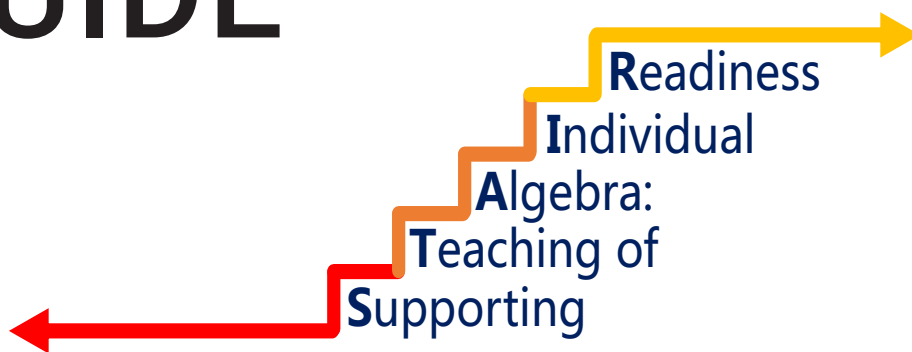


PROJECT STAIR DATA-BASED INDIVIDUALIZATION GUIDE



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Project STAIR is a federally-funded research project that supports middle-school mathematics teachers in implementing data-based individualization (DBI). STAIR coaches work with teachers to help support students who experience difficulty with math to develop algebra readiness skills needed to be successful in high school and beyond. Project STAIR is supported by the Office of Special Education Programs (OSEP) under grant H326M170006. The project is housed at the University of Missouri, Southern Methodist University, and the University of Texas at Austin.

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Project STAIR

Supporting Teaching of Algebra: Individual Readiness

Project STAIR

Data-Based

Individualization

Guide

In this guide, we provide suggestions for implementing Data-Based Individualization (DBI) to support middle school algebra readiness.

DBI FOR MIDDLE SCHOOL ALGEBRA READINESS GUIDE

The intent of this guide is to provide examples and resources for the professional learning communities (PLC), leadership teams, and educators who work with students with an identified mathematics (math) learning disability or students who experience significant difficulty in the area of math.

MAIN TOPICS INCLUDE

- 1) Data-Based Individualization (DBI) and Project STAIR (Supporting Teachers of Algebra: Individual Readiness).
- 2) DBI Key Components and Assumptions,
- 3) DBI Decision Making and Flowchart,
- 4) DBI In-Person Strategies,
- 5) DBI Virtual Strategies.

Project STAIR

Supporting Teaching of Algebra: Individual Readiness

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NOTE. INTERACTIVE HYPERLINKS ARE EMBEDDED THROUGHOUT THE DOCUMENT. THIS DOCUMENT MAY BE REPRODUCED OR DISTRIBUTED FOR NONPROFIT PROFESSIONAL LEARNING EDUCATION PURPOSES. DISCLAIMER: NOT ALL EXAMPLES ARE LISTED IN DOCUMENT. RESOURCE MAY NOT BE REPRODUCED FOR MONETARY CHARGE.

Defining DBI

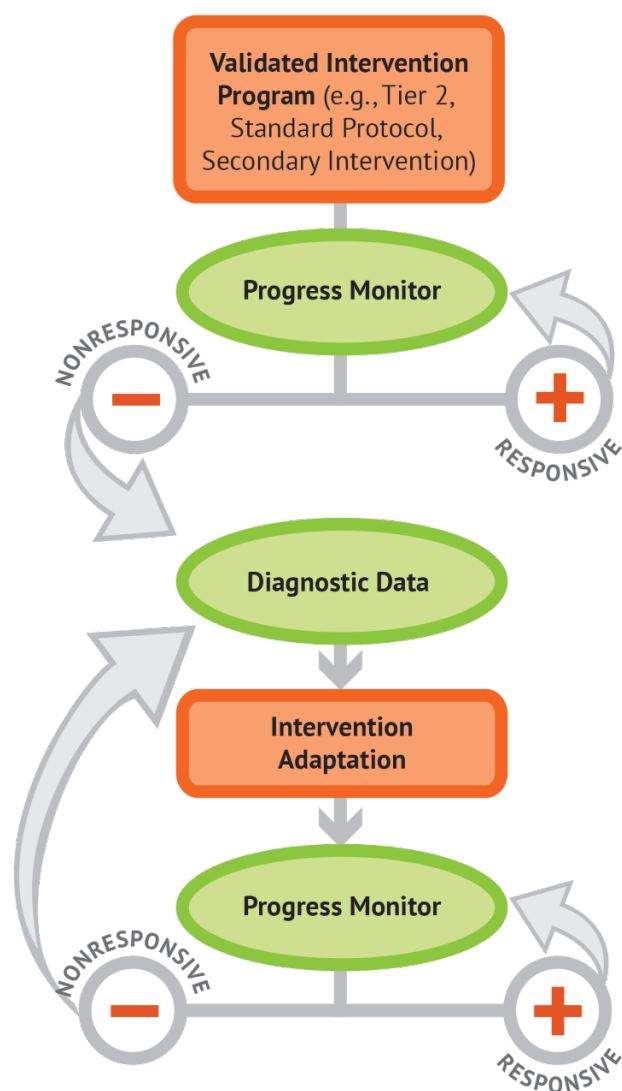
Data-Based Individualization

WHAT IS DBI FOR MATH WITH MIDDLE SCHOOL STUDENTS?

