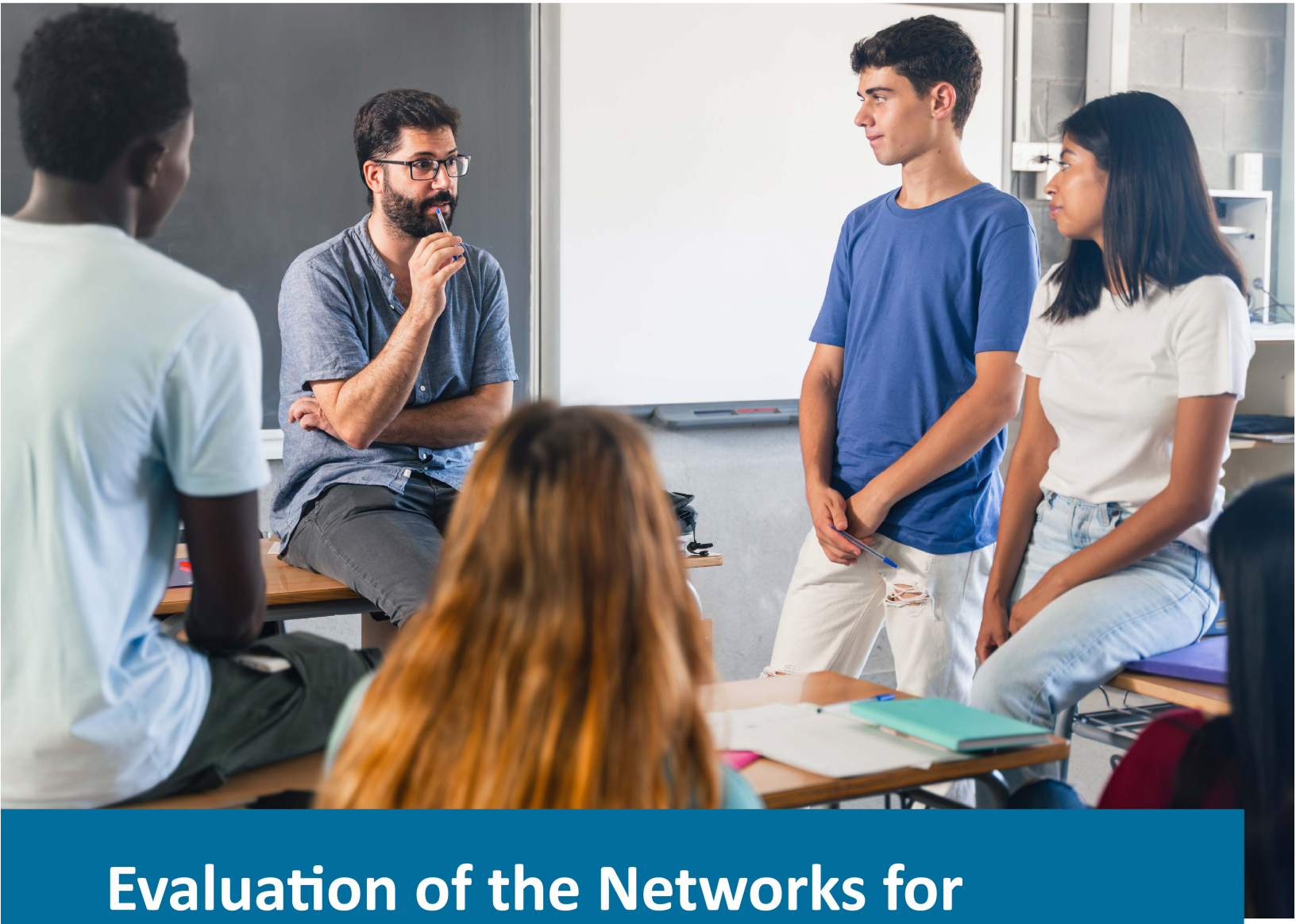
AIR®
Advancing Evidence.
Improving Lives.

APRIL 2026



Evaluation of the Networks for School Improvement Initiative

School-Level Implementation of Continuous Improvement

Michael S. Garet, Laura B. Stein, Ryan C. Eisner, Matthew J. Farmer, Sara Mitrano, Damon Blair, Emma Wilson, Katheen T. Jones, and Kianna Medina

Contents

Exhibits

Abstract

This report presents findings from the evaluation of the Networks for School Improvement (NSI) initiative, funded by the Gates Foundation. The initiative supported networks of schools in implementing continuous improvement (CI) processes to improve outcomes for Black students, Latino students, and students experiencing poverty. The evaluation draws on data from 25 NSI, spanning the 2020–21 to 2024–25 school years, using artifacts collected from CI teams, surveys of school leaders, interviews with intermediary staff, and case studies from a sample of participating schools. Analyses focus on the implementation of key features of CI, including inquiry cycles; other core parameters of CI (e.g., root cause analysis, theory of practice improvement, aims, change ideas, and data use); and how CI teams incorporate and address equity. In addition, we examine variation in implementation across the 5 years of each NSI grant; the conditions that enable schools to implement CI; how CI practices are spread within a school or beyond; and the sustainability of these efforts after grant funding ended.

Overall, the NSI initiative supported widespread adoption of some core CI practices, but implementation varied substantially across NSI and across participating schools. Although all NSI emphasized inquiry cycles, the NSI approach to CI differed across NSI, and many cycles were incomplete or lacked full documentation. Most schools implemented some elements related to the core parameters of CI—such as root cause analysis, aim statements, and theories of practice improvement—but the depth and consistency of implementation varied widely across NSI.

School CI teams generated and tested change ideas, and the focus of these ideas varied considerably depending on the outcome area that the NSI were focused on. Attention to equity, however—particularly agency (student voice) and instruction that engages identity—was limited across NSI. Over time, some schools demonstrated improvement in CI practices. These improvements varied across NSI and may have been tied to shifts in NSI's approaches to the work.

Key enabling conditions—including team stability, principal support, planning time, meeting frequency, and school-level supports—were positively associated with stronger implementation. In terms of spread within a school or beyond, CI practices that are easiest to spread may be those that can be completed without conducting an inquiry cycle (e.g., root cause analysis). Finally, sustainability of practices varied. Even though nearly half of schools reported maintaining CI teams after grant funding ended and continuing to use CI approaches, schools within the same NSI differed considerably in sustaining practices, suggesting that school capacity and interest were critical drivers of sustainability.

Acknowledgments

This study was sponsored by the Gates Foundation, which created the Networks for School Improvement initiative to support school networks working to improve outcomes for all students, especially those furthest from opportunity, including students who are Black, Latino, or experiencing poverty. For more information, visit https://usprogram.gatesfoundation.org/.

We would like to recognize the members of the entire study team for their contributions to collecting, analyzing, reviewing, and making meaning of the data collected for this report. Along with AIR staff, this includes Shanette Porter and our partners at Gamse Partnership, MDRC, the University of Oregon, and Westat Insight. We would also like to thank the individuals who participated in interviews and surveys and who shared artifacts with our study teams.

AIR®
Advancing Evidence.
Improving Lives.

Abena Acheampong • Emily Agopian • Natalie Bills • Damon Blair • Tammie Causey • Connie Chandra • Yuliya Cheban • Grace Cole • Emily Collins • Edward Costa • Aimee Dang • Maria Dracopoli • Ryan C. Eisner • Matthew J. Farmer • Thomas Fink • Lawrence Friedman • Michael S. Garet • Keegan Giffels • Maggi Ibis • Lara Iqbal • Jasmine James • Kathleen T. Jones • Julie Jung • Shaheen Khan • Alex Kistner • Julie Kochanek • Yibing Li • Bob McMahon • Sara Mitchell • Sara Mitrano • Orrin Murray • Sarah Mae Olivar • Stephanie McCarty • Ivana Párraga • Sugey Paz • Ronald Pena • Nicole Sochaczevski • Laura B. Stein • Angela Su • Nina Wetoska • Julia Wilkinson • Emma Wilson

Gamse Partnership

Beth C. Gamse

mdrc
BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

Xavier Alemañy • Emma Alterman • Frederick Doolittle • Kayla Elliot • Carolyn Hill • Amanda Martin-Lawrence • Fernando Medina • Kianna Medina • Sophia Otasowie • Gustie Owens • Hanna Power • Shelley Rappaport • Lauren Scarola • Janey Woo

UNIVERSITY OF OREGON

David D. Liebowitz • Claire Zhang

Westat® insight

Kelsey Gray • Hollie Harsanyi • LaShawn Richburg-Hayes

Introduction

The use of networked continuous improvement (CI) in education has grown substantially during the past 15 years. After the Carnegie Foundation's efforts to define the approach and establish several use-cases in education, the Gates Foundation sought to scale-up networked CI through its Networks for School Improvement (NSI) initiative. The Gates Foundation invested in network-based CI from 2018 to 2025, awarding more than $300 million in 5-year grants to intermediary organizations that formed 34 NSI. The foundation designed these efforts to increase the proportion of Black and Latino students and students experiencing poverty who were on track for high school graduation and college.

