

Data-Based Individualization Hypothesis Development Tool

Analyzing diagnostic data is a critical step of the data-based individualization (DBI) process. In this step, educators review data to help generate a hypothesis for why a student has not yet responded to the intervention and determine the necessary adaptations to improve student outcomes.

This tool is designed to assist you in developing a hypothesis to explain why a student has not made adequate progress in an academic intervention and to help you identify next steps for intensifying the intervention. You can use this tool before or during a DBI team meeting to develop an initial hypothesis or to refine or change an existing hypothesis.

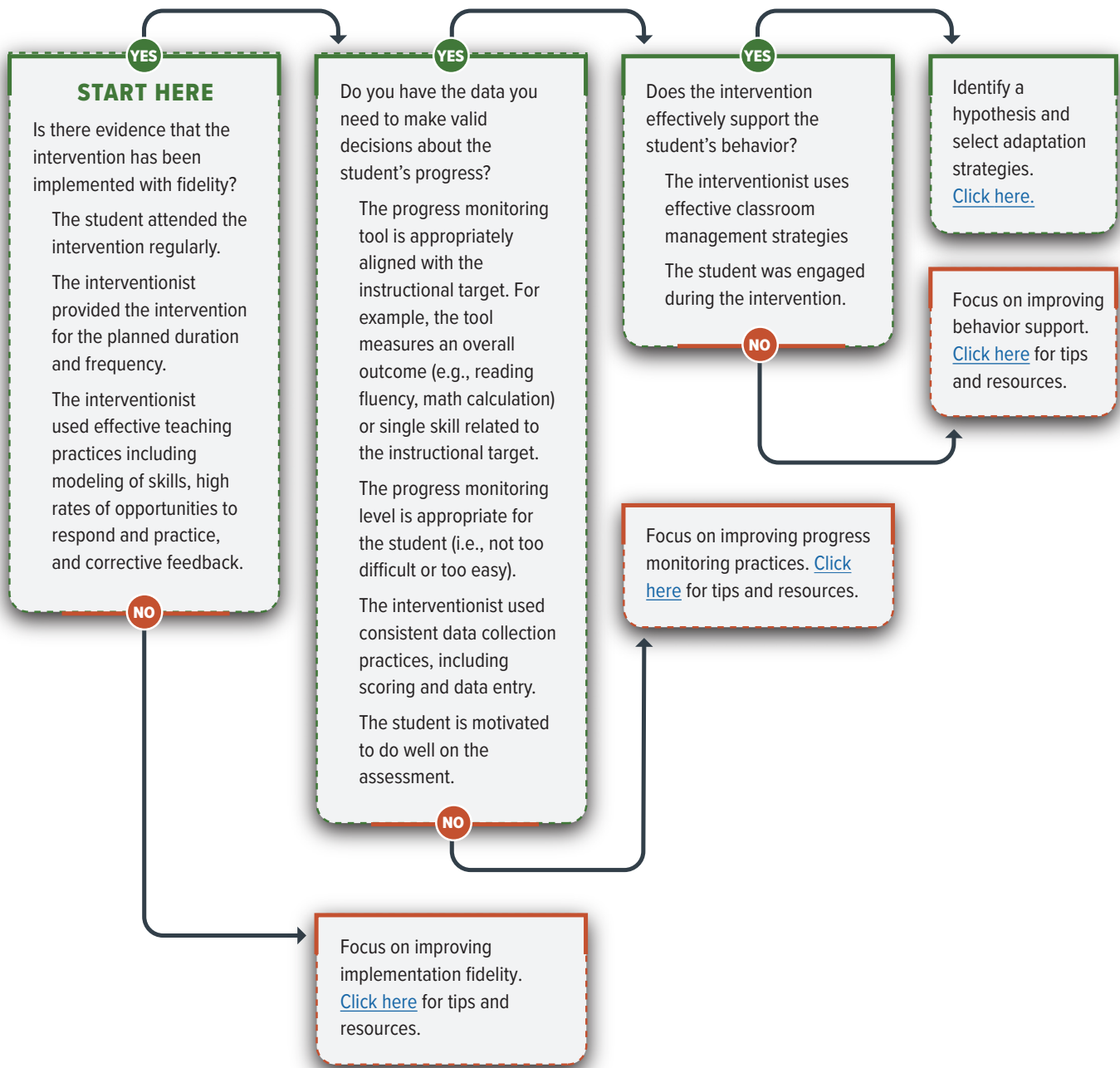
Types of data that you may consider when using this tool include the following:

- ☐ Student intervention and progress monitoring plan
- ☐ Graphed progress monitoring data
- ☐ Student work samples, including in-class assessments
- ☐ Fidelity of implementation data

Step 1. Review Intervention Fidelity, Progress Monitoring, and Behavior Support

The following are questions you should ask before identifying a data-based hypothesis. Beneath each question are considerations to help you determine whether to focus on improving this area or move on to the next question (i.e., answer “Yes” or “No”). In some cases, there may be evidence for some of the considerations and not others, or the evidence may be varied. Use the available evidence and your professional judgment to determine whether to respond “Yes” or “No” to each question.