Data-Based Individualization (DBI) for middle school math is a systematic, data-based approach for teachers to individualize instruction to prepare students for the rigors of algebra coursework in late middle school or high school. DBI is a research based process for individualizing and intensifying interventions through the systematic use of assessment data and validated interventions, as shown in Figure 1 ([NCII, 2020](#))

Figure 1.

[National Center on Intensive Intervention Data-Based Individualization Framework](#)



Defining DBI

Data-Based Individualization

WHAT ARE THE MAIN ELEMENTS OF DBI?

Data-Based Individualization (DBI) integrates instructional design principles and assessments to create individualized, responsive intervention for students with persistent learning needs. DBI serves as the overarching approach for addressing individual student needs when learning pre-algebraic concepts by providing the context and rationale for the integration of formative assessment data with teachers' decisions about the selection and use of evidence-based instructional practices ([Project STAIR, 2020](#)).

DBI has three main characteristics: (1) systematic, (2) relies on data, and (3) helps individualize instruction. Teachers should be systematic in their collection of data and intervention implementation. The second characteristic encourages reliance on data for instructional decision making in classrooms. The aim is to move away from making subjective decisions to objective changes when looking at how students are responding to the intervention and instruction that is in place. The third characteristic of DBI is to individualize instruction for students who are most at risk for struggling before taking Algebra 1 ([Project STAIR, 2020](#)).

Key Points about DBI from the National Center of Intensive Intervention

- DBI is a validated process, and not a single intervention program or strategy.
- DBI is an ongoing process in which intervention and assessment are linked and used to adjust a student's academic or behavior program over time.
- DBI is not domain-specific, meaning that a student may receive DBI in one domain (e.g., math or reading) or even on one component of that domain (computation or fluency) while receiving core or supplemental instruction in other domains (e.g., number sense). DBI can be implemented in multiple domains at the same time, responding to the learning needs of the student.
- For the students with the most intensive needs, it is likely that they will require DBI over a sustained period of time. Decisions about if and when to reduce the intensity and individualization of the intervention must take into account the student's responsiveness, as well as the breadth and nature of skill deficits to be addressed ([NCII, 2020](#)).

For more general information [NCII: DBI Framework](#) (NCII, 2020)

Defining DBI

Data-Based Individualization

WHAT EVIDENCE SUPPORTS DBI?

Data-Based Individualization (DBI) is a framework for intensifying intervention in which systematic student-level formative assessment data are used to determine when and how a student's intervention should be modified (NCII, 2013). Research demonstrates that students who have intensive needs benefit from more practice and different instructional approaches to learn new information. In fact, these students require up to 10 to 30 times more practice than their peers do to acquire math skills (Fuchs, Fuchs, Powell, et al., 2008; Gersten et al., 2009). In other words, *standard teaching techniques are simply not enough*. Educators must organize their time to maximize students' learning opportunities, including focused instruction, and engaging, varied practice. Furthermore, they must regularly evaluate their efforts to determine whether the current program is working. Importantly, a review by Stecker, Fuchs, and Fuchs (2005) noted that frequent progress monitoring with Curriculum-Based Measurement (CBM) is not enough, by itself, to improve student achievement. Instead, progress monitoring must be combined with systematic rules for using data to make decisions, analysis of students' skills, and guidance on making appropriate program modifications (Project STAIR, 2020).

DBI is often implemented within a Multi-Tiered Systems of Support (MTSS) framework, such as RTI, to support students for whom core instruction (i.e., Tier 1) and secondary intervention (i.e., Tier 2) have been insufficient to facilitate adequate academic or social behavior progress. DBI supplements Tier 1 and 2 supports depending on student need and may be applied to a specific skill area. That is, a student may develop proficiency in aspects of measurement and geometry through core instruction and achieve grade-level computational fluency with secondary intervention but require DBI to improve specific algebra-readiness skills. Alternatively, a student with global math difficulties may require DBI in all areas ([Project STAIR, 2020](#)).

WHY IMPLEMENT DBI?

Some students do not respond to research-based interventions. DBI provides the framework to individualized instruction. It is important to have a process an educator can follow when making meaningful instructional decisions for the students who need additional intervention or support. Research in DBI has shown that when teachers use the DBI framework correctly, student achievement can improve (Powell et al., 2021). It is a critical for teachers to have this process in their toolbox for effective math instruction (Project STAIR, 2020).