The foundation sponsored an evaluation of the NSI initiative to provide much-needed evidence on the implementation and impact of networked CI. This rapid scale-up of networked CI provides a unique opportunity to understand how intermediaries develop and implement school networks, how networks of schools implement CI to achieve a common goal related to improving student outcomes, and the impact of these efforts.

The NSI initiative offers the chance to study an exceptionally large and diverse group of school improvement networks. Although there are studies of specific networks (Dee, 2024; Feygin et al., 2020), the summative evaluation is among the first studies to examine a large group of varied school improvement networks.[1] This report describes the implementation of CI at the school level and explores school conditions that may be related to implementation. Additional reports from the evaluation are available here.

The NSI Initiative

Each NSI consists of an intermediary organization leading a network of approximately 20 schools (ranging from fewer than 10 to more than 50 schools) and supporting teams of school staff in engaging in continuous improvement. The foundation awarded three cohorts of grants from 2018 to 2020. Each NSI focused on improving student outcomes in one or more of the following areas:

- The proportion of students who were on track for high school graduation and college enrollment in 8th grade (referred to throughout as "8th-grade on-track NSI"), 9th grade ("9th-grade on-track NSI"), or 11th and 12th grade ("college-ready on-track NSI").

[1] See also the 2024 interim summative evaluation reports and the 2025 issue of the Peabody Education Journal for complementary research on NSI.

- The proportion of 12th-grade students who completed the steps needed to enroll in college ("well-matched postsecondary enrollment [WMPS] NSI").

The NSI focused their CI activities on one of three "entry points" identified by the foundation: instructional (working to improve the quality of instruction within classrooms), early warning and response (working to create more supportive, connected school environments), and well-matched postsecondary enrollment (working to support postsecondary application, enrollment, and persistence). Entry points characterize how each NSI approached improving the particular student outcome the NSI was focused on. For example, an NSI that aimed to improve college-ready on-track outcomes might use an instructional entry point (by testing various shifts in pedagogic practice) or an early warning and response entry point (by testing various approaches to building adult–student relationships) to achieve that outcome.

The NSI Evaluation

The foundation sponsored an evaluation to build evidence on the NSI approach. The evaluation addresses the following three main research questions, each led by a different evaluation partner:

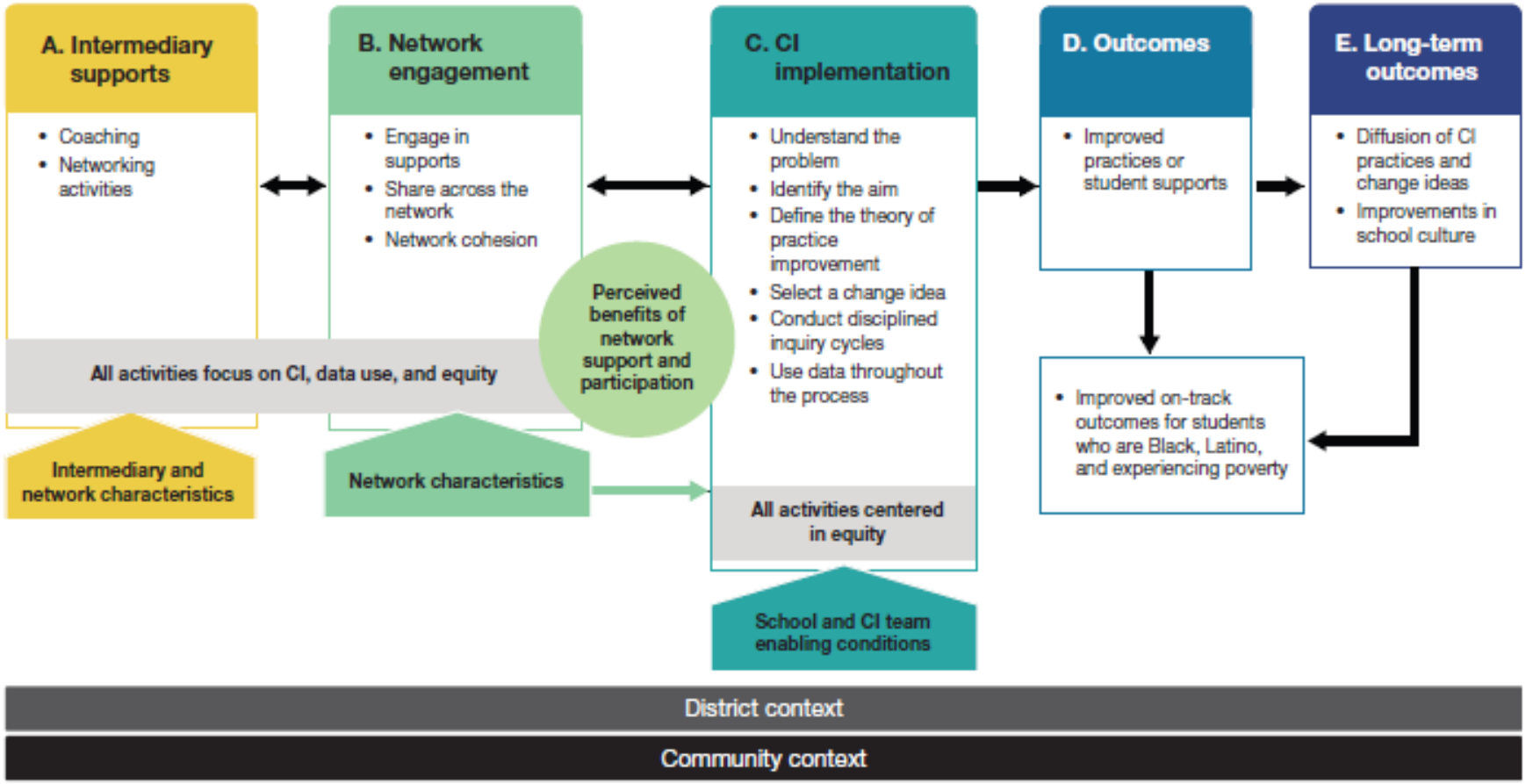
1. How do intermediaries design and implement their NSI? (RAND)
2. To what extent do participating schools implement CI activities? (American Institutes for Research)
3. What is the impact of the NSI on student outcomes? What aspects of the NSI approach are related to impacts on students? (Mathematica)

The results in this report are based on a sample of 25 NSI supported by the initiative.

The NSI Initiative's Conceptual Framework

The foundation outlined a broad structure for each NSI while providing flexibility for intermediaries to adapt their approach. The evaluation teams developed a conceptual framework to describe the key features of the NSI approach and guide the evaluation (Exhibit 1).

Exhibit 1. NSI Conceptual Framework



As illustrated in this framework, intermediaries brought together school CI teams – teams of educators and administrators – into networks. Intermediaries provided school CI teams with coaching, professional learning, resources and tools, and opportunities to collaborate across the network. School CI teams engaged in structured CI processes—such as root cause analysis and testing change ideas through inquiry cycles—to improve educator practices and student supports. The conceptual framework lists the six core features of CI the foundation expected schools to implement (Box C). Over time, the initiative aims to build capacity, strengthen school culture, improve student outcomes, and spread effective strategies within and beyond participating schools.

The analysis in this report focuses on Box C in Exhibit 1: How school CI teams engage in CI.

Focus of the Report

This report addresses the following research questions:

1. To what extent do schools implement disciplined inquiry cycles?
2. To what extent do the activities undertaken reflect the core parameters (see Box 1 below) and other evidence-based practices of CI?
3. What change ideas do schools select for testing and implementation as part of CI?
4. To what extent do CI teams explicitly focus on improving outcomes for Black students, Latino students, or students experiencing poverty?
5. Does the level of implementation of key CI features differ by other key factors, including entry point/outcome, cohort, grant year (e.g., change over time), or whether schools enter after the initial year of the grant?
6. What enabling conditions support schools' implementation of CI?
7. To what extent is the level of CI implementation associated with school-level adoption and diffusion of effective interventions, diffusion of CI practices, and changes in school climate?
8. To what extent do schools sustain CI after foundation funding ends, and what school-level characteristics are associated with sustainability?

BOX 1. CORE PARAMETERS OF CI

Root Cause Analysis. A root cause is an underlying reason for an educational challenge. Root cause analysis helps teams understand the systems that produce inequitable outcomes for Black students, Latino students, and students experiencing poverty within their local setting.

Aim Statement. An aim statement articulates the goal for an improvement effort. An aim statement should clearly specify how much, for whom, and by when.

Theory of Practice Improvement. A theory of practice improvement includes a set of hypotheses about how changes in certain practices could lead to improved student outcomes.

Disciplined Inquiry Cycles. Inquiry cycles are repeated, iterative tests of change. They are used to test interventions and collect and analyze data to see if changes represent an improvement.

CI Teams. To conduct the work, schools establish collaborative and diverse teams comprising people with time, expertise, experience, and the will to tackle the problem.

