

# OVERCOMING BARRIERS TO MTSS: Five Recommendations



# OVERCOMING BARRIERS TO MTSS: Five Recommendations



Bradley S. Witzel, PhD  
Adelaide Worth Daniels  
Distinguished Professor  
WESTERN CAROLINA UNIVERSITY

Schools use Multi-Tiered Systems of Supports (MTSS) to impact the performance of students, especially those having difficulties in school. When implementing MTSS, there are numerous potential benefits, from academic to behavioral. For many schools and their students, the need for interventions is imperative. However, schools may encounter barriers to achieving a successful and sustainable implementation of MTSS. Within this paper, I present five potential barriers to MTSS implementation and how to overcome each.

Dr. Bradley Witzel's most recent books include *Rigor in the RTI and MTSS Classroom*, *Teaching Elementary Mathematics to Struggling Learners*, and *Bridging the Arithmetic to Algebra Gap*. He has served as a board member consulting with several states on RTI and MTSS, as an author/panelist on the Institute of Education Sciences RTI Math Practice Guide, and as an invited reviewer of the National Mathematics Advisory Panel Final Report.

## Table of Contents

- 3** Barrier 1: There is an overreliance on interventions to overcome each student’s lack of proficiency.
- 6** Barrier 2: The evidence-based intervention used isn’t working as well as it should.
- 8** Barrier 3: Not everyone believes that all students will learn grade-level standards.
- 13** Barrier 4: Time on assessment isn’t spent targeting impactful skills.
- 15** Barrier 5: Students make gains in intervention but not in core instruction.
- 18** References

**BARRIER 1:**

There is an overreliance on interventions to overcome each student’s lack of proficiency.

**Recommendation: It is important to evaluate and improve core instructional issues as part of an MTSS plan (Burns et al., 2016).**

The 2022 National Assessment of Educational Progress provided a call for help among teachers in the U.S. Of fourth graders, only 35% met proficiency in math and only 32% met proficiency in reading. By eighth grade, the scores declined further. This means there is a high need for intervention in both math and reading. As such, it may seem normal to rely more heavily on interventions based on these scores. However, these data reveal a larger need for improved core instruction rather than interventions. After all, it is a lack of understanding of the core standards that led to these scores. For students starting their schooling, we need improved core instruction, and for most students within the education system, we need both improved core instruction and readily available targeted interventions.



SCORING PROFICIENT OR ADVANCED	READING	MATH
Fourth grade	32%	35%
Eighth Grade	29%	26%

## OVERCOMING BARRIERS TO MTSS: FIVE RECOMMENDATIONS

For students learning new or difficult information, it is important to focus your research applications on outcomes-supported research (Witzel et al., 2023). Every Student Succeeds Act of 2015 emphasized evidence-based practices (EBPs) and prioritized funding of programs with strong, moderate, or promising evidence of effectiveness as incentives to drive improved student outcomes in program development (Fien et al., 2021). Low and stagnant levels of proficiency, large variance in student scores across groups, and a growing research base highlight the need for implementing EBPs in math and reading during both core instruction and intervention.

For core instruction programs, schools and districts must select an impactful program matched to the needs of the students. Review all pertinent evaluations of optional literacy and math textbooks and programs provided by third-party research or even that by the publisher. To determine if the study was sound, read the most skipped section of the study: the Methods. Also, review the Methods section to determine if the students involved in the study are similar to those in your school or district. One of the first questions to ask is about the study design:

Was the study a qualitative, single-case, or group design?

- Qualitative studies will provide insights into a student's learning but are not meant to show a cause and effect tied to student outcomes.
- Single-case studies give details as to what may work and what doesn't but are not meant to generalize to other students, like the ones in your classroom. These provide good insight into small populations, such as those with low-incidence disabilities.
- Group studies are fewer in number and are meant to generalize to other students. A comparison group should be present with similar conditions to adequately compare results.



Once the initial design is understood, examine the other criteria. Some of those are:

- How similar were the characteristics of the participants to our students?
- How was performance determined?
- What were the gains, if any? Were those gains greater for one subpopulation than another?
- Was every student and teacher's classroom a part of the study? Was there attrition? If so, why?
- Was fidelity of implementation measured?