Defining DBI

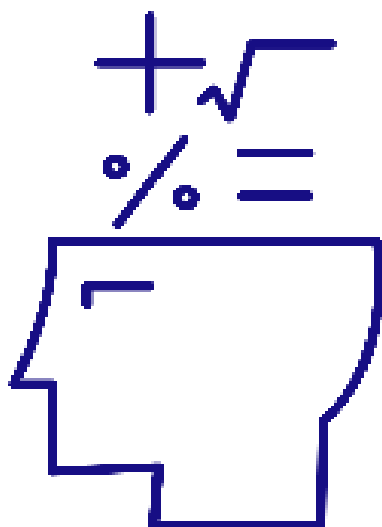
Data-Based Individualization

WHO SHOULD RECEIVE DBI IN MIDDLE SCHOOL MATH?

The DBI process should be implemented when a student is not responding adequately to an evidence-based program or instruction implemented with fidelity. DBI is intended for students who require intensive individualized instruction. These are students for whom core instruction or supplemental intervention is not sufficient and has not worked in the past. It can also be implemented with students who have been identified as needing Tier 3 instruction as part of an RTI model or students who are on IEPs (Project STAIR, 2020).

WHAT IS PROJECT STAIR?

Project STAIR targets middle school students, in order to provide early intervention for students with difficulties who may be struggling to reach proficiency in pre-algebraic knowledge and skills. By supporting middle-school students' understanding of and proficiency with these concepts, the goal of Project STAIR is to prepare students with math difficulties to be ready for Algebra 1 in high school. To reach this goal, the research team designed Project STAIR, a four-year model demonstration project (OSEP) that will contribute empirical evidence to the research and practitioner literature on the effectiveness of a system of instructional practices for supporting middle-school students with math difficulties' readiness for algebra ([Project STAIR Overview, 2020](#)).



Defining DBI

Data-Based Individualization

HOW DO PROJECT STAIR AND DBI FIT TOGETHER?

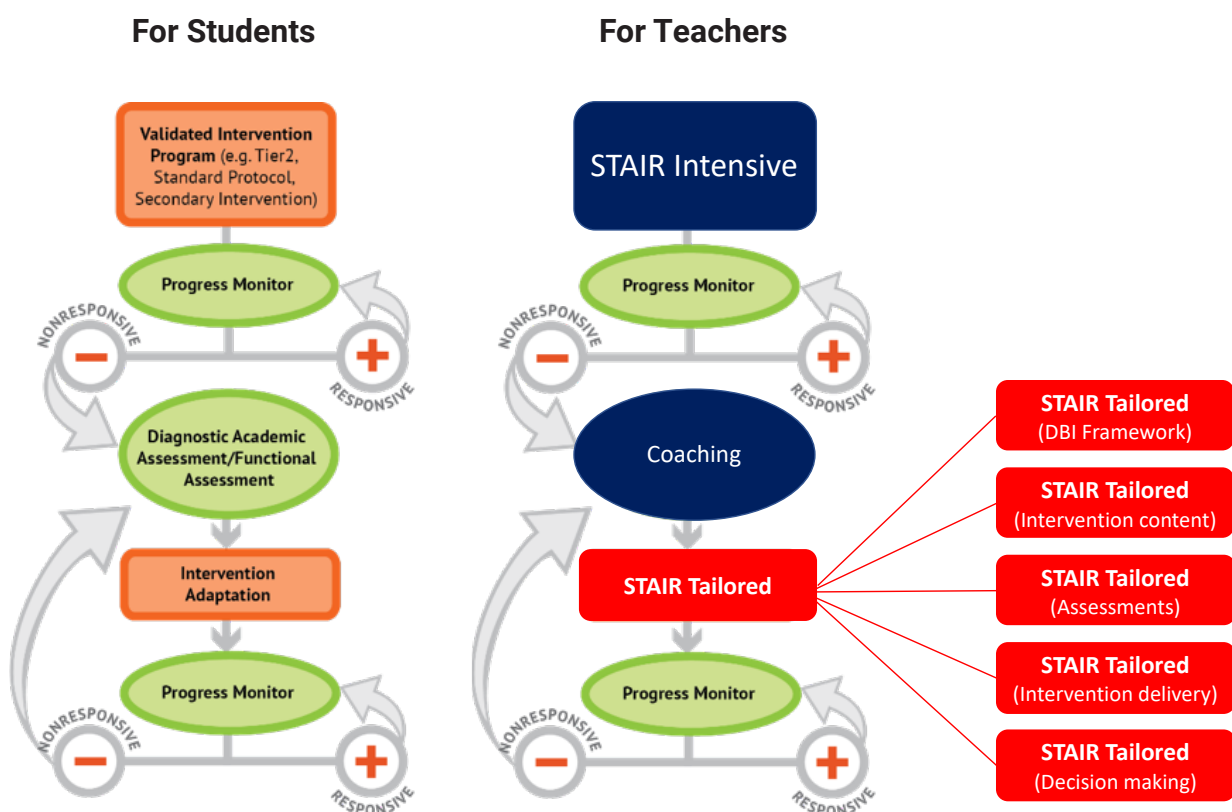


Figure 2.
([Project STAIR & NCI Webinar Series, 2020](#))

Project STAIR mirrors the student DBI approach by using professional development, data analysis, observations, interviews, and STAIR Tailored videos to improve teaching practices for students struggling in math. The framework provides Project STAIR with an approach to assess and provide tailored coaching to meet the needs of teachers.