Step 2. Identify a Hypothesis and Select Adaptation Strategies

The flowchart below uses the learning hierarchy (Burns et al., in press; Haring & Eaton, 1978) to help you identify a data-based hypothesis for why a student is not making adequate progress. Note that the hypotheses in the flowchart provide common reasons a student does not make adequate progress in an intervention and should be considered as starting points for further data review. You may identify other hypotheses based on the available data. Click on the link below your identified hypothesis to see more information on next steps.

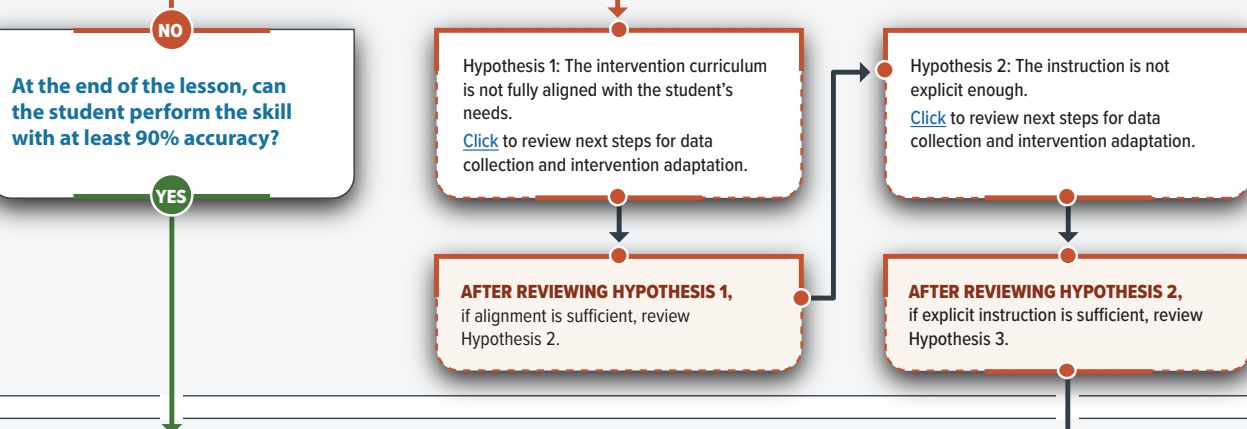
Where to start:

- ☐ If the student is making little to no progress (e.g., the progress monitoring trend line is flat or shows little change), start in the Acquisition Phase.
- ☐ If the student is making some progress but not enough to reach their goal, start in the Proficiency Phase.
- ☐ If a student is making adequate progress in the intervention but having difficulty outside the intervention setting, start in the Generalization Phase.