If the Methods are sufficient and match your students' needs, then investigate the intervention more. Is it well defined, and can you replicate the approach provided when implementing it with your students? If so, then the approach has the potential to impact your students.



### **BARRIER 2:**

The evidence-based intervention used isn't working as well as it should.

**Recommendation: Follow research protocols with fidelity.**

#### **Practice a research protocol before adapting it**

Often, when we review a research study or series of studies, they are focused on a narrow set of standards and constructs. This means that when we begin to adapt an evidence-based practice or intervention to the needs of our students across multiple standards and constructs, the implementation and outcomes will vary from the studies we researched. When possible, focus an intervention on the exact content focus of the intervention research and build from there. In literacy intervention, teachers have more success with a program when they can practice the program in its entirety before adapting it to students' needs (Quinn et al., 2017).

#### **Fidelity**

Fidelity of implementation is necessary before adapting the program to meet your students' needs (Quinn et al., 2017). Fidelity is essentially following the procedural guidelines that conform with the researcher's specifications for the treatment (Gall et al., 2007). Student performance on interventions tends to improve when teachers deliver the intervention with close fidelity (Crawford et al., 2012). The teacher should deliver the instructional steps with strict adherence to the use of instructional elements as indicated by the researcher.



## OVERCOMING BARRIERS TO MTSS: FIVE RECOMMENDATIONS

For instance, when a math intervention requires two examples to be modeled with a hands-on manipulative before students begin working with that manipulative, it is important to share both of those examples, even if the students appear to understand the first example. Further, if the intervention is to last four weeks, then carry out the intervention for the full four weeks before moving on to another intervention. Consider developing a checklist of the necessary steps to an intervention to ensure delivery of the intervention with fidelity. Here are two examples:

### Lesson Fidelity

LESSON STEPS	DELIVERED?
Describe and model—3 <i>problems</i>	✓
Guided practice—2 <i>problems</i>	✓
Word problem	✓
Independent practice—6 <i>problems</i>	✓
Progress monitor	✓

(Protocol from Riccomini & Witzel, 2010)

### Intervention Fidelity

INTERVENTION STEPS	DELIVERED?
Pre-test	✓
Introduction	✓
Lesson #1	✓
Lesson #2	✓
Lesson #3	
Lesson #4	
Lesson #5	
Post-test	

(Protocol from Riccomini & Witzel, 2010)



### **BARRIER 3:**

Not everyone believes that all students will learn grade-level standards.

**Recommendation: Set grade-level goals as a minimum for all learners.**

In a rigorous classroom, students are expected to learn at high levels (Blackburn & Witzel, 2018). Students tend to strive to meet expectations, whether low or high. Parent expectations are connected to student outcomes (Zhang et al., 2011), such as graduation rates and employment, across students with multiple achievement levels. Parents who believe that their children can be successful in school tend to have children who perform better in school, across students from all disability categories (Doren et al., 2012). Further, parent expectations predicted a student's likelihood of graduating, even when controlling for demographic and disability factors (Wagner et al., 2014). Similarly, teacher expectations also impact students' postsecondary employment (Kirby et al., 2019).



## OVERCOMING BARRIERS TO MTSS: FIVE RECOMMENDATIONS

Teacher and parental expectations build students' self-determinism to succeed. Self-determination is a person's engagement in goal-directed, self-regulated, autonomous behavior (Field et al., 1998). The self-determinism of youth with disabilities is associated with positive postsecondary outcomes (Wehmeyer, 2014).

DO'S	DON'TS
Believe that students will exceed your expectations	Let self-fulfilling prophecy creep into your attitudes and beliefs
Teach grade-level standards or approximations of those standards	Avoid grade-level standards because students might not be ready to learn
Set goals with students and their families	Assume students and their families don't have high expectations and don't need to
Make everyone responsible for MTSS planning and implementation	Reserve MTSS responsibilities for special educators or interventionists

Every teacher says that they have high expectations for every student. However, not everyone's actions match their statement. Rather than simply stating we believe that all students should succeed, it is important that we put actions into place showing that we believe that all students will succeed. Below are three actions you can take to show high expectations for all students.