Data Use. CI teams use locally relevant and valued data from multiple sources, relevant research, and measurement as keys to improvement.

Key findings within each section are indicated with **bold** text. For Research Questions 1-6, the findings build upon and update interim findings included in the 2024 report.

The initiative mainly took place from the 2018–19 through the 2024–25 school years. However, because of the disruptions caused by the COVID-19 pandemic that emerged in the spring of the 2019–20 school year, and significantly impacted the school years that followed, we focus much of this report (research questions [RQs] 1–4) on implementation in Grant Year 5 (2022–23 for cohort 1, 2023–24 for cohort 1B/2,[2] and 2024–25 for cohort 3). RQs 5–7 generally focus on implementation across all grant years for which we have data, to examine relationships; however, we focus analyses of change over time on Grant Years 3 and 5 only, given the complicated context of the early years of the initiative. RQ 8 focuses on implementation in the first year after grant funding has ended. See Box 2 for additional details on the study design.

The literature on CI suggests that documentation of CI processes is the key to capturing what is learned; maintaining institutional knowledge; and sharing results within each school, with other schools working with an NSI and beyond the NSI community (Russell et al., 2019; Taylor et al., 2014). Given the evidence supporting the importance of documentation for effective CI, CI teams in NSI schools were expected to document their work, and many NSI developed systems to support this documentation. CI teams typically documented their work by capturing meeting minutes or completing forms or templates associated with specific core components of CI work (e.g., fishbone diagrams for root cause analysis, structured templates for disciplined inquiry cycles). See Box 3 for more information on how NSI supported CI teams with documentation and knowledge management.

"We have told our teams that the expectation is that you do document what is happening somewhere, but it looks different across all of our schools. Some schools used the document that we shared with them when we kicked off or rolled out CI in November for this year, and that is the source of where they kept their information. Some schools, in their running agendas is where they documented their progress. Some schools, in our coaching meetings, in the coaching agendas with the AP is where you would see the documentation of their CI progress."

-Cohort 2 NSI lead

[2] The Gates Foundation awarded funding to cohort 1B and cohort 2 on a similar timeline. For the purposes of our data collection, analysis, and findings, we combine these two cohorts and refer to them as "cohort 1B/2". While the Gates Foundation may have initially separated these networks into two cohorts for a specific reason, we treat them as one in this report.

BOX 2. STUDY DESIGN

What was the focus of our study? The evaluation aims to understand how participating schools implemented CI in relation to the core parameters of CI and factors associated with implementation.

What data were collected?

- **CI artifacts.** We asked representatives from each NSI to share relevant artifacts (e.g., documents) generated by their networks' CI teams, including (but not limited to) root cause analyses, meeting notes and agendas, and descriptions of the change ideas they tested.
- **NSI school leader surveys.** We invited a leader from each NSI school to complete an online survey about school context (e.g., available teacher planning time) and work being conducted to improve student learning.
- **Intermediary interviews.** Intermediary staff (such as CI coaches who interacted with school teams) participated in semistructured, virtual interviews. Before the interviews, a representative from each intermediary filled out a form with closed-ended questions about their NSI's approach to CI.
- **Climate surveys.** We examined data from existing climate surveys administered to teachers in selected districts to examine the relationship between school climate and CI implementation.
- **Case study interviews.** The number of schools included in case studies varied by year. There were 19 schools across seven NSI in 2020–21, 10 schools across five NSI in 2021–22 and 2022–23, and eight schools across four NSI in 2023–24 and 2024–25. For each, one-to-three staff participated in semistructured, virtual interviews about supports for teaching and learning and aspects of CI. We included some of the same NSI and schools in the case studies from 2021–22 through 2024–25 to track changes over time.
- **Sustainability surveys.** We invited the principal from schools in 13 NSI to complete an online survey the year after the final year of foundation funding.

Which schools and time points were included in our sample? The study sample includes the schools associated with 25 NSI. We collected data from all cohorts in 2020–21. Beginning in 2021–22, we collected data for NSI in Grant Year 3 and Grant Year 5 only.[3] The table below shows the number of NSI included in the evaluation and the timing of the grants, by cohort. In some NSI, all schools began participating in the first year of the grant. In other NSI, some schools began participating in later years.

Number of NSI and Grant Year by Cohort

Cohort	*N* of NSI	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
1	5	1	2	3	4	5		
1B/2	10		1	2	3	4	5	
3	10			1	2	3	4	5

Note. Data for the years shaded in green serve as the focus of this report.

How were data analyzed and presented?

- To describe CI implementation, we computed averages of the NSI overall and by outcome area, for Grant Year 5 (RQs 1–4).
- To examine factors related to CI implementation, we estimated multilevel linear regression models, with years nested in schools nested within NSI. The sample, variable definitions, and model specifications are described in Appendix E (RQs 5–7).
- To examine variation in the extent to which CI was sustained after foundation funding, we estimated a regression model (RQ 8).

Note. See accompanying Technical Appendices document for additional details related to our study design. Instruments are available upon request.

BOX 3. NSI EXPECTATIONS FOR HOW CI TEAMS SHOULD DOCUMENT THEIR CI WORK

During interviews with each intermediary, we asked NSI leads about the knowledge management systems that CI teams used to store documents related to their CI work. We also asked each NSI to describe expectations about how CI teams should document their work and whether those expectations had changed over the duration of Gates Foundation funding. Eleven of the 20 NSI interviewed reported strong expectations for documentation by Grant Year 5. Eight of the 11 NSI had consistently strong expectations for documentation over time. Only three of the 20 NSI reported minimal or no expectations for documentation. We defined the strength of NSI expectations as follows:

Strong expectations	NSI expects CI teams to document their CI work using NSI-developed or NSI-provided templates.
Moderate expectations	The NSI provides teams with templates that CI teams can use to document their CI work but does not expect all teams to use these templates.
Minimal or no expectations	The NSI does not provide CI teams with templates or tools to document their CI work.

Source. Intermediary interviews from 2021–22 and 2023–24 (cohort 1B/2) and from 2022–23 and 2024–25 (cohort 3). Cohort 1 is excluded from these analyses.

[3] Evaluation resources permitted us to include only 25 of the 31 NSI in our study and to primarily collect data from Grant Years 3 and 5 for these NSI. The 25 NSI selected are representative of the full set in terms of cohort and outcome area.

Our team relied on the documents generated by CI teams in the course of their work for many of the analyses of CI presented in this report.[4] In the report, we refer to these documents as "artifacts." We relied on artifacts for a few main reasons. First, by collecting artifacts from more than 600 schools affiliated with the 25 NSI in the study, we can examine variation in CI practices between NSI—and among schools working with the same NSI—because the sample is so large in a way that would not be possible using data from a smaller sample (e.g., case studies). This method contrasts with much of the available literature on CI in schools, which is based primarily on case studies.[5] Second, artifacts provide concrete evidence of the nature of the CI work, as documented by the NSI and school teams, with much more detail than could practically be collected through surveys or interviews with participants.

Although artifacts offer several advantages in describing CI work underway, interpreting them presents various challenges (Box 4). In particular, schools may have done CI work without documenting every related process, activity, or decision. Although artifacts help us understand and describe the content, timing, and frequency of CI work, they do not typically convey the beliefs and mindsets of the individuals involved or how those beliefs and mindsets change over time.

BOX 4. INTERPRETING EVIDENCE FROM ARTIFACTS

We coded artifacts for the presence of documented evidence that specific CI activities or processes had occurred, recognizing that documenting work for the purposes of knowledge sharing is one expectation of well-implemented CI. If artifacts do *not* contain such evidence, we do not know definitively that a process or activity did not occur; we only know the NSI did not share artifacts containing evidence that the process or activity occurred. Consequently, reported values (based on artifact data) may underestimate the true prevalence of specific CI processes and activities.

We often present results for the average level of implementation across schools working with all the NSI for which we have data. For most aspects of implementation, we present the average level of implementation for the four outcome areas separately since this was a key organizing principle for the initiative. In addition, the impact study led by Mathematica reports findings by outcome area.

[4] We supplemented artifacts with data from case studies, which were feasible in only a small subset of schools.
[5] For a review of the literature on CI, see Garet et al. (2021).

RQ 1. To What Extent Do Schools Implement Disciplined Inquiry Cycles?

All NSI committed to engaging in disciplined inquiry cycles as part of their CI efforts. Inquiry cycles help distinguish CI—as articulated by Anthony S. Bryk and others at the Carnegie Foundation for the Advancement of Teaching—from other related evaluation or improvement activities. As defined by Bryk et al., CI is anchored in "disciplined inquiry" of a specific, focused change idea; teams "engage in rapid cycles of plan, do, study, act (PDSA) to learn fast, fail fast, and improve quickly" (Carnegie Foundation, 2025, para. 5).