Professional Learning Tip

Use Handout #1 in the Appendix section of this document and the YouTube link: [Applied Example: Taylor Case Study](#) to apply a real-life application exercise.

Application Exercise 1: Examine the Connection Between DBI & Project STAIR

Question: In Taylor's Case Study, how do DBI and Project STAIR fit together?

Key Components and Assumptions

WHAT ARE THE FIVE KEY STEPS TO IMPLEMENTING DBI?

STEP 1: IMPLEMENT VALIDATED INTERVENTION PROGRAM

The first step in DBI implementation is establishing that there is a valid Tier 2 intervention in place. When considering if there is an existing valid intervention, ask yourself if the practice or program is considered evidence based. An evidence-based practice is a strategy proven to be effective for the majority of students which is established through research studies or large-scale research field studies (IRIS Center). An evidence-based practice in math might include the use of visual representations, schema instruction, explicit and systematic instruction. [Project STAIR Tailored: Explicit & Systematic](#) instruction serves as an expanded descriptor of how to weave explicit and systematic instruction with students. An evidence-based program is a collection of practices that, when utilized together, has been proven to work through experimental research studies or large-scale research field studies (IRIS Center, 2020).

ADDITIONAL RESOURCES

Want more information on identifying and selecting an evidence-based practice or program? Follow the link below to access the IRIS Center Module:

- [IRIS Center Module: Evidenced-Based Practice or Program](#)

Want more information on evidence-based math practices teachers can utilize? Follow the link to access:

- [IRIS Center Module: Evidenced-Based Math](#)

Want more information on validated Intervention Programs? Follow the links below to access The National Center for Intensive Intervention self-paced module or virtual webinars:

- [Navigating Evidence-Based Practice Resources](#)
- [Selecting Evidence-Based Tools for Implementing Intensive Intervention](#)
- [Using Secondary Interventions to Set the Foundation for Effective Intervention](#)

Key Components and Assumptions

STEP 2: MONITOR STUDENT PROGRESS

The second step is to monitor the student's progress to assess the effectiveness of the Tier 2 validated intervention that is being implemented. It is important to monitor if that chosen intervention is successful for the student. First, teachers must establish a present level, which is similar to collecting baseline data to get a graph set up for the student and set a long-term goal. It is important to be ambitious when setting long-term goals to push students forward. Third, you must collect frequent assessment data (i.e., Curriculum Based Measurements (CBM)) that is then graphed so decision making rules can be applied to the data. Such data will monitor progress to determine if a student is/is not responsive to instruction. Teachers will look at the assessment data that has been collected to determine if the particular student is on track towards long-term goals or to make an instructional change that may be needed.

ADDITIONAL RESOURCES

Want more information on Progress Monitoring?

Follow the links below to access The National Center for Intensive Intervention self-paced module or virtual webinars:

- [Strategies for Setting High-Quality Academic Individualized Education Program Goals](#)
- [Using Academic Progress Monitoring for Individualized Instructional Planning](#)
- [Data Rich, Information Poor? Making Sense of Progress Monitoring Data to Guide Intervention Decisions](#)

STEP 3: MAKE DECISIONS BASED ON STUDENT RESPONSE

If the student is successfully making progress with the implementation of the Tier 2 intervention, then it is continued. If the student is not responsive during the progress monitoring of the validated tier 2 intervention the next step would be to move to collecting diagnostic academic data. Diagnostic data can include assessments such as the Diagnostic Online Math Assessment (DOMA) or administering a math interview. It could also be error analysis data (looking at patterns of errors in data that is already being collected in the classroom), or noticeable patterns through ongoing algebra progress monitoring. Diagnostic data analysis is designed to help support decision making on what changes to make.

Key Components and Assumptions

STEP 4: MAKE AN INSTRUCTIONAL CHANGE

Using the diagnostic data collected in step 3, step 4 includes developing a hypothesis on what needs to happen next. An instructional change will be made based on the hypothesis. These instructional changes should be evidence based instructional changes to meet the student's needs. Examples of these instructional changes could be an increase in teacher modeling, use of visual representations, or increased fluency practice.

ADDITIONAL RESOURCES

Want more information on Diagnostic Assessments?