## 1. Involve students in progress monitoring reflection and goal setting.

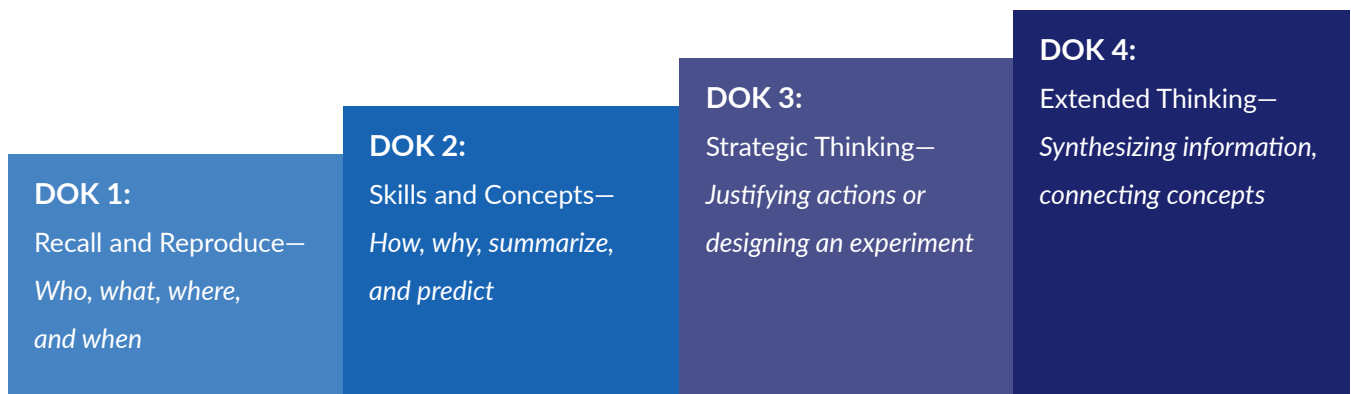
Assessment is a key part of MTSS instruction and interventions. One of the most frequently used assessments, particularly in interventions, is the use of progress monitoring. Progress monitoring is a frequent assessment used across several days to determine growth. While teachers typically review these data independently or in groups of teachers, consider involving students in the analysis. If a student is meeting expectations of growth, then ask how they have done so well and what must they continue to do to succeed. If a student is performing below expectations of growth, then ask what has hindered their performance. Problem-solve with the student on how to show improvement. Finally, set a next steps goal in the language of the student and a date for review of that goal.

### EXAMPLE

*"I will practice frequently used phrases to improve my reading by next Friday."*

## 2. Ask students high-level questions.

Consider a wide range of questions to ask when working with students. Ask students for reasons to support their answers to lower-level questions and prepare higher-level questions, such as connecting ideas or asking why with factual questions. As a guide, consider using Webb's Depth of Knowledge framework to prepare questions to drive students to more rigorous thinking.



### 3. Build approximations of standards.

When students fall several grade levels behind their peers, it appears daunting to catch students up. Instead, we only reteach foundational skills. While we want students to learn foundational skills before they learn higher-level ones, the danger is that we don't move past those foundational skills quickly enough. If we only teach foundations repeatedly, then the students don't even have access to the grade-level standards. Only 1% of students receive modified assessments, meaning that at least 99% of students must learn grade-level standards, or at least an approximation of them.

Standards tell teachers what to teach but not how to teach. Use student strengths to drive instructional decisions and build up areas of weakness. Approximations are meeting the standard within an acceptable range of complexity. Review a standard that may provide a student with difficulty, then consider approximations of that standard.



The following is a set of approximations of a sixth-grade writing standard for a student who struggles forming written sentences but likes to talk and has opinions on several age-appropriate interests.

## TARGETED STANDARD

### CCSS.ELA-LITERACY.W.6.1

Write arguments to support claims with clear reasons and relevant evidence.

