training modules, fidelity checklists). See figure 1 describing the benefits of these resources for the secondary teacher.

Figure 1. Descriptions and Features of EBP Resources

<table>
<thead>
<tr>
<th>EBP Source</th>
<th>Link to Resource</th>
<th>Identified Area(s) of Support</th>
<th>Features</th>
</tr>
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<tbody>
<tr>
<td>Evidence-Based Intervention Network (EBI)</td>
<td><a href="http://ebi.missouri.edu/">http://ebi.missouri.edu/</a></td>
<td>• Reading&lt;br&gt;• Math&lt;br&gt;• Behavior</td>
<td>• Links to selecting interventions based on individual student and class wide need. Includes stages of learning needs: acquisition, proficiency, and generalization&lt;br&gt;• Descriptions of EBPs&lt;br&gt;• Steps to implementation in the classroom&lt;br&gt;• Links to materials, resources and references</td>
</tr>
<tr>
<td>The IRIS Center</td>
<td><a href="https://iris.peabody.vanderbilt.edu/">https://iris.peabody.vanderbilt.edu/</a></td>
<td>• Reading&lt;br&gt;• Math&lt;br&gt;• Autism Spectrum Disorder</td>
<td>• Links to selecting interventions based on individual student and class wide need&lt;br&gt;• Modules to provide trainings in the implementation of EBPs&lt;br&gt;• Descriptions of EBPs&lt;br&gt;• Steps to implementation in the classroom&lt;br&gt;• Links to materials, resources, and references</td>
</tr>
<tr>
<td>The National Professional Development Center on Autism Spectrum Disorder</td>
<td><a href="https://autismpdc.fpg.unc.edu/">https://autismpdc.fpg.unc.edu/</a></td>
<td>• Autism Spectrum Disorder</td>
<td>• Descriptions of criteria in the identification of EBPs in teaching students with autism spectrum disorder&lt;br&gt;• Modules to provide trainings in the implementation of EBPs&lt;br&gt;• Descriptions of EBPs&lt;br&gt;• Steps to implementation in the classroom&lt;br&gt;• Links to materials, resources, and references</td>
</tr>
<tr>
<td>What Works Clearinghouse (WWC). U.S. Department of Education</td>
<td><a href="https://ies.ed.gov/ncee/wwc/">https://ies.ed.gov/ncee/wwc/</a></td>
<td>• Reading&lt;br&gt;• Math&lt;br&gt;• Behavior</td>
<td>• Reviews of existing research in educational practices and programs&lt;br&gt;• Provides educators with information and resources in the selection of EBPs&lt;br&gt;• Descriptions of EBPs&lt;br&gt;• Links to references and studies in EBPs</td>
</tr>
</tbody>
</table>
In addition to managing ever increasing class sizes, teachers in secondary classroom settings are expected to teach multiple classes throughout the school day. As a result, secondary teachers must shift the responsibility of meeting the academic and behavioral needs of individual students within each changing instructional period. Since students attend multiple classes, the implementation of EBPs in secondary classrooms is typically a team-based process employing the collective efforts of the schoolwide team and buy-in from all classroom teachers responsible for the identified student in need of additional support. The implementation of EBPs in secondary classrooms requires the systematic application of these strategies across multiple classroom settings. Furthermore, secondary teachers attempting to implement EBPs to support an individual student in their classroom will need to work as a team with the student’s other teachers to ensure the EBP is adapted for each classroom but still being implemented consistently to support the student. Teams can take many forms including grade-level, content level (i.e., all social studies teachers), and multidisciplinary, all comprised of educators with experience and knowledge in EBPs, and the application of EBPs in the classroom (Burns, Kanive, & Karich, 2014).

Implementing EBPs for a student in a secondary classroom uses multidisciplinary teams which include special education teachers, general education teachers, administrators, school psychologists, and school counselors (Burns et al., 2014). Working with teachers, teams identify EBPs that are appropriate to the student’s need. Like other problem-solving or decision-making processes, teams can use a process that includes: (a) the identification of student learning and behavioral needs, (b) the selection of EBPs and the implementation of EBPs in the classroom, and (c) ongoing performance feedback and the multidisciplinary team (Stormont & Reinke, 2013).