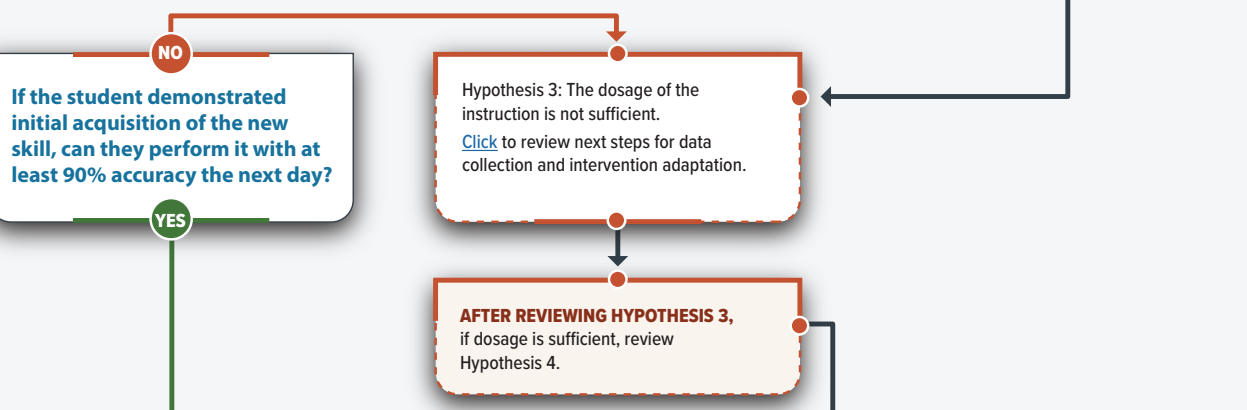


ACQUISITION PHASE

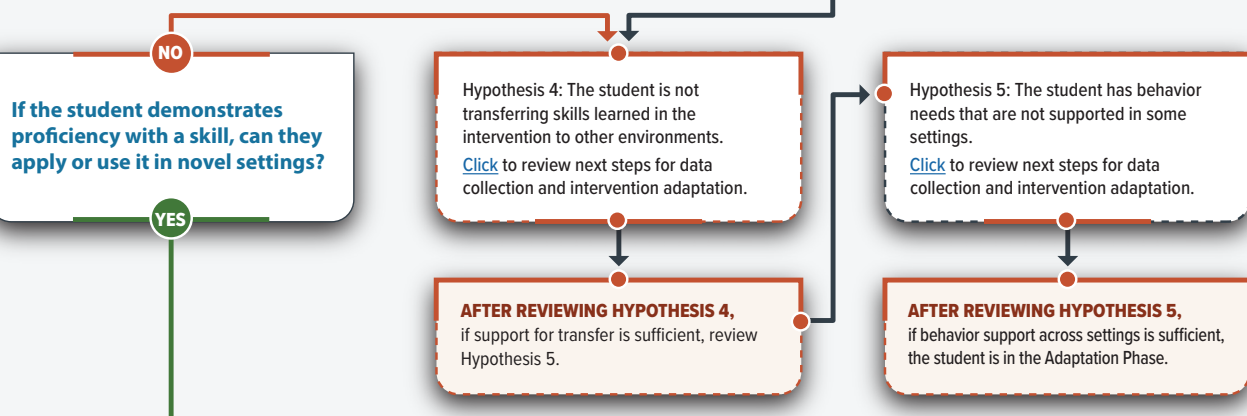
The instructional goal is to improve accuracy.

**PROFICIENCY PHASE**

The instructional goal is to improve retention and speed.

**GENERALIZATION PHASE**

The instructional goal is to improve application and transfer of skills.

**ADAPTATION PHASE**

Students apply skills to solve problems.

A student in this phase of learning would not need intervention related to the skill in question.





HYPOTHESIS 1

The intervention curriculum is not fully aligned with the student's needs.

A lack of progress may indicate that the intervention is misaligned with the student's skill needs. Consider the following data collection activities to inform decisions about improving the alignment of the intervention:

- ☐ Conduct error analysis to identify the most common types of errors the student is making (e.g., letter–sound patterns, wrong operation).
- ☐ Conduct informal diagnostic assessments (e.g., phonics or phonemic awareness inventory, math skills analysis) to determine whether the student has the prerequisite skills to benefit from the intervention.
- ☐ Review the intervention curriculum to determine whether the skills targeted in the intervention match the skills the student needs to master.
- ☐ Review language acquisition data (for multilingual learners) to determine whether lack of progress is related to English language development.

Next Steps: If data show that the intervention is **aligned with the needs of the student**, [review Hypothesis 2: Explicit Instruction](#). If data show that the intervention **is not aligned with the needs of the student**, select one or more of the following adaptation strategies.

Suggested Adaptations

- ☐ Use an alternative intervention program that addresses the student's needs more fully.
- ☐ Supplement the intervention program with targeted instruction and practice in missing prerequisite skills.
- ☐ For English learners, enhance language support in the intervention.

Resources



Tools

[Literacy Sample Lessons to Support Intensifying Intervention](#)



Tools

[Mathematics Sample Lessons to Support Intensifying Intervention](#)



Documents

[Multi-Tiered System of Supports for Multilingual Learners: Using Culturally and Linguistically Aligned Practices](#) (see PLUSS framework, p. 4)





HYPOTHESIS 2

The instruction is not explicit enough.

Explicit instruction that includes modeling, guided practice, and independent practice is critical for students with intensive needs. Students who have not yet acquired a skill may need more explicit instruction, with increased modeling, guided practice, and feedback. Consider the following data collection activities to inform decisions about improving the explicitness of the intervention:

- ☐ Observe the student and teacher during intervention and core instruction for:
 - ☐ Amount of modeling and guided practice provided by the teacher during the lesson
 - ☐ Number of opportunities to respond to instruction (ideally, 6 to 12 per minute for small groups)
 - ☐ Amount of immediate corrective feedback that the teacher provides

Next Steps: If data show that the teacher is **providing sufficiently explicit instruction**, [review Hypothesis 3: Dosage](#). If data show that the intervention is **not explicit enough**, select one or more of the following adaptation strategies.