### CCSS.ELA-LITERACY.W.6.1.B

Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.



<b>CLOSE APPROXIMATION</b>	Student selects an argument on a common topic and finds one relevant credible source to support that argument. The student then types the argument and source into a graphic organizer.
<b>MEDIUM APPROXIMATION</b>	Student states a claim on an area of interest and uses voice typing to make a verbal argument on a common topic. Reasons are selected from teacher-provided options.
<b>FAR APPROXIMATION</b>	Based on a teacher's given claim, student differentiates relevant evidence from irrelevant evidence.

**BARRIER 4:**

**Time on assessment isn't spent targeting impactful skills.**

**Recommendation: Focus time on assessment to targeting student needs.**

Several types of assessment drive MTSS decision-making. Screening determines who needs assistance and who is achieving. Progress monitoring shows how well a student is progressing in content between screening benchmark assessments. The other assessment that is used far less consistently is a diagnostic. A diagnostic helps the intervention team determine the specific needs of the student to gain proficiency in the grade-level standards. Diagnostics should be used across interventions and core instruction. At the core level, a diagnostic assessment shows if an error pattern exists that interferes with learning multiple core standards (Blackburn & Witzel, 2018). For example, it could be fluency of reading that interferes with reading comprehension. At the intervention level, a diagnostic should further define the fluency concern. If reading fluency isn't gained because the student needs support with sight words, then the intervention would focus on sight word recall.

**MTSS ASSESSMENTS**

Screening at least twice yearly	Screen at the beginning of the year		Screening during the middle of the year			Optional screen at the end of the year	
	Progress monitoring (PM)—monthly	PM at the beginning of the intervention	PM monthly within intervention and core	PM monthly within intervention and core	PM monthly within intervention and core	PM monthly within intervention and core	PM monthly within intervention and core
Diagnostic—in core and intervention	Diagnose student needs to determine error pattern	During the intervention, determine if error pattern persists	During the intervention, determine if error pattern persists	During the intervention, determine if error pattern persists	During the intervention, determine if error pattern persists	During the intervention, determine if error pattern persists	During the intervention, determine if error pattern persists

## OVERCOMING BARRIERS TO MTSS: FIVE RECOMMENDATIONS

Several screeners include a diagnostic add-on, and there are multiple diagnostic assessments for purchase. However, consider a formative assessment to refine a student's intervention content. For reading, a running record is a good formative assessment to determine what areas of strength and weakness exist for an early reader. For math, consider a formative assessment checklist based on the subskills of a math construct (Witzel & Little, 2016). For example, if you are teaching addition of two-digit numbers using place value, then the steps might be:

- 1 Expand the addends by tens and ones
- 2 Sum the number of tens
- 3 Sum the number of ones
- 4 Combine the tens and ones to conclude your answer

The checklist would show these steps and reasoning to determine common errors among students.

STUDENT	EXPAND BASED ON PLACE VALUE	SUM TENS	SUM ONES	ANSWER	SCORE
Aaron	✓	✓	✓	✓	4 out of 4
Bonnie	✗	✓	✓	✗	2 out of 4
Carlson	✗	✗	✓	✗	1 out of 4

The teacher collects this data in a small group across a group of students to determine what they are doing to solve a problem. In this example, Aaron accurately completed all the steps and achieved the correct answer, earning all four points.

Carlson didn't decompose the first addend accurately and incorrectly completed addition of the tens. Based on the erroneous early steps, however, Carlson added the ones place digits correctly. So, his answer was incorrect, and this chart shows that the focus of the intervention should be on place value and addition of tens. With Carlson, the teacher would start by praising the ones addition and then bring in the place value work. Likewise, Bonnie may be grouped with Carlson for that place value intervention.

