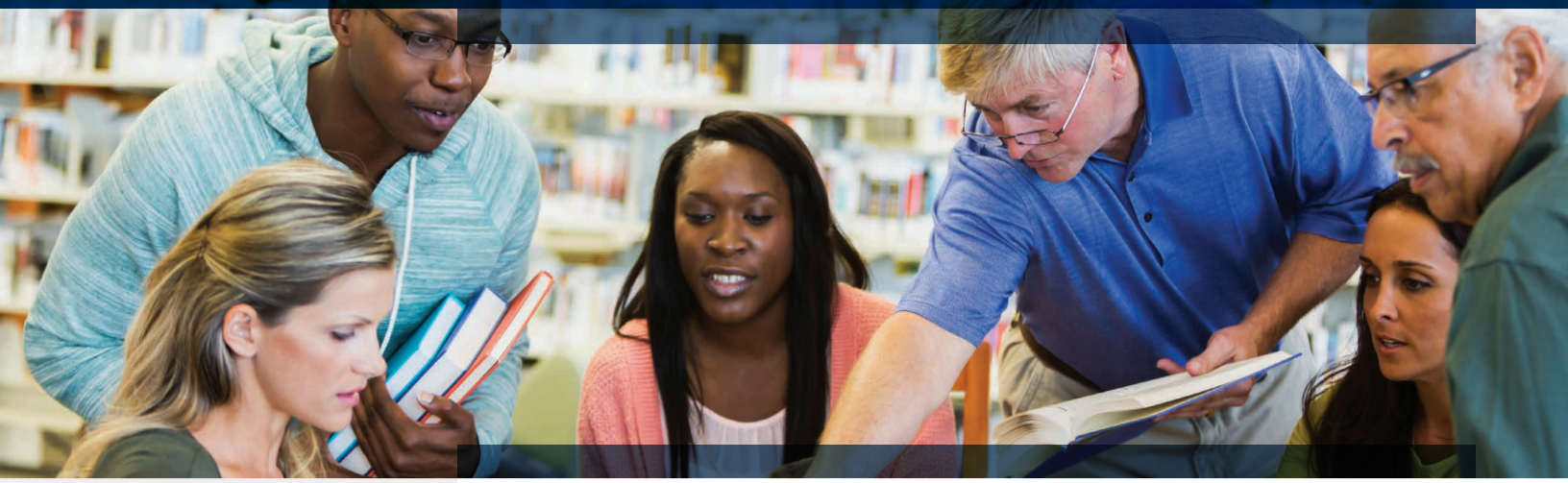
Networked Improvement Communities

Measurement Elevates Practice



Networked improvement communities (NICs) have become an increasingly popular way to address the complex and persistent challenges of educational practice. Through NICs, researchers and practitioners collaborate to systematically test and refine theories of change in real-world settings — and they learn about what works, for whom and under what conditions. For example, teachers and school leaders have used NICs to address achievement gaps, improve teacher evaluation and promote student agency.

Underpinning this work is improvement science, which provides a framework for implementing, testing and refining interventions and strategies in different contexts. Measurement and study — key differentiators from the status quo in school improvement — lay a foundation for quick wins, accelerated improvements and a continuous learning culture.

An Option for Innovation in ESSA

Under the Every Student Succeeds Act (ESSA), schools identified as needing improvement must implement evidence-based strategies and practices that have a "strong," "moderate" or "promising" research base.

There's another option. For interventions that show promise but don't have a robust research base, NICs give teachers and school leaders the opportunity to drive innovation by identifying, testing and refining these practices.

Carrie Scholz, principal researcher at the American Institutes for Research (AIR), notes, "NICs offer a systematic approach for understanding an opportunity for positive change, selecting an intervention that is most likely to yield that desired improvement and determining whether the intervention leads to its intended, positive outcomes. All of this occurs in a relatively short period of time."

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The Advantages of NICs

Schools and districts often try out new practices ad hoc, in many cases based on test scores and anecdotal feedback from teachers, students and parents. In contrast, NICs create a structure to gather feedback systematically and examine that feedback across classrooms and schools. NICs can help school leaders better understand if an innovation is working — and how they can adapt it to work even better.

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Scholz says, "The NIC improvement process provides the structure and yields the data that educators need to inform their ongoing efforts to grow and improve as professionals in the service of their students."

A Next Step for NICs: Measurement

Once practitioners have established NICs, it's important to understand whether they're working as intended. Kirk Walters, AIR managing researcher, explains, "Without good measures, it's impossible to know whether a seemingly good change idea actually was a good idea. You can't improve what you can't measure."

Measurement is difficult to do well. Here's some guidance to help you begin:

- **Measures should provide indications of short-term changes in practice as well as progress toward the desired outcome.** Measures should help educators understand whether there is improvement — and provide some indication of changes needed for the next cycle. For example, if teachers adapt their instruction to improve math outcomes for students who are behind grade level, they will want to collect data on how well students grasp a lesson, how engaged students are, how well teachers delivered the lesson and how confident teachers felt with the new instructional techniques. Feedback on the effects of changed practices will provide direction in the next cycle of improvement to strengthen instruction.