Interviews with intermediaries indicate that most NSI categorized their approach to engaging in CI as supporting school teams to implement iterative cycles, such as the four-phase PDSA model.[6] However, some NSI engaged in other approaches to CI to improve outcomes for students. For example, some NSI engaged in *annual goal setting* and frequent monitoring of progress toward the goal to motivate action. This involved periodically reviewing data without explicitly testing change ideas. Others engaged in regular use of *early warning* data to proactively identify students in need of specific supports. This also involved frequently reviewing data but not necessarily testing change ideas. Other NSI used a combination of these approaches. Intermediary interview data indicated that all 8th-grade on-track and college-ready on-track NSI implemented iterative cycles. There was more variation in how 9th-grade on-track and WMPS NSI categorized their approach to CI.

For simplicity, we refer to all of these as cycles in our analyses. See Box 5 for examples that illustrate the three approaches used by NSI schools.

To learn how the implementation of inquiry cycles varied across CI teams, we examined the number of cycles initiated by CI teams and the number and percentage of cycles completed by CI teams.[7] If, as Bryk et al. (2015) assert, meaningful improvement requires a quick iterative

[6] The Results-Oriented Cycles of Inquiry (ROCI) is another common model for inquiry cycle work.

[7] As noted in our interim report, it can be challenging to count the number of cycles conducted by a team. For example, a team might test a change idea in several classrooms. Each classroom test could be considered a separate cycle, or the tests in multiple classrooms might be considered a single cycle, since they are focused on the same change idea over the same period. In addition, in many cases, the inquiry cycle templates NSI provided to schools broke the year into "action periods," with each action period typically covering a quarter of the school year. These templates might lead teams to consider all work conducted during an action period as a single cycle, even if there were multiple iterations during the action period. The artifacts we received often explicitly indicated cycle numbers. When cycle numbers appeared, we used them to distinguish cycles. When explicit cycle numbers did not appear, we used other information in the artifacts, such as dates, to distinguish cycles. (See Appendix D for more information on how cycles were coded.)

inquiry process, then the number of cycles conducted could be interpreted as one indicator of the quality of CI implementation.

BOX 5. EXAMPLES OF APPROACHES TO ENGAGING IN CI

Iterative cycles. In one cohort 1B NSI, CI teams initiated cycles by first surveying school staff to identify school-specific challenges and their root causes. The teams then designed interventions based on the identified challenges and root causes. For example, one team tested an intervention that incentivized students to reduce their phone usage in order to improve student attendance and reduce course failure rates. CI teams' interventions ranged from 30 days to a semester or a full school year. After the interventions were implemented, teams compared results during NSI-wide convenings and determined next steps.

Goal-setting. In one cohort 1 NSI, CI teams used student survey data to identify postsecondary trends and decided to implement strategies focused on achieving 80% financial aid application among seniors. To encourage FAFSA[8] completion, they provided each student who submitted a FAFSA application with a free meal from a food truck. CI team members tracked FAFSA completion rates, disaggregated by subgroups, and focused follow-up communication on student groups who were completing FAFSA at a slower rate than other student groups.

Early warning. In one cohort 3 NSI, CI teams began by systematically gathering and reviewing student data, including previous grade point average (GPA), course grades in core subjects, and attendance rates. Teams used an algorithm to predict each student's likelihood of achieving a target GPA, which enabled the team to tier students and proactively plan supports for those most in need. On a weekly basis, the team focused on a subset of students within a specific GPA band (such as 75–79.9), pulling their grades, identifying subjects and assignments requiring attention, and collaborating with advisors and teachers to develop individualized plans for improvement; progress was monitored weekly, and interventions were adjusted as needed. One-on-one check-ins served as a baseline intervention, and the team refined both individual and broader support strategies based on ongoing data.

Source. Intermediary interviews from 2022–23 (cohort 1), 2023–24 (cohort 1B/2), and 2024–25 (cohort 3).

To quantify the number of cycles initiated by each school team, we defined an *initiated cycle* as one with documentation of activity related to at least one phase of the inquiry cycle process—Plan, Do, Study, or Act—and a *completed cycle* as a cycle with evidence of activity related to all four phases of the process. See Box 6 for information on how we coded for evidence of each phase of inquiry cycle work.

[8] Refers to the Free Application for Federal Student Aid form for federal student aid.

BOX 6. CODING FOR EVIDENCE OF PLAN, DO, STUDY, AND ACT PHASES

We coded activities based on the four-phase PDSA cycle and linked artifacts to phases based on the nature of activities reflected in the artifacts. We defined evidence of the four inquiry cycle phases as follows:

Plan. Any evidence of selecting a change idea and developing a plan that determines how it will be tested, for example, notes from a CI team meeting about what actions each team member will take.

Do. Any evidence of implementing the change idea and collecting relevant data, for example, implementation logs from CI team members documenting their actions.

Study. Any evidence of assessing the results based on the collected data, for example, data tracking logs.

Act. Any evidence of using the results to determine whether to adapt, abandon, or adopt the change idea, for example.

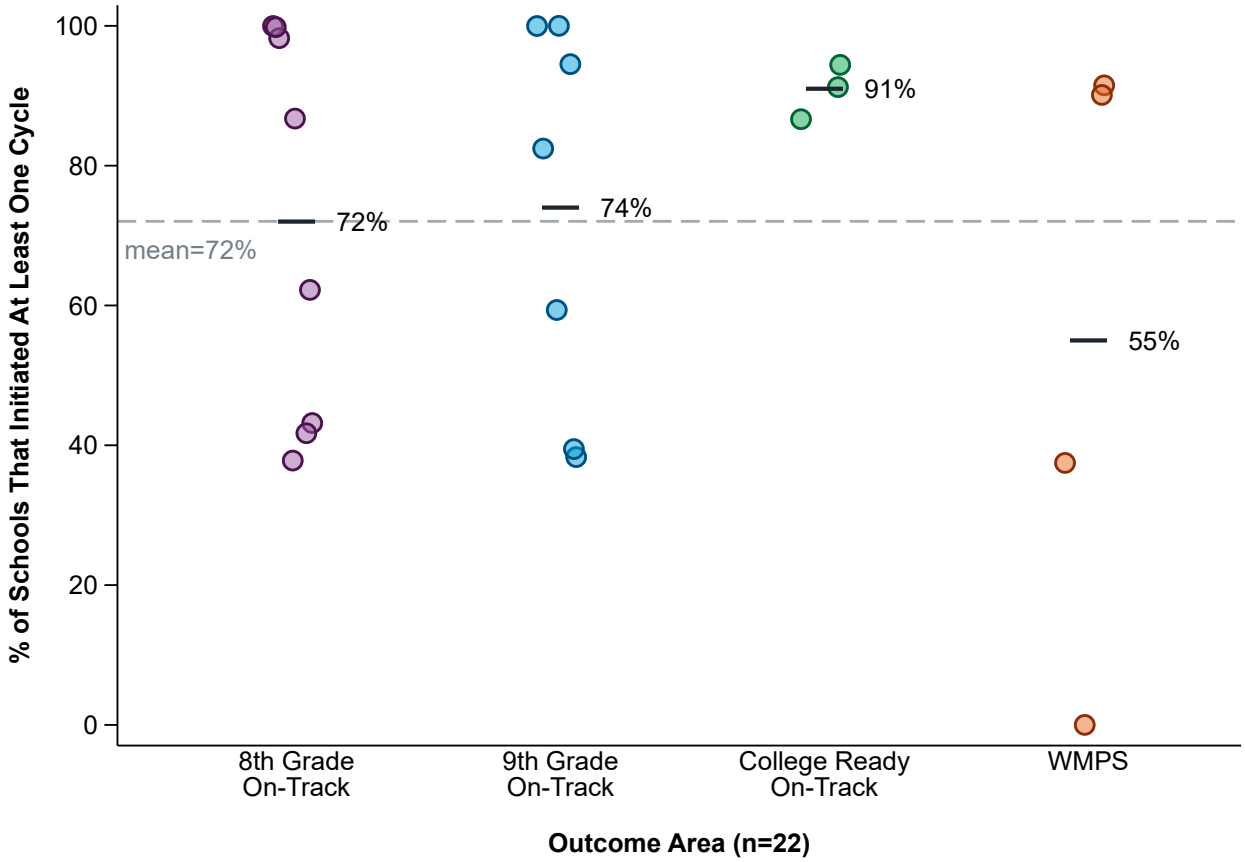
The coding focused on activities described in the documentation of inquiry cycle processes rather than on the specific terms used by CI teams. But in describing the results, we use the PDSA terminology for simplicity and because it was encouraged by the initiative.

Exhibit 2 displays the percentage of schools that initiated at least one inquiry cycle in Grant Year 5. Each dot represents one NSI. The exhibit also shows the average percentage for the NSI in each outcome area, as well as the overall average across all NSI.[9]

Based on artifact data collected, **in the majority of NSI, most schools initiated at least one inquiry cycle in Grant Year 5**. In some NSI, nearly all schools initiated at least one cycle, whereas some NSI (7) had evidence that fewer than half of their schools initiated at least one cycle perhaps because some schools did not engage in inquiry cycles or because they did not provide artifacts showing evidence of engaging in inquiry cycles.