### **BARRIER 5:**

## **Students make gains in intervention but not in core instruction.**

### **Recommendation: Connect intervention to core standards.**

When a student receives intervention in a particular content, the intervention is often provided in isolation from the core content. The purpose of this is both logistical and instructional. Logistically, the classroom teacher rarely has the time in their schedule to provide additional small-group or individual intervention on foundational skills. Instructionally, many MTSS leadership teams are hoping that the interventionist will have innovative approaches to meeting the needs of the student. While these are reasonable, they often lead to the intervention appearing isolated from the core content. For example, a student receiving writing intervention isn't directly connected to the writing required in core. Similarly, a student learning fifth-grade long division may be receiving an intervention on multiplication fact fluency separately. While the student may be making gains per progress monitoring in their intervention, these gains may not be seen quickly in the core classroom.

To many students, interventions are disconnected from core content, causing the student to believe that intervention and core are two separate lessons on the same content. Two suggestions to help make the connection between core and intervention are using preteaching and worked examples.



## 1. Preteaching

Preteaching is when the interventionist presents upcoming information in the core curriculum to help prepare the student for success. Preteaching could involve vocabulary, organizers, and background knowledge (Berg & Wehby, 2013). With vocabulary, a student in intervention would learn definitions of predator and prey before learning about animal behavior in fourth-grade core science.

An organizer is a visual aid that connects new information to already learned information. This organizer could be conceptual, or it could prime background knowledge that scaffolds into the core content. In mathematics, an advance organizer that prepares a student who struggles with place value for core content may be reteaching students to apply place value before a lesson on multiplying two-digit numbers. In intervention, the student would be taught to apply this information to an upcoming schema used in the core classroom. In this case, that might be an area model for multiplication. So, the interventionist prepares the student for success by reteaching place value through decomposition of multiple digit numbers and applies that to the area model.

Intervention lesson instruction:

**43 = 4 tens + 3 ones**

**25 = 2 tens + 5 ones**

Preteaching to core multiplication work:

43 × 25	4 tens	3 ones
2 tens		
5 ones		

The student will not be solving the multiplication, as that would happen in the core classroom. Rather, the purpose of the preteaching is to help set up the student for success in core. In this example, that would be setting up the visual that will be used in core. Preteaching simply targets areas of need in preparation for core success.



### 2. Worked examples

Students learn by examining and dissecting accurate core content through an approach called worked examples (Ayres, 2012). An interventionist uses worked examples by presenting accurately written work, a recording of a passage, or a stepwise-presented problem. Then, the interventionist and student go through the accurately completed work, methodically explaining what was done and why. Next, the worked example is faded so that the only part that needs to be completed by the student is the focus area of the intervention (Hesser & Gregory, 2015). This partially worked problem is then completed by the student to show how their work on the intervention directly connects to the content being taught in the core classroom.

Whether core content is pretaught during intervention or the intervention is scaffolded into the core content, the purpose of explicitly connecting intervention work with core standards helps students understand the purpose of interventions and may improve both core and intervention outcomes.



