Chapter 8 – Interventions and Programs

Section 8.1 Interventions

The interventions used at Tiers 2-4 should supplement the learning that is occurring in the Tier 1 classroom, address identified weaknesses in basic skills, and accelerate learning toward individual expectations. Continuous monitoring of the implementation of the intervention (fidelity) and progress monitoring data is critical to determining the impact on student achievement.

Schools have the responsibility to use scientifically validated (research and evidence-based) intervention methods to prevent wasting time and effort and to give students the best chance to be successful (Wright, 2007).

Specialized interventions may include research or evidence-based interventions which are specialized in being specific to identifying certain individual students or groups of students with specific types of academic and behavioral problems. The two programs requiring research based and evidence-based practices are the No Child Left Behind Act (NCLB) of 2001 and Individuals with Disabilities Education Improvement Act (IDEIA) reauthorization of 2004 (Brown-Chidsey & Steege, 2005). Research based and evidence-based interventions are evaluated with sound experimental designs that result in providing evidence of socially significant behavior changes.

A sound experimental design would include:
- Clearly defined dependent variable/intervention and data(s)
- Set of procedures to consistently implement the independent variable (highly specific, replicable directions, steps and procedures.)
- A design that controls for threats to internal validity (Brown-Chidsey & Steege, 2005)

Key components to gauge interventions also include analysis of both previously conducted research that supports the intervention and review of current research that documents intervention effectiveness.

There are three elements that integrate research and evidence-based interventions:
1. Requirement for the use of scientifically based instructional/intervention practices
2. Evaluation and documentation of how a student responds to intervention
3. Emphasis on the use of data for decision making at each step (Brown-Chidesy & Steege, 2005)

Interventions can be categorized into three groups: scientifically proven, research based, and evidence-based.

Scientifically proven interventions mean that scientific results have already been published in peer-reviewed journals using the scientific rigor described in the definition from NCLB (see chapter 3).

Research based interventions mean the methods, content, materials, etc. were developed in guidance from the collective research and scientific community.

Evidence-based interventions indicate that specific data is available that shows the intervention improves student outcomes.

Interventions at Tier 1 include the instructional practices in use in the general education classroom. Teachers routinely address student needs and environmental factors to create the optimal learning environment. Tier 1 interventions include seating arrangements, fluid and flexible grouping, lesson pacing, collaborative work, demonstrations of learning, differentiation of instruction, and student feedback. Responding to student performance is a critical element of all classroom learning environments. The teacher's ability to identify areas of focus, scaffold the learning for the individual to reach the expectation, and support the solidification of new learning behaviors is vital to student success.

Interventions at Tier 2 are typically standard protocols employed by the school to address the learning and/or behavioral needs of identified students. These protocols are typically implemented in a specific sequence, based on the resources available in the school. For example, at Georgia Middle School, students who are identified as needing additional reading support will go to a reading intervention during Connections. During the intervention, the teacher uses specific research based practices to address the group's reading needs while keeping a clear focus on the GPS, grade level expectations in the content areas, and transfer of learning to the general classroom. **Collaboration between the intervention teacher and the general teacher team is required.** During the intervention, progress monitoring is used to determine the student's response to the intervention. The progress monitoring tool and frequency of implementation are collaboratively determined by the teaching team and the intervention teacher. Based on the progress monitoring data, the school standard protocol process may require individual students to continue in the intervention, move to another Tier 2 intervention, or move to Tier 1 interventions. For a few students, the data team may consider the need for Tier 3 interventions based on individual responses to Tier 2 interventions.

Interventions at Tier 3 are tailored to the individual, and in some cases small group. The SST should choose interventions based on evidence-based protocols and aggressively monitor the students response the intervention and the transfer of learning to the general classroom.

Interventions at Tier 4 are specially designed to meet the learning needs of the individual. These specially designed interventions are based on the GPS and the individual learning and/or behavioral needs of the individual.

Georgia Department of Education Resources available to support teachers and students:

- Keys to Quality
  - Research based instructional strategies
  - Professional learning resources
  - Implementation Resource Guide
- GeorgiaStandards.Org
  - Frameworks
  - Tasks
  - Videos
- The Learning Village
  - Math I teachers supports
  - Destination Math
- Online Assessment System
  - Assessment items for progress monitoring
- Georgia Virtual School (GAVS)

The Department encourages districts to use these protocols to provide a common framework for choosing evidence-based interventions:

- Evidence-Based Decision Making Cycle: Shows the process that teams can utilize to integrate the use of data and research into the decision-making cycle.
- Types of Research Methods: Provides an overview of the types of research methods used in research on interventions, and compares their level of rigor in determining "what works."
- Critical Reading Protocol for Studies about Interventions: Provides a framework (in conjunction with the Types of Research Methods tool) for assessing the quality and rigor of a research study on an intervention.
- Intervention Review Protocol: Provides a framework (in conjunction with the Types of Research Methods and Critical Reading Protocol tools) for the review of all available information on an intervention, including research studies, to support decisions about the selection of interventions.