- **Measures should be practical.** For each area of feedback (for example, student engagement or teacher self-efficacy), measures should consist of four- or five-item exit tickets or questionnaires that are easy to complete and don't overburden respondents. Whenever possible, feedback collection should correspond to typical practices. In the math example, teachers can give students a short quiz on the lesson. Principals can conduct classroom visits and complete a quick rubric on teacher practices related to the new instructional technique.

- **Measures should come from reliable and valid scales.** Previous research provides many tested, reliable and valid scales. Although it's important not to overburden respondents with too many measures, using existing measures from this previous work increases the likelihood of getting the intended feedback.

NICs in Action

MEASURING PROGRESS THROUGH SURVEYS

The Better Math Teaching Network is a community of AIR researchers, teachers and instructional leaders aiming to increase the number of students deeply engaged in making sense of and understanding algebra. In its third year of implementation, this network has more than 60 members — most of whom are high school algebra teachers — who represent districts and schools from every state in New England.

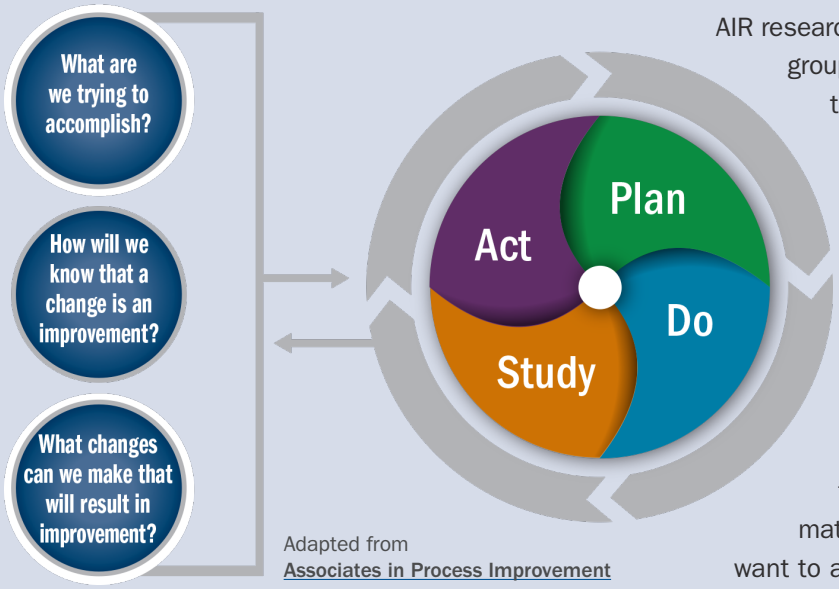
In addition to iterative, rapid-cycle testing of promising instructional routines, the Better Math Teaching Network is tracking progress against its aim: increasing the number of New England algebra students who can connect, justify and solve algebra problems. One way the NIC is measuring progress is through a student survey. Initial findings show that students report deep engagement in making mathematical connections, creating justifications and problem solving with more frequency throughout the first school year of implementation.

"As the network continues to grow, the student surveys provide a consistent measure that allows us to track progress in reaching the aim each year and across years," Toni Smith, AIR principal researcher, says.

> "I felt like an equal. I guess this is the kind of professional development I want/need and thrive on!"
>
> – A CT4EDU participating teacher

KEEPING ON TRACK WITH PLAN-DO-STUDY-ACT CYCLES

AIR researchers, Michigan State University researchers and staff at Oakland Schools, a regional service agency in Michigan, are collaborating to support the integration of computational thinking in math and science instruction. Dubbed CT4EDU (for computational thinking in education), this community includes 10 teachers from five schools in the region.



Adapted from Associates in Process Improvement

AIR researchers introduced the idea of an NIC to this group and facilitated a half-day conversation to identify root causes preventing the integration of computational thinking in elementary instruction. From there, the community developed a theory of action to map out future work, including professional development, lesson creation and measure selection. AIR principal investigator Julie Kochanek notes, "The teachers identified their lack of knowledge about computational thinking and student engagement in math and science as two root causes they want to address."

Before its second year, the group met to plan several Plan-Do-Study-Act cycles of improvement, with adjustments planned from lessons learned after each cycle. Early on, this network is showing promising returns: The participating teachers are engaged in lesson development, are committed to the network goals and feel valued by the researchers and developers.

About the American Institutes for Research

Established in 1946, the American Institutes for Research (AIR) is an independent, nonpartisan, not-for-profit organization that conducts behavioral and social science research on important social issues and delivers technical assistance, both domestically and internationally, in the areas of education, health and workforce productivity.

Why AIR?

We're the experts on improvement. AIR experts developed a framework, tools and structures for continuous improvement in education. We know how to facilitate NICs, and we also study their effectiveness.

We're true partners. When you work with AIR, you hire a partner, not a consultant. We collaborate with you and your stakeholders from the start of the improvement process — developing measures and collecting data together — so that everyone will be engaged and take ownership throughout the process. We work closely with you to identify your pain points and your priorities.

We're a full-service provider. Our researchers and experts in practice, many of whom are former teachers and school leaders, provide evidence-based best practices, support you in implementing them and help you select appropriate measures. We're with you through the full cycle of continuous improvement in education.

FOR MORE INFORMATION ABOUT OUR NICs WORK

CONTACT

Amy Feygin, Senior Researcher
afeygin@air.org
312.690.7385

Julie Kochanek, Managing Researcher and Practice Area Director
jkochanek@air.org
312.283.2312

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