Follow the links below to access The National Center for Intensive Intervention self-paced module or virtual webinars.

- [Academic Diagnostic Assessment: Using Data to Guide Intensive Instruction](#)
- [Intensifying Interventions for Struggling Students through Data-Based Individualization in Academics](#)

STEP 5: CONTINUE TO PROGRESS MONITOR

The final step to implementing DBI is completed after the instructional change is made during step 4. This step is designed to monitor how the student is responding to the instructional change. The DBI cycle continues by the teacher collecting data and using that data to make instructional changes based on the student's responsiveness.

HOW DOES DBI DIFFER FROM WHAT I AM ALREADY DOING?

The DBI process allows teachers to intensify and individualize instructional interventions beyond the instruction they are already implementing. Although many components of DBI support instruction that teachers are already implementing, it provides a process to utilize for the students who need it most. When students are not responding to initial instruction or a Tier 2 intervention, DBI provides a process to follow to enrich the instruction that is already occurring. DBI uses student performance data to adapt and intensify instructional practices that are grounded in research to support students.

Key Components and Assumptions

WHAT ARE COMMON ASSUMPTIONS IN DBI?

FIVE ASSUMPTIONS

1. The purpose of special education is to provide individualized instruction. Thus, we can and should test the effectiveness of instruction for individual students.

2. Despite the existence of generally effective, research-based interventions, it is impossible to predict whether these interventions will meet the unique needs of each individual student (see Deno, 1990). Thus, we can only hypothesize that a given intervention will work, and must empirically test whether it is effective for a specific student.

3. Ongoing formative assessment data can be collected and used as evidence to determine whether a selected intervention is working for a specific student.

4. The ongoing formative assessment data used for instructional decision making should reflect critical academic skills that we expect to improve over time.

5. Generating and testing hypotheses to individualize instruction requires highly trained professionals who know how to use data to draw valid conclusions about instructional effects.

HOW DBI ADDRESSES THESE ASSUMPTIONS

→ DBI is an approach in which teachers systematically select, implement, and test the effectiveness of instruction to meet students' individual needs.

→ The teacher selects a research-based instructional approach that he or she hypothesizes will meet a student's needs but plans to test whether or not the instructional approach is effective for the individual student, and to modify that instruction if it is not effective.

→ The teacher collects frequent (e.g., weekly) data to monitor the student's response to the selected instructional approach.

→ The teacher uses Curriculum Based Measurement (CBM), which is uniquely suited to DBI because it is designed to reflect student performance and progress related to critical academic skills.

→ Teachers will likely require specific professional development and support to effectively individualize instruction using DBI.

Professional Learning Tip

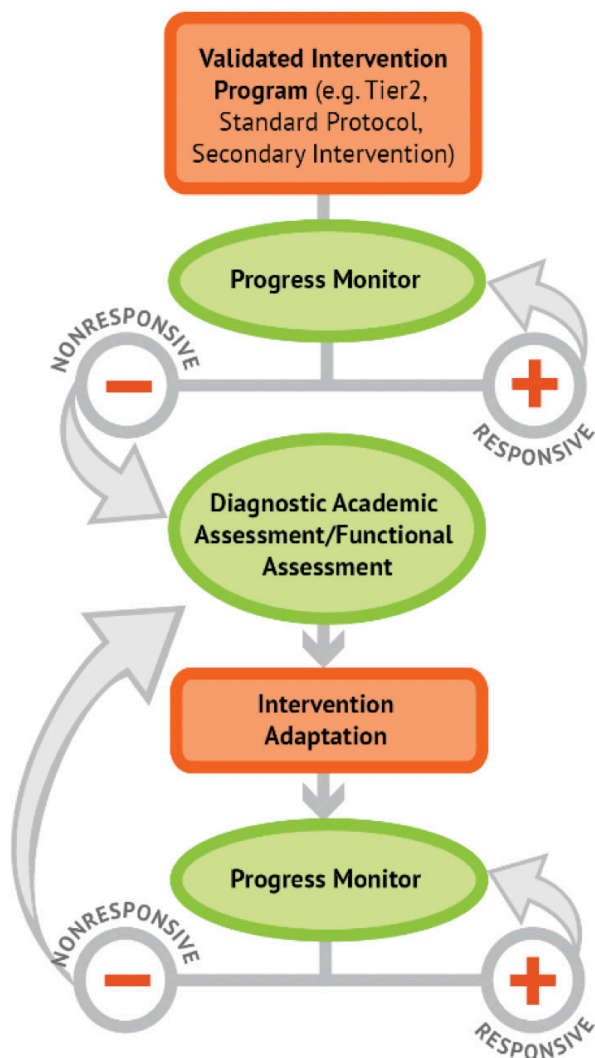
Use Handout #1 in the Appendix section of this document and the YouTube link: [Applied Example: Taylor Case Study](#) to apply a real-life application exercise.