Suggested Adaptations

- ☐ Provide additional modeling and guided practice.
- ☐ Break lesson sections into smaller, simpler chunks.
- ☐ Increase the number of opportunities to respond during the intervention.
- ☐ Increase the use of specific and immediate corrective feedback.

Resources



Self-Paced Modules

[Self-Paced Features of Explicit Instruction Course](#)



Tools

[Assessment of Use of Opportunities to Respond](#)





HYPOTHESIS 3

The dosage of the instruction is not sufficient.

The term “dosage” refers to the number of opportunities the student has to respond to instruction and receive feedback from the teacher. Research suggests that students who struggle to retain a skill may benefit from increased opportunities to respond to instruction and receive immediate corrective feedback (Burns et al., in press). Consider the following data collection activities to inform decisions about improving the dosage of the intervention:

- ☐ Observe the student during intervention and core instruction for:
 - ☐ Number of opportunities to respond to instruction (ideally, 6 to 12 per minute for small groups)
 - ☐ Amount of immediate corrective feedback that the teacher provides
 - ☐ Total intervention or instructional time spent on target skills

Next Steps: If data show that the **dosage of the intervention is sufficient**, [review Hypothesis 4: Attention to Transfer](#). If data show that the **dosage of the intervention is not sufficient**, select one or more of the following adaptation strategies.

Suggested Adaptations

- ☐ Increase the number of opportunities to respond during the intervention.
- ☐ Increase the amount of intervention time.
- ☐ Decrease the group size.
- ☐ Embed additional practice and feedback throughout the day.

Resources



Documents

[Strategies for Scheduling: How to Find Time to Intensify and Individualize Intervention](#)



Self-Paced Modules

[Self-Paced Features of Explicit Instruction Course](#) (see Module 2)



Tools

[Assessment of Use of Opportunities to Respond](#)





HYPOTHESIS 4

The student is not transferring skills learned in the intervention to other environments.

When the student is making adequate progress in intervention but not applying skills across other settings, it may be a transfer issue. In this case, the teacher may need to support the student with applying the skill across settings. Consider the following data collection activities to inform decisions about improving the student's transfer of skills to settings outside the intervention:

- ☐ Observe the student outside the intervention for:
 - ☐ Alignment of instructional routines and teacher language across settings
 - ☐ Amount of immediate corrective feedback that the teacher provides outside the intervention
 - ☐ Number of opportunities to respond to instruction outside the intervention
- ☐ Observe instruction within the intervention for:
 - ☐ Explicit instruction on when and how to use learned strategies across the day

Next Steps: If data show that **the support for transfer is sufficient**, [review Hypothesis 5: Behavior Support](#). If data show that the **support for transfer is not sufficient**, select one or more of the following adaptation strategies.

Suggested Adaptations

- ☐ Embed guided practice on target skills in core instruction and other environments.
- ☐ Explicitly teach students when and how to use learned strategies throughout the day.
- ☐ Provide visual scaffolds to help students apply skills across environments.





HYPOTHESIS 5

The student has behavior needs that are not supported in some settings.

When the student is making progress in intervention but having difficulty in other settings, it may be that the student has behavioral needs that are not supported in those settings. Observe classroom management and instruction across settings to identify the following:

- ☐ Use of effective classroom management strategies
- ☐ Student engagement and time on task
- ☐ Antecedents and consequences of behavior
- ☐ Possible function of the student's behavior

Next Steps: Based on data, select one or more of the following adaptations to support the student's behavior across settings:

Suggested Adaptations

- ☐ Increase the use of effective classroom management strategies (e.g., clear expectations, routines and procedures, specific praise).
- ☐ Adjust the setting (e.g., change a student's seat, use small-group instruction).
- ☐ Use reinforcers to acknowledge the student's use of appropriate behavior.
- ☐ Add behavior management strategies based on the function of the student's behavior.