## REFERENCES

- Ayres, P. (2012). Worked example effect. *Encyclopedia of the Sciences of Learning*, 3467-3471.
- Berg, J. L., & Wehby, J. (2013). Preteaching strategies to improve student learning in content area classes. *Intervention in School and Clinic*, 49(1), 14-20.  
<https://doi.org/10.1177/105345121348002>
- Blackburn, B. R., & Witzel, B. S. (2018). *Rigor in the RTI and MTSS classroom*. Routledge.
- Burns, M. K., Pulles, S. M., Helman, L., & McComas, J. (2016). Assessment-based intervention frameworks: An example of a Tier 1 reading intervention in an urban school. In S. L. Graves & J. J. Blake (Eds.), *Psychoeducational assessment and intervention for ethnic minority children: Evidence-based approaches* (pp. 165–182). American Psychological Association.  
<https://doi.org/10.1037/14855-010>
- Crawford, L., Carpenter, D. M., Wilson, M. T., Schmeister, M., & McDonald, M. (2012). Testing the relation between fidelity of implementation and student outcomes in math. *Assessment for Effective Intervention*, 37(4), 224-235.  
<https://doi.org/10.1177/1534508411436111>
- Doren, B., Gau, J. M., & Lindstrom, L. E. (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. *Exceptional Children*, 79(1), 7–24.  
<http://dx.doi.org/10.1177/001440291207900101>
- Field, S., Martin, J., Miller, R., Ward, M., & Wehmeyer, M. (1998). *A practical guide for teaching self-determination*. Council for Exceptional Children.
- Fien, H., Chard, D. J., & Baker, S. K. (2021). Can the evidence revolution and multi-tiered systems of support improve education equity and reading achievement. *Reading Research Quarterly*, 56(S1), S105-S118.  
<https://doi.org/10.1002/rrq.391>
- Hesser, T. L., & Gregory, J. L. (2015). Exploring the use of faded worked examples as a problem solving approach for underprepared students. *Higher Education Studies*, 5(6), 36-46.  
<http://dx.doi.org/10.5539/hes.v5n6p36>
- Kirby, A. V., Armo, K. D., & Persch, A. C. (2019). Differences in youth and parent postsecondary expectations for youth with disabilities. *Journal of Vocational Rehabilitation*, 51, 77-86.
- Quinn, D. M., & Kim, J. S. (2017). Scaffolding fidelity and adaptation in educational program implementation: Experimental evidence from a literacy intervention. *American Educational Research Journal*, 54(6), 1187-1220.  
<https://doi.org/10.3102/0002831217717692>
- Riccomini, P. J., & Witzel, B. S. (2010). *Computation of integers*. Pearson

Wagner, M. M., Newman, L. A., & Javitz, H. S. (2014). The influence of family socioeconomic status on the post-high School outcomes of youth with disabilities. *Career Development and Transition for Exceptional Individuals*, 37(1), 5-17.

<http://dx.doi.org/10.1177/2165143414523980>

Wehmeyer, M. L. (2014). Framing the future: Self-determination. *Remedial and Special Education*, 36(1), 20-23.

<https://doi.org/10.1177/0741932514551281>

Witzel, B. S., & Little, M. E. (2016). *Teaching elementary mathematics to struggling students*. Guilford.

Witzel, B. S., Myers, J., Root, J., Freeman-Green, S., Riccomini, P., & Mims, P. (2023). Research should focus on improving mathematics proficiency for students with disabilities. *The Journal of Special Education*.

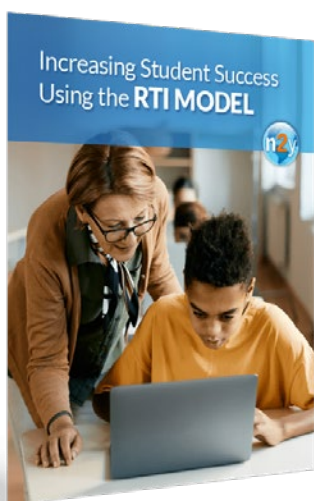
<https://doi.org/10.1177/00224669231168373>

Zhang, Y., Haddad, E., Torres, B., & Chen, C. (2011). The reciprocal relationships among parents' expectations, adolescents' expectations, and adolescents' achievement: A two-wave longitudinal analysis of the NELS data. *Journal of Youth and Adolescence*, 40(4), 479-489.

<http://dx.doi.org/10.1007/s10964-010-9568-8>

## ABOUT n2y

n2y is changing the lives of special education administrators and teachers, therapists and paraprofessionals, and all the students they serve. Their award-winning Total Solution is designed specifically to address the needs of the whole child and help unique learners master their state's extended standards from any learning environment. Multiple research-based, integrated solutions empower educators to teach and students to achieve. Differentiated, standards-based academic instruction, enhanced by proactive behavior management plus powerful and collaborative assessment, data, reporting and compliance tools supports the IEP process. For more information on this award-winning solution, visit [n2y.com](http://n2y.com) and join them on Facebook and Twitter.



### YOU MAY ALSO LIKE...

## Increasing Student Success Using the RTI model

Learn how targeted interventions boost student success in the classroom and beyond.



[DOWNLOAD WHITE PAPER](#)

**EVERYONE** Can Learn®  
800.697.6575 • [n2y.com](http://n2y.com)

Copyright © n2y, LLC. All rights reserved.