Application Exercise 2: DBI Key Components and Assumptions

Question: In Taylor's Case Study, what are key DBI components and assumptions?

Decision Making and Flow Chart

HOW DO YOU USE THE DBI PROCESS FLOW CHART?



PL Tip: Use Handout #1 Applied Example: Taylor Case Study and DBI Flow Chart for application exercise

Application Exercise 3: DBI Flow Chart

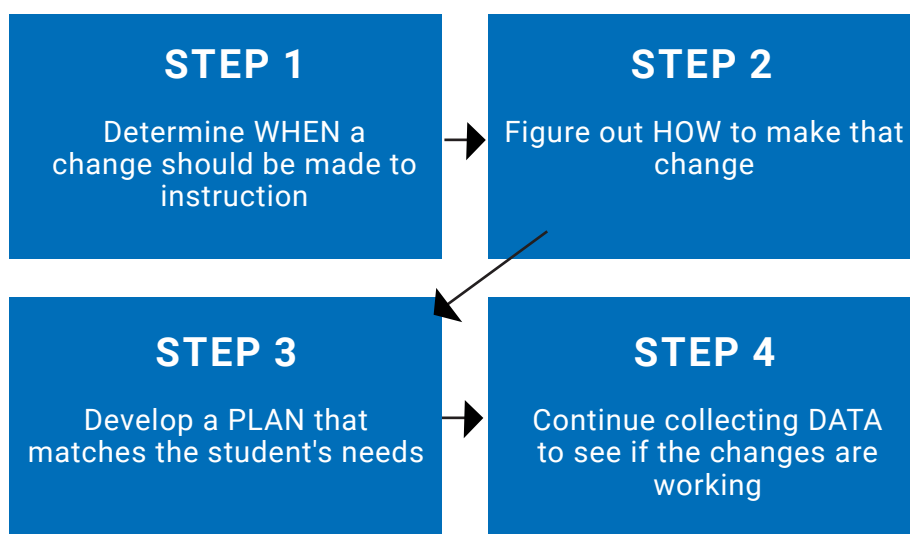
Question: Can you identify the 5 steps of DBI in Taylor’s Case Study?

Step 1
Step 2
Step 3
Step 4
Step 5

Figure 3.
(Project STAIR & NCII Webinar Series, 2020)

In-Person Strategies to Support

A TEAM OF TEACHERS AND INTERVENTIONISTS SHOULD UTILIZE DBI:



STEPS FOR TEACHER IMPLEMENTATION SUCCESS

START WITH A HIGH-QUALITY STANDARD PROTOCOL.

- Your school or district may already have curriculum resources.
- Use the NCII tools chart to determine if an instructional program fits high-quality standard.

ESTABLISH AMBITIOUS GOALS.

- Have a clear understanding of student achievement and needs to drive goal setting.

STAY FOCUSED.

- Students may have multiple areas of need. Begin with one student in the most important area of instruction.

BE PROACTIVE.

- Try to plan ahead to minimize any conflicts that may occur within a school and with scheduling. All stakeholders should be informed and involved as needed.

COLLABORATE.

- Other professionals may offer ideas or resources that have yet to be implemented in the classroom.

STICK WITH IT

- You may have to try a few different adaptations or intensification modifications to find the right fit for a student. Stay the course even if progress is slow.

(Lindstrom et al., 2019)

DBI in the Virtual Environment

WHAT ARE THE KEY TERMS I NEED TO KNOW TO IMPLEMENT VIRTUAL LEARNING IN CONJUNCTION WITH DBI?

Learning Management System: according to author Ellis Ryan “A learning management system is a software application for the administration, documentation, tracking, reporting, automation and delivery of educational courses, training programs, or learning and development programs” (Ellis 2009).

Asynchronous and synchronous: these terms used in the online learning and teaching environment refer to the group of activities posed to engage the learners with content.

In the simplest terms, **asynchronous activities** are independent of time or place.

- Tools such as using an electronic presentation with an interactive slide allows for the student performance to be reviewed by the instructor in real time.
- Tools such as virtual whiteboards and collaborative slides are some sources of synchronous activities.
- Tools such as virtual manipulatives, interactive worksheets, using the virtual software to respond through chat, having a poll, or using an interactive text-based response sheet allows the teacher and student to interact in the synchronous virtual environment.

Activities that specifically address Data-Based Individualization (DBI) in the synchronous environment include fluency activities and the use of manipulative objects. It is recommended to build consistency and practice fluency and manipulatives 3 to 5 times a week for a period of 20-30 minutes.

In contrast, **synchronous activities** occur at the same time and place. Synchronous activities are experienced when learners and instructor interact directly at the same time with each other.