Isaiah is a 9th grade student at Western Mountain High. Isaiah enjoys school and is well liked by his teachers and peers. Isaiah was diagnosed with attention deficit hyperactive disorder (ADHD) in the 3rd grade and he currently takes medication to help him with his ADHD in the classroom. In class, Isaiah is often out of his seat and he frequently asks for permission to use the restroom. As a result, Isaiah often fails to complete his assignments which negatively affects his grades in class. Recently, a functional behavior assessment (FBA) was conducted by the school’s psychologist and determined that Isaiah engages in off-task behaviors to escape having to do work in class.

Identification of student need. The implementation of EBPs begins with the identification of student need. Classroom teachers (one or multiple teachers depending on needs of the student) begin with a basic assessment of the learner to determine the areas where the student requires behavioral (e.g., self-management) or academic supports (e.g., math, reading, writing). Teachers conduct a formal analysis to gather information on student performance. A formal analysis may include parent and student interviews, interviews with other teachers, teacher observations, and direct behavior rating scales. Academic assessments may be performed using curriculum-based measurements (CBMs) (Gravois & Nelson, 2014) or more standardized assessments (e.g., Woodcock Johnson IV, 2014) while challenging behavior is assessed using the tools of the
Functional Behavior Assessment (FBA) process.

**Selection of EBPs and implementation in the classroom.**

Improved outcomes result from the application of both (a) an effective intervention and (b) the effective implementation of that intervention (Cook & Odom, 2013; Fixsen, Naom, Blase, Friedman, & Wallace, 2005). After the student’s behavioral or academic needs have been identified, teachers work together with their team or IEP team to identify and select an EBP to employ. Working with parents, teams will discuss the practice and theoretical reasoning for the implementation of the practice in the classroom. In selecting an EBP, it is critical that the team discusses the cultural appropriateness of the practice and identifies any potentially harmful or stigmatizing effects, such as age appropriateness in the use of the practice in secondary classrooms (Montalvo, Combs, & Kea, 2014).

Two of Isaiah’s teachers, Ms. Smith and Mr. Yee attend the school’s weekly MTSS meeting to support student behavior. Both teachers enjoy having Isaiah in class and wish to support his success in school. During the meeting, the teachers discuss Isaiah’s behavior and the school psychologist explains the results of the FBA. The team, including the school psychologist, a school counselor, a special education teacher, and vice principal discuss potential strategies. The special education teacher, Mrs. Louis suggests “self monitoring” as an evidence-based practice that she knows well and may support Isaiah by teaching him to monitor his on-task behaviors in class. After contacting Isaiah’s parents and obtaining permission to use the strategy, the team agrees to implement the strategy and Mrs. Louis is assigned as the coach in supporting Ms. Smith and Mr. Yee in the practice.

**Implementation.** The term “implementation” refers to the application of the identified EBP into the classroom. Based on teacher assessment of the student’s needs, classroom teachers work with the multidisciplinary team to provide support for the implementation of the EBP.

The recent literature has identified coaching as one strategy for assisting teachers in implementing EBPs in the classroom. Coaching refers to the process in which the educator (i.e., team member with knowledge of the EBP) coaches the teacher in the use of the EBP, observes the use of that EBP in the classroom, and provides the teacher with ongoing support and feedback (Reinke, Stormont, Herman, & Newcomer, 2014). The coach provides the teacher with explicit direction and help to ensure that the EBP is delivered accurately and with fidelity (Brock & Carter, 2015). In addition, in secondary settings, coaches may need to collaborate with multiple teachers responsible for the student, given the individual student’s various academic or behavioral needs throughout the school day.

In MTSS models of inclusion, the coach is typically a special education teacher, instructional specialist, school psychologist, or school counselor who has knowledge in the identification and classroom implementation of EBPs. Coaches serve as consultants within general education classrooms and provide explicit training in the use of EBPs to support students with specific learning and behavioral needs in the classroom (Stormont, Reinke, Newcomer, Marchese, & Lewis, 2015). They help to identify the EBP that will best support specific student needs, train teachers in the implementation
of the EBP identified, and provide on-going supports to ensure that the EBP is effective in promoting academic and behavioral performance of the student in general education classrooms (see example Figure 2).