Resources



Tools

[Behavior Strategies to Support Intensifying Intervention](#)



Course Content

[Behavior Support for Intensive Intervention Course Content](#)



Webinars

[Classroom Management Strategies to Support All Learners](#)



Next Steps

Once you have developed an initial hypothesis and selected potential intervention adaptations, share this information with DBI team members. After you have described the student and shared your initial hypothesis, the DBI team may ask clarifying questions to help refine the hypothesis before identifying potential adaptation strategies for intensification. It is important to remember that the DBI process is iterative; therefore, you should focus on a single dimension and choose no more than a few adaptations at a time. Doing so will enable you to test which adaptations improve student progress and to guide future decisions. The National Center on Intensive Intervention data teaming tools and intervention plan template may be useful for documenting the plan for the student.

After you have implemented an adaptation strategy, the next step in the DBI process is to continue to collect, graph, and analyze progress monitoring data to determine whether the student is responding to the adapted intervention. It is important to stick with an adaptation for at least 6 weeks (or 6 data points, if data are collected more than once per week) to determine whether the adaptation is improving the student's performance. If the student is not responsive, use this tool again to further refine your hypothesis.

Resources



Tools

[Data Teaming Tools](#)



Tools

[Intervention Plan \(for Small Groups or Individual Students\)](#)



Implementation Tips and Resources to Improve Fidelity, Progress Monitoring, and Behavior Support

Fidelity of Intervention

When a student is not making adequate progress in the intervention, begin by considering intervention fidelity. Fidelity data are important because they enable you to rule out inconsistent implementation as a potential cause of a student's lack of progress. Address needs related to fidelity before making other changes to the intervention.

Implementation Tips

- ☐ Ensure the interventionist has the necessary training.
- ☐ Address scheduling conflicts that affect intervention session delivery.
- ☐ Limit disruptions during intervention sessions.
- ☐ Work with the student and family to improve attendance.
- ☐ Boost student engagement during intervention sessions.

Resources



Tools

[Student Intervention Implementation Log](#)



Tools

[Considerations for Effective Implementation: 5 Elements of Fidelity](#)



Progress Monitoring

It is important to ensure that progress monitoring data accurately represent the student's progress. For example, very low scores may indicate that the progress monitoring measure is not sensitive to changes in the student's performance, and highly variable scores may indicate that the assessment was not administered consistently.

Implementation Tips

- ☐ Ensure that the assessment is intended to detect small changes in student performance and there is evidence supporting its use for progress monitoring.
- ☐ Progress monitor at the student's instructional level.
- ☐ Use a validated approach to set a goal that is ambitious and realistic for the student.
- ☐ Collect progress monitoring data regularly (e.g., weekly), using a consistent approach.
- ☐ Increase the student's motivation by providing a reinforcer after the assessment. If you use a reinforcer, provide it each time you assess the student.
- ☐ Graph data to allow for visual analysis.

Resources



Tools

[Student Progress Monitoring Tool for Data Collection and Graphing](#)



Tools

[Overview of Academic Goal-Setting Strategies](#)



Documents

[Strategies for Setting High-Quality Academic Individualized Education Program Goals](#)



Tools

[Ensuring Fidelity of Assessment and Data Entry Procedures](#)



Tools

[Academic Progress Monitoring Tools Chart](#)



Self-Paced Modules

[Academic Progress Monitoring: Course Collection](#)



Behavior Support

Behavior challenges may affect a student's ability to attend to instruction, or instructional demands may trigger unwanted behavior that results in missed instruction. Using data to inform your thinking, consider the following adaptations to the intervention. Implement adaptations to improve behavior support while continuing to identify other hypotheses as necessary.

Implementation Tips

- ☐ Increase the use of effective classroom management strategies (e.g., clear expectations, routines and procedures, specific praise).
- ☐ Adjust the setting (e.g., change a student's seat, use small-group instruction).
- ☐ Use reinforcers to acknowledge the student's use of appropriate behavior.
- ☐ Add behavior management strategies based on the function of the student's behavior.

Resources



Tools

[Behavior Strategies to Support Intensifying Intervention](#)



Course Content

[Behavior Support for Intensive Intervention Course Content](#)



Webinars

[Classroom Management Strategies to Support All Learners](#)



References

- Burns, M. K., Welland, J. B., Singell, E. L., & Graves, K. A. (2025). Effects of intensifying reading interventions with a skill-by-treatment interaction framework: A contraindication single-case design. *Learning Disabilities: A Multidisciplinary Journal*, 30(1).
- Haring, N. G., & Eaton, M. D. (1978). Systematic instructional technology: An instructional hierarchy. In N. G. Haring, T. C. Lovitt, M. D. Eaton, & C. L. Hansen (Eds.), *The fourth R: Research in the classroom* (pp. 23–40). Merrill.