[9] In one NSI, some schools focused on 8th-grade on-track and some on 9th-grade on-track. For all analyses, we classified this NSI as "8th-grade on-track," which was the focus for a majority of its schools.

Exhibit 2. Percentage of Schools That Initiated At least One Cycle, by NSI and Outcome Area, Grant Year 5



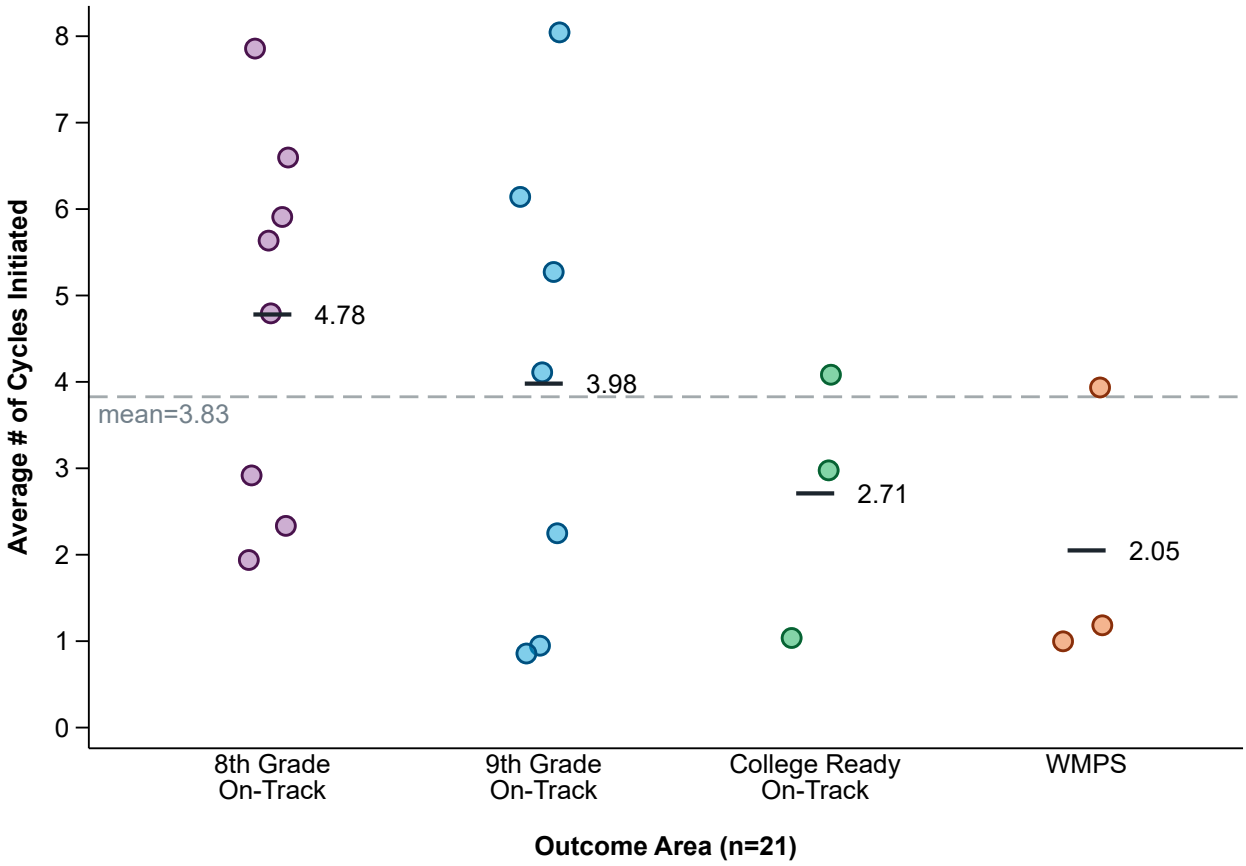
Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 22; this excludes three NSI that did not provide data on cycles, and we could not determine if none were initiated or if the data were missing. The number of schools equals 481. The percentage for an NSI is computed as the equally weighted percentage of schools that initiated at least one cycle within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

As shown in Exhibits 3 and 4, schools that engaged in inquiry cycles initiated ~3.8 cycles per year and completed ~2.4 cycles per year. These results are similar to prior research on inquiry cycles.[10]

[10] For example, Garet et al., in a 2021 research synthesis, found an average of about two cycles per year for schools engaging in CI, although the studies reviewed included a far smaller number of schools. These results align with results from other studies of CI, which show that despite growing interest, implementation of CI in schools remains challenging (Gallagher et al., 2022; Kinlaw et al., 2020).

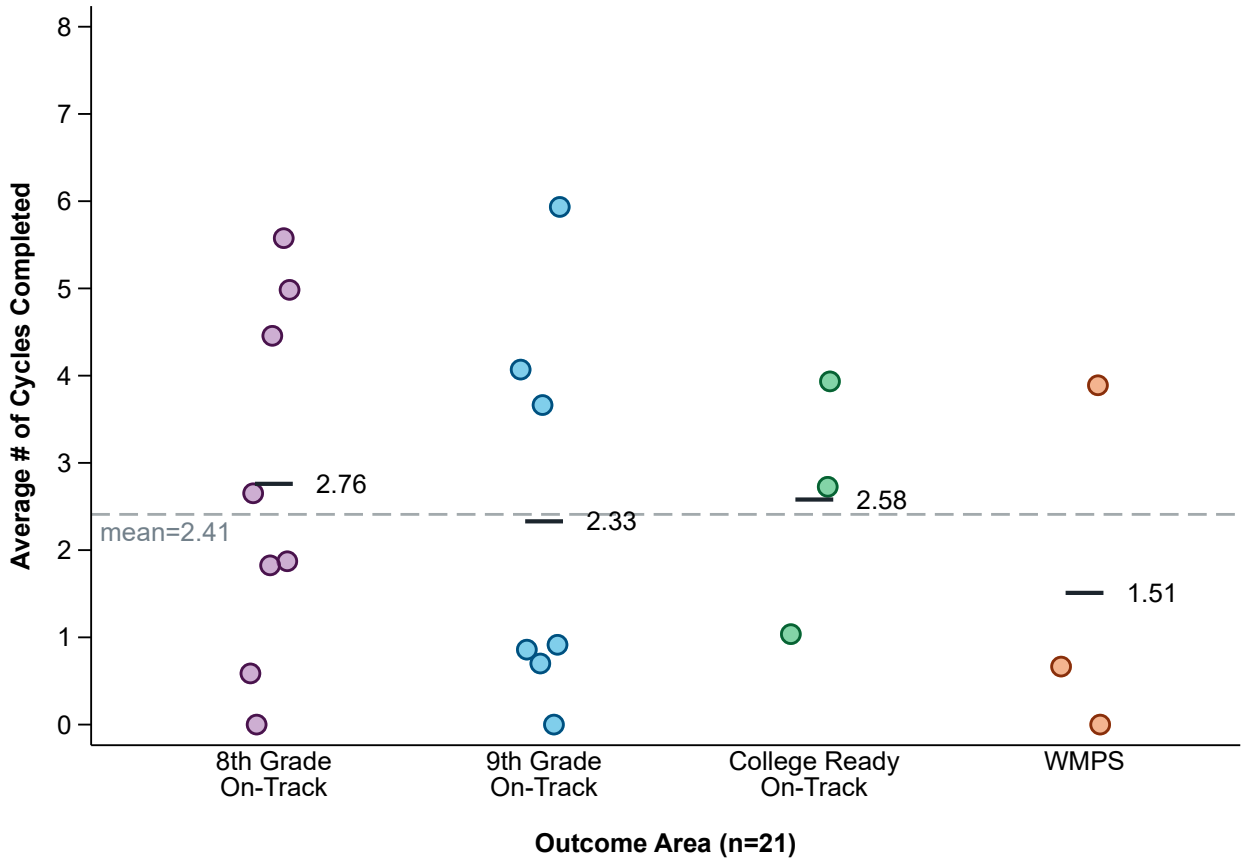
There are substantial **differences across NSI in the number of cycles initiated and completed**. The number initiated ranged across NSI from one to eight (Exhibit 3) and the number completed from zero to six (Exhibit 4).