Evidence-Based Decision Making (EBDM) Cycle
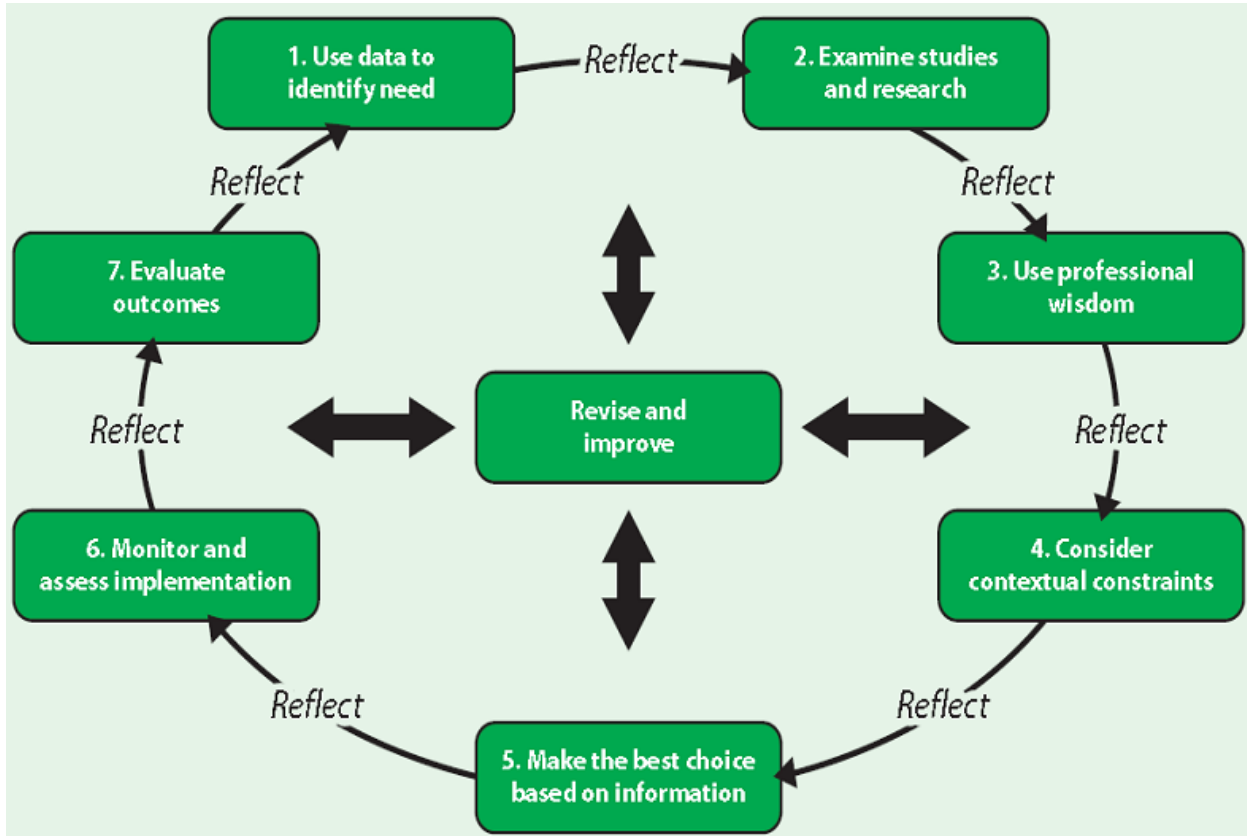
Types of Research Methods

Evidence of effectiveness	Research Method	This is …	This works best for these kinds of questions…	This doesn't work well for these kinds of questions…	Additional Things to Note
LOW	**Descriptive-Qualitative (Ethnography/ Case Study)**	Detailed descriptions of specific situation(s) using interviews, observations, document review You describe things as they are.	How do people implement this program? What challenges do people face? What are people's perceptions?	Did the program cause any changes in participants' outcomes?	
	Descriptive-Quantitative	Numerical descriptions (frequency, average) You measure things as they are.	How many people are participating in this program? What are the characteristics of people in this program? How well did participants in this program do?	Did the program cause any changes in participants' outcomes? Why did the program work this way?	
	Correlational/ Regression Analyses	Quantitative analyses of the strength of relationships between two or more variables (e.g., are teacher qualifications correlated with student achievement?)	What is the relationship between various school or classroom context factors and student achievement? Is the extent of implementation of a program across sites correlated with better outcomes?	Did the program cause any changes in participants' outcomes?	Look for words such as, "more likely than," "less likely than," "associated with," "related to," and "correlated with."
	Quasi-experimental	Comparing a group that gets a particular intervention with another group that is similar in characteristics but did not receive the intervention—**no random assignment used**	Did the program cause any significant differences in participants' outcomes as compared to non-participants with similar characteristics who did not receive the intervention?	How are people implementing the program? Why did the program get the results it did?	Look for the phrase "compared with." Look for results that are both statistically significant and meaningful. NOTE: Did the study test the equivalence of treatment and control groups prior to the intervention?