Figure 2. Flow Chart for Implementing EBPs within MTSS Models

To increase fidelity, or accuracy, in the application of the intervention as intended, the identified coach and selected teachers set a time to meet to discuss the EBP to be implemented in the general education classroom. At this meeting, the coach may engage in modeling and roleplay to provide teachers with practice in the use of the EBP (Stormont et al., 2015). It is important to note, when working with multiple teachers responsible for the student throughout the school day, variations to the selected EBP may be necessary to address individual differences given various classroom contexts. During modeling, the coach physically demonstrates what the EBP looks like. Modeling may also include the use of a video to demonstrate the practice (Reinke et al., 2014). During the training session, the coach and teachers may also engage in role play to practice the use of the EBP (Stormont et al., 2015; Reinke et al., 2014). During a role play scenario, teachers and coaches will take turns acting as both the student and teacher using the EBP in class. Training sessions may also include a procedural fidelity checklist, or steps to implementation, to ensure that all steps of the EBP are met (Brock & Carter, 2015) (see example Figure 3). After the teachers and coach practice the use of the EBP and teachers successfully demonstrate the use of the EBP with fidelity and consistency, teachers implement the EBP with the identified student in their classroom settings.
Figure 3. Example of Fidelity Checklist in Supporting Academics

<table>
<thead>
<tr>
<th>Repeated Reading Fidelity Checklist</th>
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</thead>
<tbody>
<tr>
<td><strong>Set-Up</strong></td>
</tr>
<tr>
<td>Area</td>
</tr>
<tr>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td>Student and teacher have access to</td>
</tr>
<tr>
<td>materials and ready to begin</td>
</tr>
<tr>
<td>Text is between 50 and 200 words</td>
</tr>
<tr>
<td>in length</td>
</tr>
<tr>
<td>Teacher is organized and familiar</td>
</tr>
<tr>
<td>with text</td>
</tr>
<tr>
<td><strong>Instruction</strong></td>
</tr>
<tr>
<td>Step 1 - Teacher and student</td>
</tr>
<tr>
<td>discuss reading topic and generate</td>
</tr>
<tr>
<td>questions before instruction</td>
</tr>
<tr>
<td>Step 2 – Student reads the passage</td>
</tr>
<tr>
<td>aloud a minimum of three times</td>
</tr>
<tr>
<td>Step 3 – If the student makes an</td>
</tr>
<tr>
<td>error or pauses for 5 seconds, the</td>
</tr>
<tr>
<td>teacher reads the word aloud</td>
</tr>
<tr>
<td>Step 4 – If the student asks for</td>
</tr>
<tr>
<td>help, the teacher reads the word or</td>
</tr>
<tr>
<td>provides a definition</td>
</tr>
<tr>
<td>Step 5 – Student reads the passage</td>
</tr>
<tr>
<td>until satisfactory level of fluency</td>
</tr>
<tr>
<td>has been achieved</td>
</tr>
</tbody>
</table>

Mrs. Louis meets with Ms. Smith and Mr. Yee before school. She begins by describing the self-monitoring intervention and ways to implement the strategy into their classrooms. Mrs. Louis introduces the teachers to a fidelity checklist with the steps to implementation and explains that the purpose of the strategy is to teach Isaiah to recognize and independently record his own behaviors. She explains that teaching Isaiah to manage his own behaviors in class will result in more time dedicated to instruction. Working together, the team designs a simple recording form to assist Isaiah in marking the occurrence of on-task behaviors. Because each class period is just under one hour, Mrs. Louis demonstrates how to set up a timer onto a smartphone or tablet device and sets the timer to vibrate every 10 minutes. She explains how to encourage Isaiah in the use of the timer on his smart phone and to record his behaviors onto the self-monitoring form. Using the implementation checklist, the teachers practice the use of the intervention by taking turns as both the teacher and student. Every time the phone vibrates at each ten-minute interval, the teachers practice marking a plus sign (yes I am working and on-task), or a negative sign (no, I am not on-task but will try again) onto the recording form. After several successful practice trials, the teachers feel they are ready to implement the strategy with Isaiah in the classroom. At the end of the training session, Mrs. Louis schedules a time to observe both teachers use of the strategy with Isaiah in their classrooms.