Exhibit 3. Average Number of Cycles Initiated, by NSI Outcome Area, Grant Year 5



Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 21; this excludes four NSI with no schools that engaged in cycles or that did not provide cycle-level data. The number of schools equals 317. Analyses are based on cycle-level data. The analysis includes all schools with evidence of at least one cycle. The average number of cycles initiated in a school is calculated as the equally weighted mean of the cycles initiated by each CI team within the school. Schools with more than 10 cycles are truncated to 10. The average number of cycles for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

Exhibit 4. Average Number of Cycles Completed, by NSI and Outcome Area, Grant Year 5



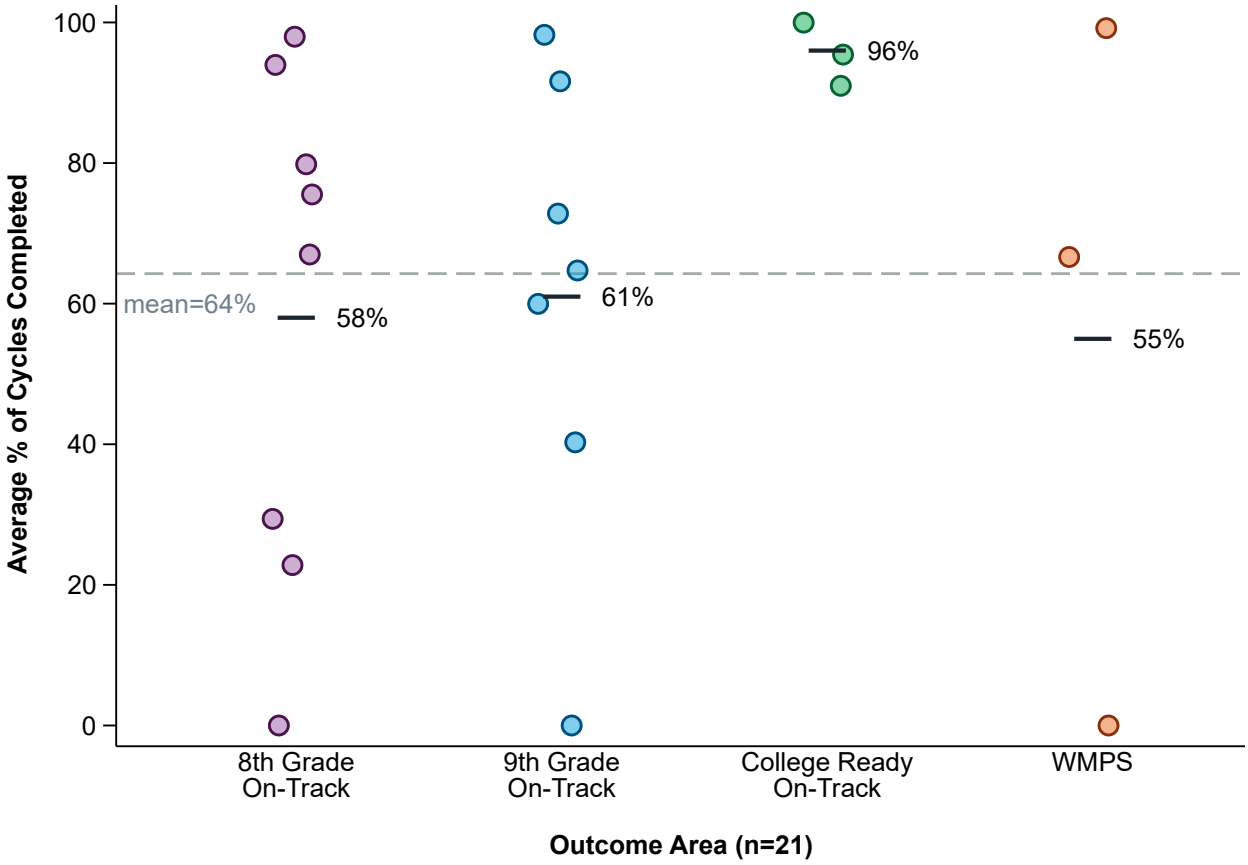
Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 21; this excludes four NSI with no schools that engaged in cycles. Analyses are based on cycle-level data. The number of schools equals 317. The analysis includes all schools with evidence of at least one cycle. The average number of cycles completed in a school is calculated as the equally weighted mean of the cycles completed by each CI team within the school. Schools with more than 10 cycles are truncated to 10. The average number of cycles for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

Although the schools within many NSI engaged in inquiry cycles, they did not necessarily complete each cycle.[11] On average, across all NSI, schools completed approximately two thirds (64%) of the cycles they initiated (Exhibit 5). Although schools within 8th-grade on-track NSI initiated the most cycles on average (4.78 cycles), these schools had low completion rates (58%)

[11] As discussed in the interim report, we do not have clear evidence of why some cycles were incomplete. Incomplete cycles could arise in artifact data if teams completed phases without documenting them or if artifacts were generated but not shared with us. Alternatively, cycles could have been launched and not completed, or artifacts could span multiple cycles, making it difficult to assess which phases occurred and when. For example, a CI team may have planned its second cycle concurrently with the Act phase of its first cycle, making it appear from artifacts that one of those phases did not occur. Some phases may also have been easier for teams to document.

compared with schools within other NSI. In contrast, schools within college-ready on-track NSI had higher completion rates; they initiated fewer cycles (2.71 cycles) than did schools within 8th- or 9th-grade on-track NSI, but they completed nearly all initiated cycles (96%).

Exhibit 5. Average Percentage of Cycles Completed, by NSI and Outcome Area, Grant Year 5

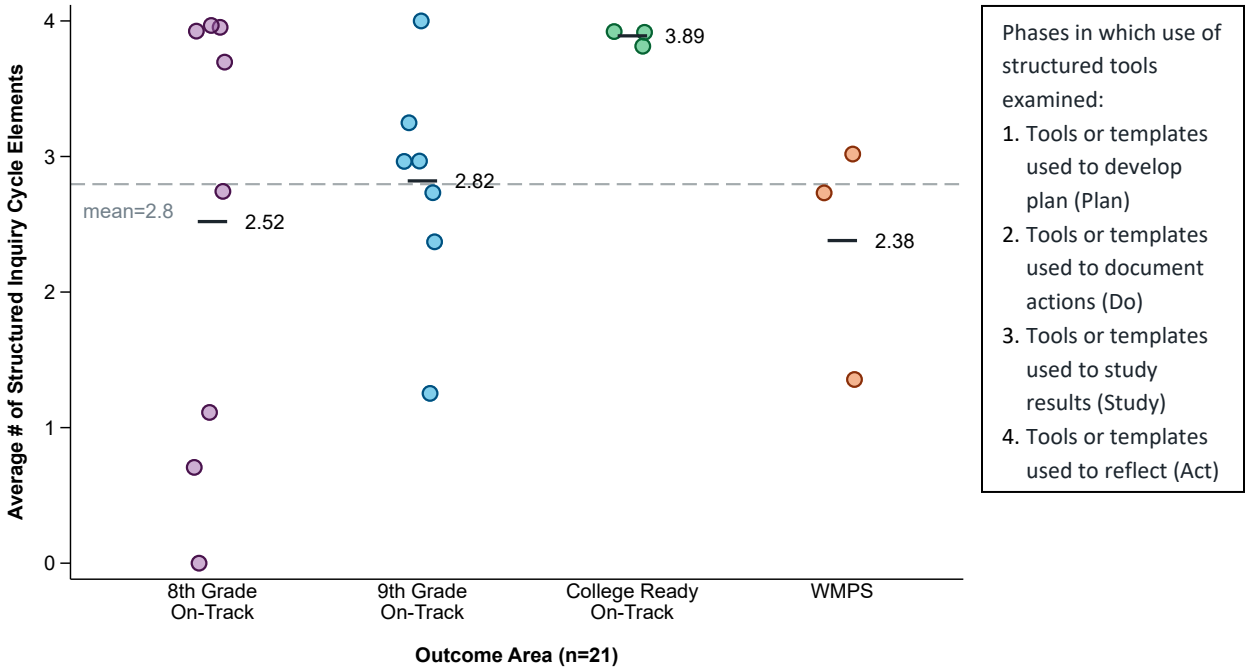


Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 21; this excludes four NSI with no schools that engaged in cycles. The number of schools equals 317. Analyses are based on cycle-level data. The analysis includes all schools with evidence of at least one cycle. The average percentage of cycles completed in a school is calculated as the equally weighted quotient of the number of cycles initiated divided by the number of cycles completed by each CI team within the school. Schools with more than 10 cycles are truncated to 10. The average number of cycles for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

NSI also differed in the extent to which schools used structured tools or templates to guide inquiry cycles rather than informal or unstructured approaches. We measured whether schools used structured tools in each of the four phases of cycle work (P, D, S, and A). Of the schools that initiated at least one cycle, the average number of phases in which they used structured tools was 2.8, although it ranged from zero to four across NSI (Exhibit 6). The box embedded in

Exhibit 6 describes the four phases in which we examined the use of structured tools, ordered from most to least prevalent.