Evidence of effectiveness	Research Method	This is …	This works best for these kinds of questions…	This doesn't work well for these kinds of questions…	Additional Things to Note
	Experimental	**Using random assignment** to assign participants to an experimental or treatment group and a control or comparison group (e.g., one receives the intervention and one does not)	Did the program cause any significant differences in participants' outcomes as compared to the control group's outcomes?	How are people implementing the program?	Look for words such as, "causes" or "leads to." Look for results that are both statistically significant and meaningful. NOTE: The intervention should be clearly defined so that you know what it was designed to entail, and to what extent it was implemented in the study. Also look for information on the experience of the control group.
HIGH	**Meta-analysis**	Synthesis of results from multiple studies to determine the average impact of a similar intervention across the studies	Over all studies conducted on a particular intervention or strategy, what can be said about the direction or strengths of the impacts? What does the totality of research studies say about the effectiveness of a program?	How are people implementing the program? What are people's perceptions?	Look for selection criteria used to include studies and look for measures of effect size. Look for differences in results among the studies. Do some studies show positive results while others show negative or do all studies show positive results?

Adapted from Edvantia SBR Rating for Technical Assistance Programs and Services form (2007) and Carter McNamara Overview of Methods to Collect Information handout (1998)

Critical Reading Protocol for Studies about Interventions

Directions: Review the study with a highlighter in hand to note interesting and/or relevant information. As you answer the questions below, please also note any questions the study raises or any other information you might need to know.

1. Authorship: Who is the author? Is it the vendor or a third party? Who funded the study? Is there an obvious bias?

Tip: Third party studies often find lower impacts than studies done by the vendor. It is also important to critically read reports or stories about studies.

2. Sample: How closely do the participants in the study mirror your population?

Tip: The more closely the characteristics of the participants in the study resemble the characteristics of your districts, schools, teachers, and students, the more likely it is that the study's findings will be similar for your group.

3. Research design: What kind of design did the researchers use? Is there anything unclear or potentially problematic about the design?

Tip: If you want to know about the impact of a program, well-designed quasi-experimental and experimental studies or meta-analyses are the best. (Look at Types of Research Methods Handout.) When looking at quasi-experimental and experimental studies, it is very important to look at the characteristics of the two groups being compared to see if they differ in any way.

4. Results: What kinds of outcomes were measured? On which measures did they find statistical significance? Are the results practically significant? If you were going to implement this, what kind of outcomes can you reasonably expect?

Tip: You want to see statistically significant results on the program outcomes. Practical significance involves looking at actual mean differences between the two groups and determining if implementing the intervention is worth your time and effort.

5. Implementation: What information is provided about implementation? Does the study connect implementation to the results in any way?

Tip: The outcomes of all interventions depend on how well they have been implemented. You will want to pay special attention to any aspects of implementation that are associated with more or less positive results.

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Intervention Review Protocol

To review an intervention, you will want to collect the following kinds of information: program descriptions, implementation information, and outcome data. Sources for this information might include: vendor websites, internal or 3rd party evaluation reports, What Works Clearinghouse(WWC) or other reviews, research reports (e.g. reports from Mathematica, AIR, RAND, MDRC, etc.), descriptive studies and journal articles (peer-reviewed, research & practitioner).

Now that you have your portfolio of information on the intervention together, below are some questions to answer and discuss as a group. The responses should help in making decisions about which interventions might be most beneficial to your students.

Desired Outcomes: What are the goals of this intervention? How well do those match with your students' needs (address problem areas, meet subgroup needs, etc.)?

Program Features: What are the core features of the intervention? How consistent are they with your team's/school's/district's vision? Do these features seem like they would lead to the desired outcomes?

Implementation Issues: As you reviewed the portfolio, did any implementation challenges become apparent? Could any issues like leadership capacity, staffing, funding and facilities pose a challenge to implementation?

Extent of the evidence: Are there any studies that used a strong design to determine the intervention's impact? Did they find statistically significant effects? On what?

Initial Impression: Recommended   Need more info.   Not recommended

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Summary Checklist of Information Available on Interventions

This checklist is designed to help you develop a **portfolio** with enough information to make an informed decision. If you have a specific kind of information, you will indicate that on the table by a check or by the name of the document. In cases where information is not available, you will note that in the table. Under the outcome information section, you will indicate the type of studies you have. This will help you determine the extent of the evidence on a particular intervention.

Name of Intervention	Program Description (sources: vendor, evaluations)	Implementation information (sources: vendor website, other districts, practitioner journals, evaluations)	Type of Outcome Information Available (sources: evaluations, What Works Clearinghouse (WWC) or other review websites, research journals)				
			Descriptive	Correlation / Regression	Quasi-experimental	Experimental	Meta-analysis

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