- Examples of asynchronous activities include videos of the teacher solving exemplar tasks or problems, defining concepts, rehearsing a specific skill.
- The use of videos as the primary asynchronous resource is desirable due to instructors having the capability of filming themselves working out problems or tasks utilizing document cameras or filming their screen while explaining a concept or working out a problem. Ideally these videos should be short (students tend to become unfocused after 9 minutes) and focused so that the students experience the asynchronous material as a resource that enables them to understand concepts and practice skills in preparation to the synchronous activities for the teacher.

Students specifically supported by DBI respond to small intensive videos that they can use as reference points for performance. Instructors can also increase relationship building if the content is culturally relevant for the group of students.

DBI in the Virtual Environment

HOW DO I BUILD COMMUNITY IN THE VIRTUAL ENVIRONMENT?

One of the central features of learning online is the interaction that occurs with the content, the learners and instructor. The online learning environment should put the learner at the center of experiences and interactions that promote the use of the content to construct meaning (Swan 2004). In middle school activities where students and instructor debrief with each other about their backgrounds, cultures, feelings, and ideas should promote a community of respect and appreciation.

If and when appropriate and safe, instructors can ask students to share:

- likes and dislikes
- meaningful life events, or self-content that they would like to share with the community.

Some of the questions middle school students respond to could be:

- What is your favorite show?
- What music and artist/s are on your favorite playlist?
- What is your favorite part about learning virtually?
- What is your most used app on your device?
- How do you keep in touch with your friends and family?

COMMUNITY
COMMUNITY
COMMUNITY
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COMMUNITY
COMMUNITY



DBI in the Virtual Environment

WHAT ARE SOME FORMS OF FEEDBACK I SHOULD CONSIDER IN THE VIRTUAL ENVIRONMENT?

Assessment and progress monitoring are embedded as part of the DBI model which can be used for feedback from both instructor and student. In the virtual environments the feedback can take the form of videos or using the chat function on the virtual communication platforms. The practice of regular mutual feedback can promote the sense of community and help students create habits that promote the use of benchmarking for self-analysis as a learning tool.

DBI TOOLKIT

The following items are a list of resources used by practitioners on the field during face to face and virtual learning. This should be considered as examples and not endorsement of products.

- Learning Management Systems: [CANVAS/Google classroom/Classdojo](#)
- Synchronous resources: [Mural/Miro/Jamboard/Brainiaccamp/Toytheater](#)
- Asynchronous: [Youtube/Screencastify](#)
- Feedback: [Flipgrid/Socrative](#)
- DBI and Middle School Algebra: [Project STAIR playlist](#)

[How Can School Personnel Intensify and Individualize Intervention?](#)

[Tracking Intervention Dosage to Inform Instructional Decision Making](#)



DBI in the Virtual Environment

Elements of DBI	Teacher Tool	Looks in class like....
Diagnostic	Learning Management System (CANVAS/Google Classroom)	Assessment is given virtually, preferably during a synchronous time to monitor student behavior and engagement
Fluency	Kahoot_it, Socrative, LMS (Canvas/Google Classroom)	Fact fluency timed 5 minutes all operations (+, -, x, /). asynchronous activity.
Using concise precise Mathematical Language	Google Docs	Have students journal vocabulary words using a graphic organizer (Definition/ Characteristics/ Example/Non-Example)
Using Concrete, Pictorial, Abstract examples	Virtual manipulatives (toytheater.com)	During synchronous activities the teacher and student manipulate objects, such as fraction strips, together to promote conceptual understanding.
Explicit instruction: Supporting practice asking the right questions and eliciting responses	Zoom/Google meet and Google docs	During synchronous time students can engage in workshop style participation with the teacher, can also use the chat function or a collaborative interactive document.
Explicit instruction modeling/ Guided practice (explanation/ think out loud, planned examples)	Screencastify	During asynchronous time students can watch and re-watch videos with explicit modeling taped by teachers.

Table 2

Professional Learning Tip

Use Handout #1 in the Appendix section of this document and the YouTube link: [Applied Example: Taylor Case Study](#) to apply a real-life application exercise.

Application Exercise 5: DBI in the Virtual Environment

Question: In Taylor's Case Study, how can Taylor's intensive intervention be adapted to the virtual setting?

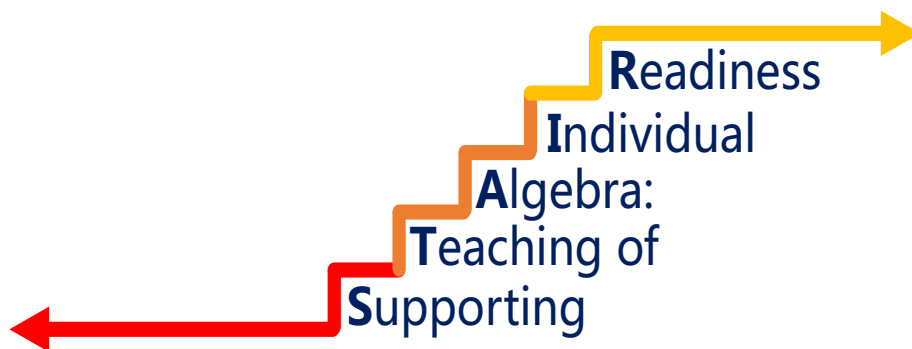
Additional Resources

ADDITIONAL RESOURCES



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Handout One

Math Case Study: Taylor

Case Study: A Real-Life Story of One Student with Difficulties in Math
Handout #1 provides a case history of one middle school student experiencing math difficulty.