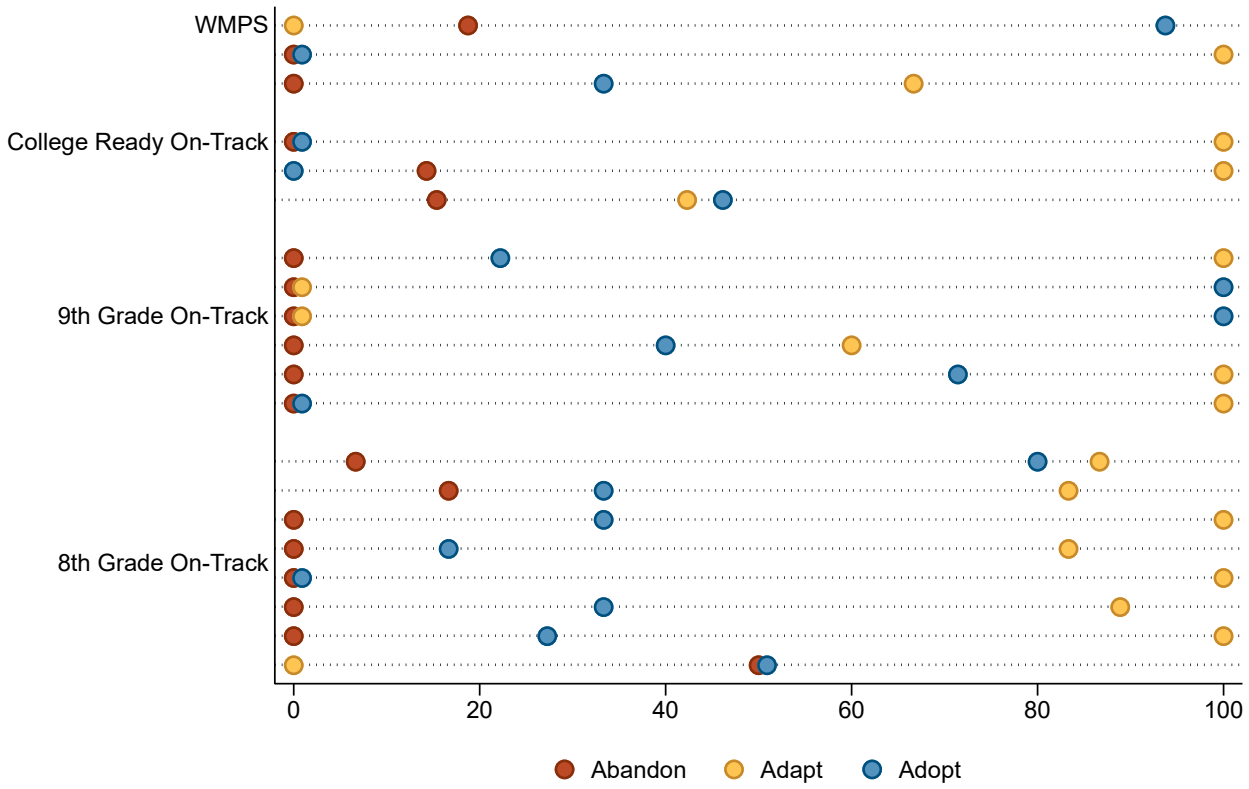
Exhibit 6. Average Number of PDSA Phases in Which Schools Used Structured Tools, by NSI and Outcome Area, Grant Year 5



Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 21; this excludes four NSI with no schools that engaged in cycles. The number of schools equals 317. Analyses are based on cycle-level data. The analysis includes all schools with evidence of at least one cycle. The average number of structured inquiry cycle elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

The decision on whether to adopt, adapt, or abandon change ideas during cycles varied (Exhibit 7). In Grant Year 5, among schools that reached the act phase for at least one PDSA cycle, deciding to adapt the change idea being tested was more common than deciding to adopt or abandon the idea**.** Most schools (71%) chose to adapt their change idea at the end of at least one cycle, while less than half (39%) chose to adopt their change idea at the end of at least one cycle. In five NSI, however, it was more common to adopt a change idea than to adapt the idea. **Abandoning the change idea altogether was relatively rare, with only 6% of schools abandoning a change idea at the end of at least one cycle.** This suggests that nearly all schools chose promising change ideas worth at least adapting and trying again.

Exhibit 7. Percentage of Schools That Chose to Abandon, Adapt, or Adopt a Change Idea at the End of at Least One Cycle, by NSI, Grant Year 5



Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 20; this excludes five NSI with no schools that engaged in act cycles. The number of schools equals 167. Analyses are based on cycle-level data. The analysis includes all schools with evidence of at least one act cycle. The percentage for an NSI is computed as the equally weighted percentage of schools that chose to abandon, adapt, or adopt a change idea within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

RQ 2. To What Extent Do the Activities Undertaken Reflect the Core Parameters and Other Evidence-Based Practices of CI?

As part of the initiative, school teams participating in NSI were expected to engage in activities that reflect the six core parameters of CI (see Box 1), as defined by the Gates Foundation and informed by the Carnegie Foundation for the Advancement of Teaching.

To understand the nature of CI at the school level, we examined whether schools engaged in each of these six core parameters as documented in artifacts. For each parameter, we defined specific elements that would indicate the presence and quality of related activities and

measured the extent to which the artifacts for each school showed evidence of the possible elements. For each core parameter, the elements examined are listed in a text box from most to least prevalent.

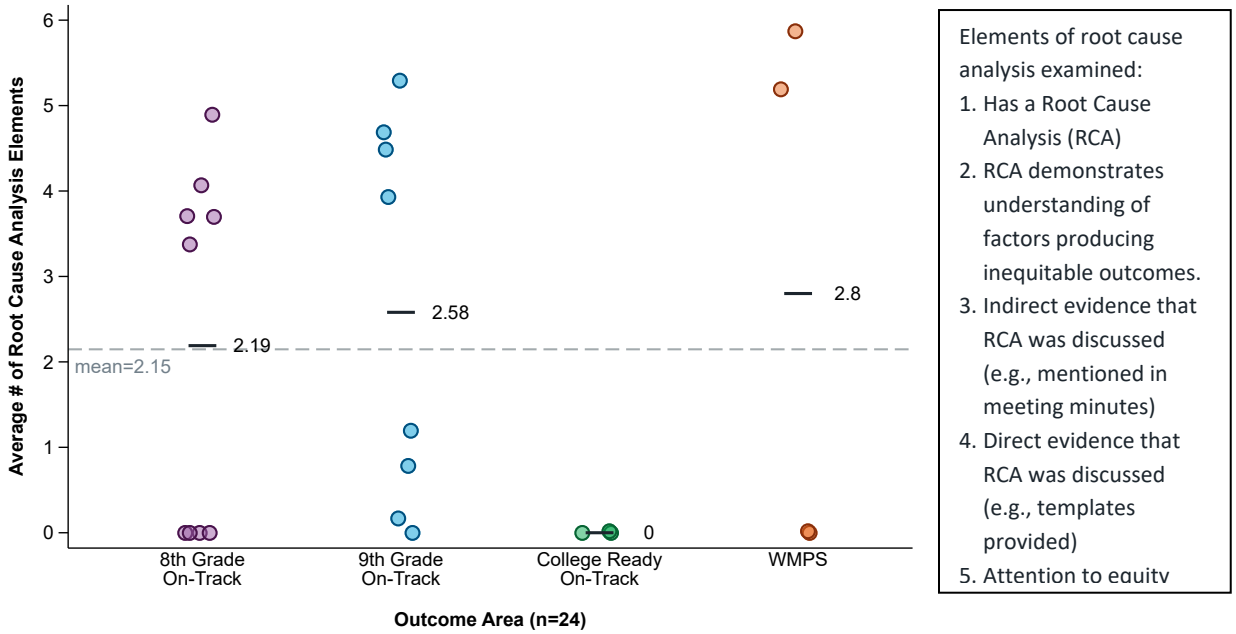
Root Cause Analysis

Typically, CI work begins by identifying some of the root causes of the performance problem that is the focus of improvement. Once the root cause has been identified, team members seek potential change ideas to test. A root cause analysis process is designed to help teams understand what underlies the causes of inequitable outcomes, instead of jumping straight to solutions that may not address the underlying issues. Such analyses may be conducted either by individual schools or collectively by schools within an NSI. The latter approach allows schools to consider conditions shared across schools, collaborate on interpreting information from the root cause analysis, and leverage differences to help understand causes.

We reviewed artifacts for evidence that schools conducted a root cause analysis in Grant Year 5 or referred to a root cause analysis conducted in previous years. Schools whose artifacts did not include evidence of root cause analysis may have conducted a root cause analysis in a previous year but may not have explicitly referred to it in the current year, or they may not have ever conducted a root cause analysis.

On average, across the initiative, schools showed evidence of attention to two of the six elements of root cause analysis in Grant Year 5, but the number ranged from none to all six across NSI (Exhibit 8). The box embedded in the figure describes the specific elements, evident in artifacts, related to root cause analysis, ordered from most to least prevalent.

Exhibit 8. Average Number of Root Cause Analysis Elements, by NSI and Outcome Area, Grant Year 5



Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not provide artifact data in Grant Year 5. The number of schools equals 502. The average number of root cause analysis elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

See Box 7 for examples of case study schools that did and did not conduct a root cause analysis. Overall, schools in nearly all NSI paid at least some attention to root cause analysis—even in Grant Year 5—but artifacts and case study data suggest room to increase the depth and quality of root-cause-analysis–related activities completed by CI teams.

