SISEP
State Implementation and Scaling-up of Evidence-based Practices

MICHIGAN Department of Education

Integrating Improvement and Implementation Sciences to Enhance Educational Outcomes

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Introduction

The purpose of this Brief is to:

a. compare implementation science and improvement science,
b. illustrate how the core tenets of improvement science and implementation science can be utilized together to improve student outcomes and school efficiency,
c. provide an example of how the synergy between implementation science and improvement science has been done effectively within a State Education Agency (SEA), and
d. explain how implementation and improvement science can be utilized together in a school setting to improve implementation capacity and conditions.

Educational interventions, programs, or curricula are often put into place without attending to (a) what is needed to implement them well and support practitioners and (b) intentional processes to optimize the environment in which they are implemented (Fixsen et al., 2005; Lyon & Bruns, 2019). Whether coming from a state legislature, state or local education agency, board of education, school leadership, or even driven by practitioners, the pressure to adopt and implement an evidence-based practice or program to improve school and student outcomes can jeopardize an initiative's ability to achieve its intended outcomes. School leaders and practitioners can harness two fields of inquiry—implementation science and improvement science—to increase the likelihood of success when moving a new evidence-based intervention, program, or curriculum into practice. Implementation science is the scientific study of methods and strategies that support the uptake of evidence-based practices into regular use (Eccles and Mittman, 2006). This field of inquiry can help explain why only some education improvement efforts succeed and why only some improvements are sustained over time (Fixsen et al., 2013). Thus, leveraging core tenets of both improvement science and implementation science can set state and local education agencies up for success when rolling out new initiatives to improve student outcomes.

"Focus on quality is not only about reducing poor quality but also about implementing evidence to improve quality." (Koczwara et al., 2018)

Improvement Science or Implementation Science?

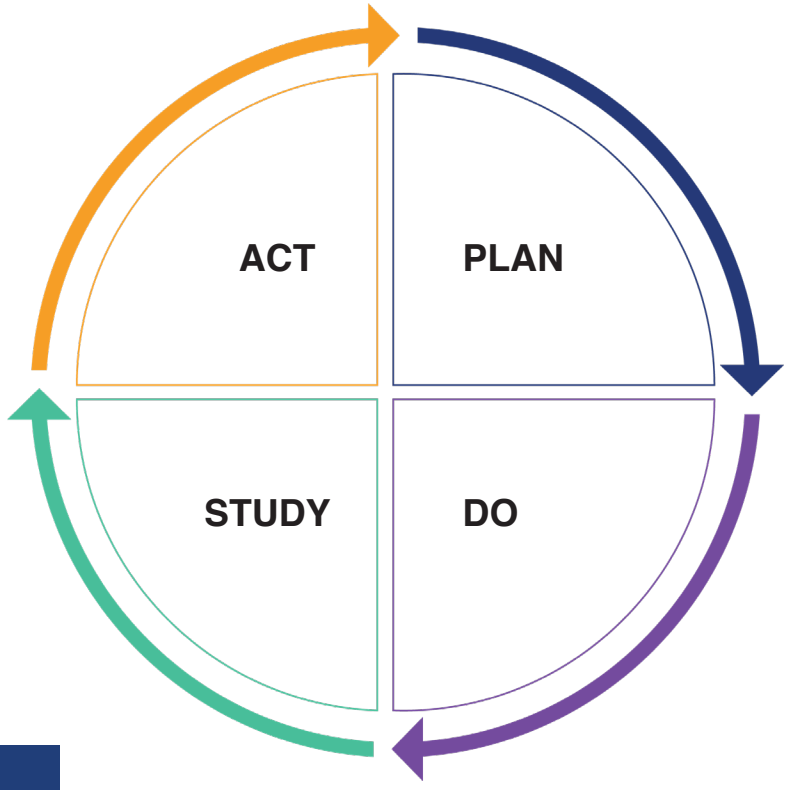
Implementation science and improvement science have both been leveraged to increase students' academic, behavioral, and social-emotional outcomes. Implementation science emphasizes integrating implementation supports (e.g., training, coaching, teams, leadership) to move evidence-based practices into routine use. Furthermore, implementation science often starts with exploration activities, including identifying the need for a new practice or structures to support existing programs and creating readiness and buy-in. On the other hand, improvement science typically begins with a specific problem of practice that requires addressing. Improvement science — a methodology that focuses on improving practice — efforts are undertaken by a data-driven approach that aims to improve general practice, using cycles of inquiry systematically (e.g., plan-do-study-act [PDSA] cycles). Commonalities and differences exist between implementation and improvement sciences. Both sciences (a) rely heavily on data to assess their respective outcomes of interest, (b) focus on improving systems, (c) simultaneously address policy and practice, (d) use improvement cycles, and (e) attend to practitioner-level needs. Differences between improvement science and implementation science, however, should be highlighted. Primarily, improvement science is problem-specific and user-focused, while implementation science is context and practice concentrated. Both sciences focus on enhancing the use (adoption, implementation, and sustainment) of effective practices or programs to improve outcomes for students (Proctor et al., 2011). **Table 1** outlines the key differences between the two sciences regarding purpose, problem, approach, and outcomes assessed.