**Performance feedback.** When applying the EBP into the classroom, the
teacher collects data on the use of the EBP to determine if the EBP is effective in supporting the student’s academic achievement or targeted behavior as well as to monitor the teacher’s use of the EBP as intended (Kretlow & Bartholomew, 2010). The EBP remains in place for several weeks and the multidisciplinary team monitors the student’s progress. There are several methods for measuring student progress including: reaching benchmark goals, measuring rates of growth, and graphing progress-monitoring reviewing data point trends (Metcalf, 2013). As each student will respond to EBPs differently, there is not a set amount of time to keep the practice in place. However, using teacher collected data, as well as teacher and student interviews, teams will usually be able to assess student progress after 1-2 weeks. In addition, teachers and coaches may review the fidelity of the teacher’s implementation of EBPs using fidelity checklists (Stromont & Reinke, 2013). Throughout the implementation process, teachers and coaches communicate progress, and coaches and team members set aside time to observe the use of the practice in class. The team then sets a time to meet outside of class to discuss student progress and teachers use of the EBP in the classroom. Based on student progress, the team, including teachers and coaches, will assess data and discuss the effectiveness of the EBP and determine whether or not to keep, modify, or discontinue the use of the selected EBP (Mellard & Johnson, 2007).

During subsequent MTSS meetings, team members discuss teacher’s use of the practice, determine what is working well, and identify additional areas of improvement. Teachers and coaches review student data and determine if the practice is effective in supporting the student’s needs. At the end of each meeting, team members target the next focus areas of implementation and determine dates of future observations. The following week, the team invites Ms. Smith and Mr. Yee to attend a scheduled MTSS team meeting after school. At the meeting, the teachers share data that they have collected on Isaiah’s on-task behaviors using percentages of intervals Isaiah marked as “on-task” on the data recording form. In addition, Mrs. Louis discusses Ms. Smith’s and Mr. Yee’s accuracy of the intervention using the fidelity checklist that she completed during her classroom observations. During this time, the team encourages the teachers to discuss components of the intervention they feel are working well and to discuss areas of student performance that they still would like to see improve. Working together, the team creates a plan to continue the use of the intervention in supporting Isaiah. Mrs. Louis schedules a future classroom observation with the teachers to provide additional assistance and feedback.

Implementation and Coaching, the Future of Inclusive Special Education

With the adoption of MTSS models, secondary special education teachers and general education teachers will need to be trained in (a) the identification of EBPs matched to individual student need, (b) the implementation of EBPs with fidelity in general education classroom settings, and (c) training in the practice of teacher coaching to bridge the gap between EBP identification and implementation.

Training in EBPs and coaching.
Secondary general education teachers are highly trained in content area instruction. However, in general, secondary education teachers receive minimal training in the practice of implementation science in
support of students with specific learning needs within general education classrooms. In contrast, special educators, who are trained in EBPs, may lack training and coaching skills necessary to provide such supports in inclusive secondary classroom settings. Because students receiving special education services in the least restrictive environment may require EBPs to support individual learning needs, secondary teachers, both general and special education, will need to be prepared in the identification and successful implementation of EBPs in order to effectively support MTSS models of inclusion in general education classroom settings.

**Special education teachers as future coaches in the field.** In MTSS models of inclusion, coaches assess the implementation of EBPs to support and promote the academic achievement of students with specific learning and behavioral needs. With proper training, special education teachers with an understanding of EBPs and interventions that are unique to individual learning needs will be better prepared to coach, provide support, and give ongoing feedback to in-service teachers and paraprofessionals who may be unfamiliar with the use of EBPs in the classroom (Sugai & Horner, 2006). Those special education teachers who are prepared to serve as coaches in both the identification and implementation of EBPs can best serve to support the academic achievement and inclusion of these secondary students in general education classroom settings.

**Implications for Inclusion**

General education and special education teachers who are trained to systematically implement EBPs within secondary instructional content will be better prepared to promote the inclusion of students with specific learning needs and provide highly effective teaching practices in their secondary general education classrooms.

Federal policy already requires that students with special education services receive such services in educational placements in the least restrictive learning environment. Students who are included with peers will learn constructively and develop socially with their same age peers within the general education classroom setting. School districts that adopt academic models of inclusion, such as MTSS, will provide academic services to students that are supportive of both behavioral needs and academic achievement in less restrictive learning environments. As a result, educators who are adequately trained to identify and implement EBPs within secondary settings will promote improved student performance through the use of successful models of inclusion.

**References**


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