IMPLEMENTATION SCIENCE

Office of Special Education Professional Development
New Jersey Department of Education
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What is Implementation Science?

• Implementation Science is the study of factors that influence the full and effective use of innovations in practice. (Fixsen, D., NIRN Founder, 2015)

• The term “science to service” really means “science implemented in service” (Stolz, S.B. 1981)

• Implementation factors are identified (or developed) and demonstrated in practice.
Systemic Change

“change that pervades all parts of a system, taking into account the interrelationships and interdependencies among those parts.”
Application of Implementation Science

• Throughout this presentation we will reference a hypothetical evidence-based practice (EBP) as a tangible example of Implementation Science in use.

Hypothetical EBP:
Increase the use of technology (including Assistive Technology) to improve accessibility to grade-level materials thus supporting the successful inclusion of students with disabilities in general education settings.
Active Implementation

*Involves the “what, how, who, and where”*

Diagram:
- WHAT: Effective Innovations (EBPs)
- HOW → EFFECTIVE IMPLEMENTATION
- WHO → EFFECTIVE IMPLEMENTATION
- WHERE → ENABLING CONTEXTS
- Significant Outcomes
Implementation Barriers

• Lack of fidelity (not all components put in place or done well)

• Lack of time implemented-not an adequate amount of time implemented to provide necessary data

• Lack of appropriate scale of use-does not reach a large enough audience to be seen as effective
Application of Implementation Science: Overview

WHAT

Increased use of technology

HOW

Each teacher identify needs through needs assessment

WHO

Classroom with group or with individual student

WHERE

Enables increased accessibility to grade-level content
Active Implementation Frameworks

• Successful implementation requires…
  • **Stages of Implementation** - purposeful matching of critical implementation activities to the staging process
  • **Implementation Drivers** - the active use of “best practices”
  • **Improvement Cycle** - a focus on continuous, purposeful improvement
  • **Implementation Team** - experts, developers, and purveyors dedicated to the process
  • **Usable Interventions** - well-defined so implementers can clearly execute with fidelity
Active Implementation Frameworks: Diagrams

Adapted from AI Hub by the State Implementation and Scaling-up of Evidence-based Practices Center – SISEP 2017 and from the National Implementation Research Network - NIRN 2017
Implementation Stages

4 Stages of Implementation

1. Exploration
2. Installation
3. Initial Implementation
4. Full Implementation
Stage One: Exploration

• Starting place for districts or schools
• Readiness is assessed in this stage
  • If not ready, Implementation Team is responsible for getting the schools, classrooms, teachers ready

The Hexagon Tool
Defined Initiative:

**Initiative Objective** – to increase accessibility of grade-level materials for ALL students and specifically to promote LRE, for students with disabilities

**Evidence-Based Practice** – use of technology, including assistive technology

**Stages of Implementation Science for School Initiative**

**Stage One – Exploration**

- Gather data
- Share information, identify which student(s) need the support
- Explore and research different EBPs
- **EBPs identified** – utilizing technology to increase accessibility to grade-level materials
- **Implementation Team identified** by administrator
- Implementation Team develops **needs assessment** to ready the teachers Installation stage
Stage Two: Installation

• Acquire or repurpose resources needed

• Selecting staff, sources for training, providing initial training, finding assessment tools, assuring access to materials

• Implementation Team helps secure needed resources to do the work ahead
Application of Implementation Science: Stage 2

Stages of Implementation Science for School Initiative
Stage Two – Installation

• **Needs Assessment**
  • Identify needs and deficit areas
  • Begin to build Implementation Plan
    • Identify WHAT specific technologies
      • Acquire or repurpose resources
    • Identify HOW
      • Select staff involved with Implementation Plan
      • Identify any training needed
      • Identify how EPB will be measured
    • Identify WHO will be implementing technology
    • Identify WHO will be utilizing technology
    • Identify WHERE these new technologies will be utilized
Stage Three: Initial Implementation

• When the innovation is being used for the first time by practitioners and staff in context

• Known to be the most fragile state

• Implementation teams help develop staff competencies required by the EBP, help administrators adjust organization roles and functions, and help leaders fully support the process.
Stages of Implementation Science for School Initiative
Stage Three– Initial Implementation

- **Roll-out** the Implementation Plan
- **Share EBPs** chosen to implement
- **Display and model** use of technologies
- **Identify necessary trainings**
- **Identify tools to measure** effective use EBPs (technology)
- **Plan for touch-base meetings**
- **Identify classroom look-fors**
- Be sure that staff has **peer support**
- Administrators **plan for observations**
Stage Four: Full Implementation

• When 50% or more involved are using an effective intervention with fidelity and good outcomes

• The new ways of providing service are now the standard ways of work

• Implementation Teams ensure that the gains in the use of effective practices are maintained and improved over time and through transitions of leaders and staff.
Stages of Implementation Science for School Initiative

Stage Four– Full Implementation

Implementation Team:

- Uncovered assistive technologies in IEPs to identify optimal use
- Researched many technologies and identified technologies that would improve access
- Decision made to pilot “text to speech” in one grade
- Developed grade-level assessment for the grade-level standard “authors purpose” to establish baseline for all students
- Identified “who” would receive the intervention

The team developed the following plan:

- PD for the teachers and parents regarding the technology system
  - parents learned technology for home and school
  - teacher support in copying assignments
  - technologies modeled
- Changes and improvements in practice
  - copies ahead of time and sent home
  - student the opportunity to sit elsewhere
  - support from main office staff in making copies of enlarged text
Application of Implementation Science: Stage 4 continued

**Stages of Implementation Science for School Initiative**

*Stage Four– Full Implementation*

The team developed the following plan for new EBP:

- Team identified students
- “Text to speech” option
- Staff received training
- Students were trained
- Teachers taught how technology could be blocked to control use
- Head phones to promote focus and to “hear” without disturbing
- Follow-up meetings with staff
- Review progress monitoring with teachers.
- Team and administrators observed technologies to insure fidelity
- Use of AT became more simple to use for students, parents and staff
- Use of AT and technology option of text to speech on the computers became the norm when measure standards other than grade-level reading and comprehension
Sustainability

• Sustainability planning and activities need to be an active component of every stage.