Table 1.
Descriptions of implementation science and improvement science (Proctor et al., 2011; Koczwara et al., 2018)

	Implementation Science	Improvement Science
PURPOSE	Work to promote the systematic uptake of evidence-based interventions/practices/programs into practice and policy	Work to improve the quality, safety, and value of education
PROBLEM	Research and practice-based evidence is slow to be adopted in educational practice, and uptake may be uneven across local or state education agencies	Significant disruption or failure in the education system that adversely affects students, staff, or the system as a whole and prevents it from realizing its full potential
APPROACH	Implementation frameworks and strategies; capacity-building	Interventions (activities or tools)
Potential Outcomes Assessed	<u>Implementation Outcomes</u> Acceptability, Adoption, Appropriateness, Cost, Feasibility, Fidelity, Penetration, Sustainability	<u>Service Outcomes</u> Client-centeredness, Effectiveness, Efficiency, Equity, Safety, Timeliness

Figure 1.

Plan-Study-Do-Act Improvement Cycles



Leading Through Change

Once a need for change or new practice has been identified, it is critical not to jump straight to implementation efforts. Proper planning and capacity-building upfront will not only save time but also increase the likelihood of the change or practice having a sustained impact on students, families, or the community. **Figure 1** exhibits a process for integrating the best practices of implementation science and improvement science for a defined program or practice. The flowchart, **Figure 2**, starts at the 'Study' phase of the Plan-Do-Study-Act cycles, where data are collected to ensure any changes or new practices address the need. Then, a team 'Acts' by defining a change or new practice. In the 'Planning' phase, the team creates a plan to build a hospitable environment and the needed infrastructure to support and sustain the change or new practice in the school or classroom. Finally, the plan is put into action, and practitioners are provided support as they implement the new program or practice.

Figure 2.

Process for integrating implementation science with improvement science for a program or practice.

Does an Implementation Team exist or can an existing team be repurposed?

Yes. Ensure that the team is representative, including those affected by new practices or changes, and has a working agreement.

No. Create a representative implementation team with a working agreement.

Has a root cause been established for the needed change using disaggregated data?

Yes. Great! You're ready to set a goal(s).

No. Conduct a Root Cause Analysis to get to the bottom of what the issue is.

Has the team developed SMARTE (SMART with an equity-focus) goals related to the area that needs to improve or change? How will you know that you are successful?

Yes. Focus on the equitable nature of the goal(s) - what gaps need to be reduced or eliminated?

No. Set goals paying particular attention to how each goal addresses service gaps.

Has a new practice (change) been selected that addresses the root cause for the needed change?

Yes. Ensure the selection process includes a review of how each practice/change addresses need, fit, and capacity to implement, as well as its evidence, usability, and available support.

No. Utilize the Hexagon Tool to engage in dialogue related to each potential to

Is the practice usable (is there enough information to make it trainable-learnable-doable-assessable in practice)?

Yes. Excellent! Begin identifying what external support might be needed.

No. Ensure the program has a clear description and program components, as well as operational definitions and a practical fidelity assessment.

Has the team conducted an assessment of what initiatives might conflict with the new practice or change)?

Yes. Excellent. Double check the right people are around the table to help remove some of these barriers.

No. Conduct an initiative inventory to: (1) identify other initiatives/programs in place and (2) determine whether other initiatives need to be aligned or deselected.

Does a plan exist to address training; coaching; monitoring fidelity/integrity, processes, and outcomes; communication; and identifying potential barriers related to the implementation of the practice?

Yes. Also consider whether it is worth starting implementing with a smaller group to increase learning. Smaller groups, but at a higher frequency of review yield better information.

No. Work with the team to build a plan that addresses infrastructure needed to support implementation.

Does the team have a plan for the ongoing review of data to inform planning and decision-making?

Yes. Great, you are ready to begin implementing the plan.

No. Before implementing, establish a process to use data for ongoing decision-making.

Once the plan is in place, it's time to implement!

Case Study

In 2020, the Michigan Department of Education launched the Michigan Integrated Continuous Improvement Process (MICIP) to support districts' continuous improvement efforts by integrating implementation best practices. Using an equity lens, MICIP centers a whole child approach in the context of continuous improvement and systems change. Implementation best practices are incorporated into the practice selection process; it attends to creating buy-in and readiness while also focusing on establishing systems and structures to support implementation (aligned selection-training-coaching-fidelity assessment processes), monitoring, and evaluation.

References

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Acknowledgements

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