BACKGROUND

Taylor is a 6th grade student in Mr. Klein's math class. For the past 3 months, Mr. Klein has been utilizing strategic grouping to meet the needs of small groups of students. Taylor is a part of a small group that is receiving additional practice on a validated, computer-based intervention 3 times per week for 20 minutes each session.

Please note the information presented in this case study depicts the experiences of a student and her family, teacher(s), and classmates. The student's name and other identifying information have been changed to ensure family and student privacy.

When reflecting and discussing this case history, it may be helpful to consider the following guiding questions:

- **What are the student's academic challenges?**
- **What are the academic interventions that the student received?**
- **What are the academic outcomes, after she received the academic intervention?**

Then begin considering the following guiding questions of how the 5 key steps to implementing the DBI framework, how the DBI framework complements the decision making process, and how Project STAIR Tailored supports DBI decision making. Project STAIR Tailored encompasses 1) DBI framework, 2) intervention content, assessments, intervention delivery, and decision making. Together these components complement one another in a fluid responsive process. These questions, interventions and recommended supports are intended to guide the educator when supporting student academic success.

FIVE KEY STEPS TO IMPLEMENTING DBI

- Step 1: Validate the program
- Step 2: Progress monitor
- Step 3: Make decisions based on student responses
- Step 4: Make instructional change
- Step 5: Continue to progress monitor

DBI ESSENTIAL STEPS REFRESHER

[STAIR Tailored: Defining DBI](#) (6:22)

DBI DECISION MAKING REFRESHER

[STAIR Tailored: DBI Decision Making](#) (8:31)

Handout One

Math Case Study: Taylor

STEP 1: ESTABLISH THAT THERE IS A TIER 2 VALIDATED INTERVENTION PROGRAM

[Taylor Case Study: Step 1](#) [0:00-1:30]

STEP 2: PROGRESS MONITOR (TIER 2 VALIDATED PROGRAM)

[Taylor Case Study: Step 2](#) [1:30-5:17]

As part of the small group intervention that Taylor is receiving, Mr. Klein also has Taylor take a weekly algebra progress monitoring measure on the computer. Mr. Klein sets a goal for Taylor using established benchmarks from the computerized system and Taylor's median baseline score.

Mr. Klein then graphs weekly scores and examines the data to see if Taylor is profiting from the instruction and intervention being delivered.

STEP 3: DECISION MAKING RULES

[Taylor Case Study: Step 3](#) [5:17-6:24]

After 2, 8-week cycles of data collection, Mr. Klein finds that Taylor's progress is suggesting non-responsiveness to the intervention efforts based on his decision making rules. Mr. Klein's decision making rule for this data is that if the trend of the data is below the goal like after 6 to 8 data points, he will implement an instructional change. Mr. Klein moves to the next steps in the process.

Based on student responsiveness: [6:24-7:39]

- Continue the Tier 2 program with progress monitoring
- Collect diagnostic data

Given that Taylor has not been responsive to Tier 2 instruction, Mr. Klein knows that he needs to make a change in the intervention he is providing.

Mr. Klein's first step is to collect some additional diagnostic data to determine where Taylor's skill deficits are. He might use the DOMA, for instance, to determine where patterns are. He might also use error analysis from work samples.

STEP 4: MAKE INSTRUCTIONAL CHANGE

[Taylor Case Study: Step 4](#) [7:39-9:27]

Based on the error analysis from Taylor's recent work samples and her patterns of errors on the computerized progress monitoring, Mr. Klein determines that he needs to build in more fluency practice using fractions and also incorporate fraction practice using visual representations. Mr. Klein decides to try to deliver this to Taylor and small group of other students during the 20-minute intervention time, instead of the computerized instruction.

STEP 5: CONTINUE TO PROGRESS MONITOR

[Taylor Case Study: Step 5](#) [9:27-10:38]

Mr. Klein continues to monitor Taylor process. As you can see, things are not always smooth across the year. Mr. Klein continues to be responsive to the data. He continues to use his decision making rules. He compares the trendline to the goal line and makes a change in intervention as it's needed. By looking at the data on the graph, you can see his persistence over time. As Mr. Kline gets to the end of the year, Taylor is actually now on an upswing. She is on track and has actually exceeded her goal line for a couple of data points. Mr. Kline will want to continue to think about program needs to be put in place when considering Taylor's instruction for 7th grade, during the next year.