• **Financial sustainability** involves ensuring that the funding streams for delivering the new practice are established, adequate and sustainable. This means funding for teacher, staff, and administrative time.

• **Programmatic sustainability** involves ensuring that the implementation infrastructure is established, reliable, effective, and sustainable.
Stages of Implementation Science for School Initiative

Now that the team has built capacity

- The team developed a plan for sustainability:
  - Decided to memorialize process (programmatic - established)
  - Built upon activities already in place (programmatic - reliable)
    • Increased plan to include another pilot grade (programmatic - effective)
    • Improved needs assessment to identify resources
    • Teachers reviewed IEPs earlier to identify and plan for assistive technologies
    • Improved base-line data assessment/ screening and post test
    • Planned for screening at beginning of the year
    • Planned for periodic review of progress, made teachers accountable for formative assessments (programmatic- sustainable)
Stages of Implementation Science for School Initiative
• The team developed a plan for sustainability:
  • Planned parent orientation for use of technologies in the classroom
  • Planned for administrators to observe first pilot classes to identify look-fors (financial – administrative time)
  • Planned new pilot to observe and meet with first pilot (financial – teacher time)
  • Planned for teachers to have substitute coverage to observe peers in other classrooms (financial – teacher time)
  • Captured and retained data results from previous year to encourage “buy in”
  • Vertical articulation with next year’s teachers to identify what technologies work for which students
Usable Interventions

The following criteria need to be in place to ensure that your intervention is usable:

• Clear description of the program
• Clear essential functions that define the program
• Operational definitions of essential functions
• Practical performance assessment

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Usable Interventions: Components

• Clear Description of the Program:
  • Not every program or practice is a good fit with the needs, values and philosophy of your State or district.

• Clear Essential Functions:
  • Knowing the core intervention components may allow for more efficient and cost effective implementation, and lead to confident decisions about what can be adapted to suit your school or district.
Usable Interventions: Components continued

• **Operational Definitions:**
  • Express each core component in terms that can be taught, learned, done in practice, and assessed in practice.

• **Practical Performance Assessment:**
  • An effective performance (or fidelity) assessment provides evidence that the program is being used as intended and is resulting in the desired outcomes.
Implementation Drivers

• 3 Types of Implementation Drivers:
  • Competency Drivers
  • Organization Drivers
  • Leadership Drivers

When integrated and used collectively, these drivers ensure high-fidelity and sustainable program implementation.
Competency Drivers

• **Selection**: Effective staffing with specific knowledge, skills and abilities

• **Training**: Staff need to learn when, how, and with whom to use new skills and practices

• **Coaching**: New skills must be practiced & mastered

• **Fidelity Assessment**: Implementing the evidence-based program or innovation as intended
Organization Drivers

• **Decision-Support Data Systems**: System for identifying, collecting, and analyzing data that are useful to the teacher, school, district and other implementing environments

• **Facilitative Administration**: Focuses on the internal processes, policies, regulations, and structures over which a school, district or implementing organization has some control

• **Systems Interventions**: Building and district leaders and teams identify barriers that are beyond their level of authority and work to bring issues to the attention of those who can address such barriers.
Leadership Drivers

• Leadership is foundational to the work of implementation.

• Within this Active Implementation Framework the focus is on the role rather than the authority position of a leader.

• In the context of active implementation, Leadership Drivers focus on leadership approaches related to transforming systems and creating change.
Key Features of Drivers

• **Integrated** – means the philosophy, goals, knowledge and skills related to the new program or practice are consistently and thoughtfully expressed in each of the implementation drivers.

• **Compensatory** – means that the skills and abilities not acquired or supported through one driver can be compensated for by the use of another driver.
Implementation Teams: Focus

Implementation Teams focus on:
• Increasing “buy-in” and readiness
• Installing and sustaining the implementation infrastructure
• Assessing and reporting on fidelity and outcomes
• Building linkages with external systems
• Problem-solving and promoting sustainability
Implementation Teams: Need

All Teams should have:
• Knowledge & understanding of the selected program
• Knowledge of implementation science & best practices
• Applied experience in using data for program improvement

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**Improvement Cycles**

**PLAN-DO-STUDY-ACT (PDSA)**

- **Plan** — identify barriers and specify the plan to move forward as well as the outcomes that will be monitored.
- **Do** — carry out the strategies or plan as specified to address the challenges.
- **Study** — use the measures identified during the planning phase to assess and track progress.
- **Act** — make changes to the next iteration of the plan to improve implementation.
Improvement Cycles: Why?

Why do we purposefully use Improvement Cycles?

• New practices do not fare well in existing organizational structures/systems.

• Too often, effective innovations are changed to fit the system… rather than the existing system changing to support the effective innovations.
Summary: Using Implementation Frameworks

- Identification and validation of need
- Consideration of required changes
- Planning for change
- Communication plan
- Implementation plan
- Data collection and reporting plan
Resources