BOX 7. ROOT CAUSE ANALYSIS IN CASE STUDY SCHOOLS

Overall, evidence from case studies suggests that root cause analysis was not a priority for CI teams in later grant years. Most CI teams did not conduct new root cause analyses in the most recent year or explicitly revisit root cause analyses from previous years.

One CI team that conducted a root cause analysis surveyed students to determine what factors were preventing students from succeeding in their math class. The survey revealed that students were not comfortable sharing in class. In a follow-up survey, the team asked students whether they felt more uncomfortable sharing with a partner or with the whole class. Based on students' feedback that they were most uncomfortable sharing with the whole class, the team brainstormed change ideas focused on having students become more comfortable speaking in class by incorporating peer-to-peer work before whole-class sharing.

In another NSI, the CI team did not conduct a root cause analysis to determine the problem focus or to select a change idea. Instead, the team first settled on a change idea and then used a fishbone diagram to organize seven factors that team members hypothesized might hinder the success of the change idea. The team did not appear to examine the seven factors further or use the fishbone diagram to help select or prioritize change ideas for subsequent inquiry cycles.

Source. School case studies from 2022–23.

Aim Statement

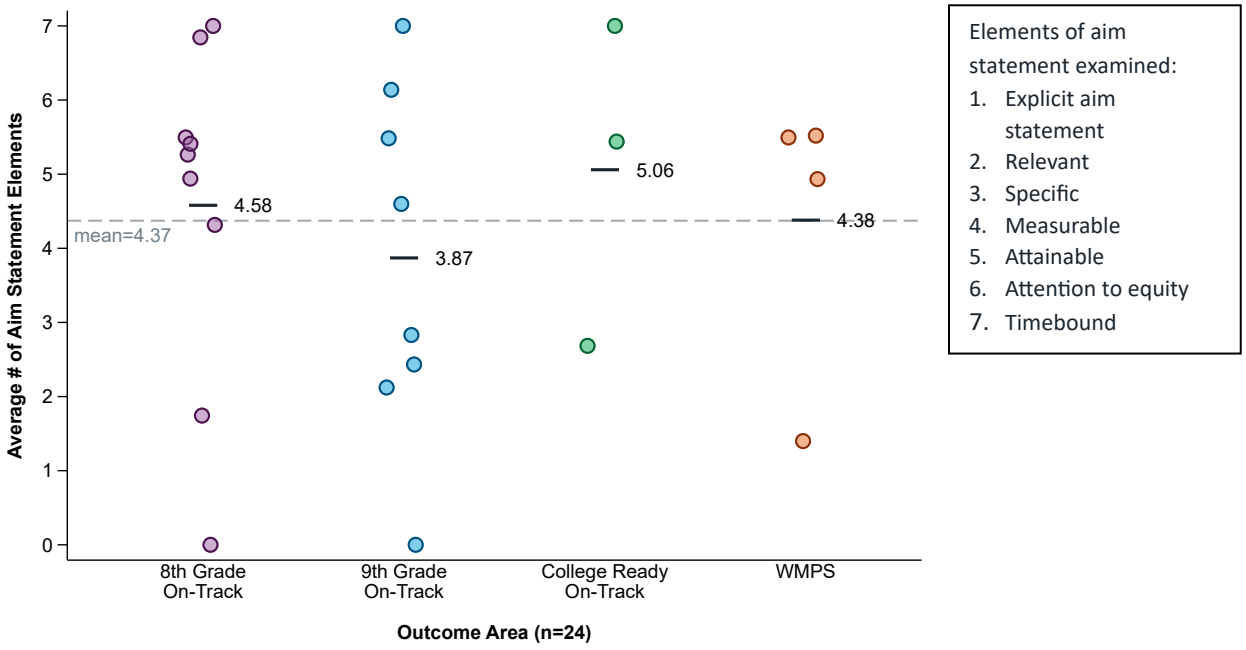
A clear and specific aim statement articulates a team's desired outcomes. For participating schools, an aim statement is expected to include a specific numerical target based on one of the four Gates Foundation's outcome areas. For example, for the 8th-grade on-track NSI outcome area, an aim statement may read as follows: "By June 2025, 60 percent of eighth graders will be proficient or above in algebra." Strong aim statements are specific, measurable, attainable, relevant, and timebound—the five characteristics of "SMART" goals.

> *"In general, our schools all have an academic proficiency aim. They all have some aim that generally supports their multilingual learners. And then everybody's got some SEL or relationship-type aim, school belonging and connectedness, and/or discipline. And so they all have something like that. And then they've identified change ideas that work towards those. Sometimes it's one change idea that works towards multiple aims, but that's generally where they've focused."*
>
> *-Cohort 2 NSI lead*

Artifacts collected in Grant Year 5 showed that across all outcome areas, **schools within nearly all NSI showed evidence of attention to at least some elements related to developing an aim statement. On average, schools implemented approximately two thirds (4.37) of the seven**

elements examined (Exhibit 9). The box embedded in the figure describes the specific elements, evident in artifacts, related to developing an aim statement, ordered from most to least prevalent. Schools within college-ready on-track NSI showed evidence of attention to the most elements related to developing an aim statement (5.06 of 7 elements, on average). In contrast, schools within 9th-grade on-track NSI showed evidence of attention to the fewest elements related to developing an aim statement (3.87 of 7 elements, on average). Even though an explicit aim statement is viewed as an important way to focus CI work, and schools across most NSI developed explicit aim statements, most aim statements lacked one or more key characteristics.

Exhibit 9. Average Number of Aim Statement Elements, by NSI and Outcome Area, Grant Year 5



Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not provide artifact data in Grant Year 5. The number of schools equals 502. The average number of aim statement elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

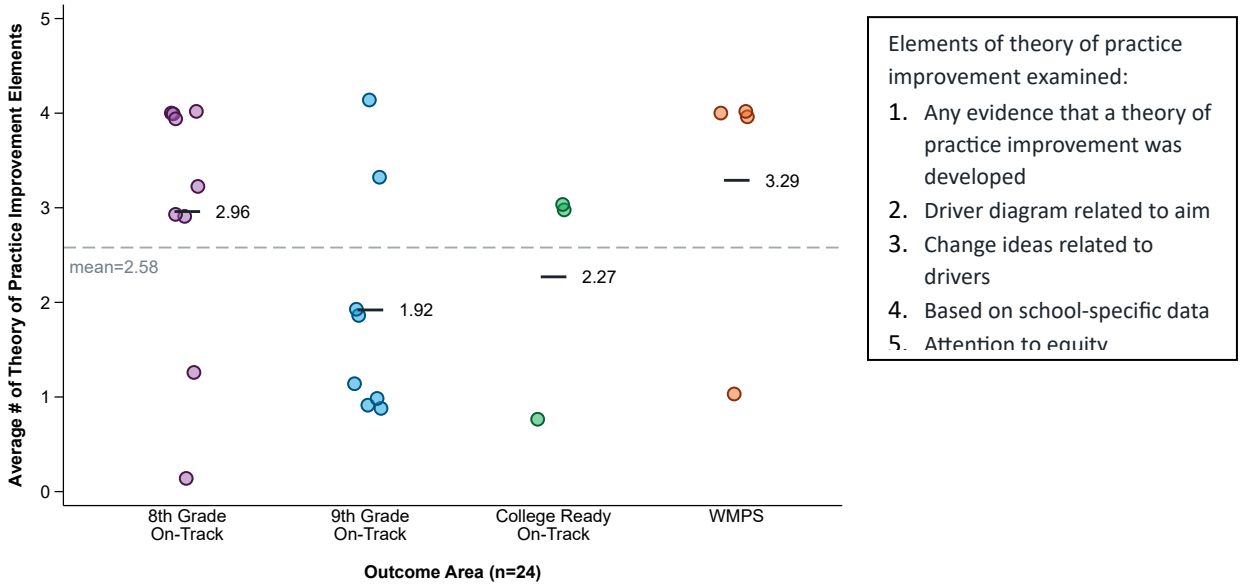
Theory of Practice Improvement

A theory of practice improvement is a hypothesis, ideally informed by a root cause analysis, about how and why adopting a particular change idea will help address the problem and achieve a desired aim. CI teams often use driver diagrams, or similar visual tools, to illustrate the theory of practice improvement in a way that team members can readily discuss and agree

on. Developing a driver diagram to visually represent a team's theory of practice improvement—where the identified drivers clearly relate to the team's aim—can help a team focus on change ideas with greater potential to achieve the desired aim.

Similar to findings related to the aim statement, artifacts collected showed that across all outcome areas, **schools within nearly all NSI showed evidence of attention to at least some of the elements related to developing a theory of practice improvement as part of their CI work. On average, schools showed evidence of attention to approximately half (2.58) of the five elements examined**, but the number ranged from zero to four across NSI (Exhibit 10). The box embedded in the figure describes the specific elements, evident in artifacts, related to developing a theory of practice improvement, ordered from most to least prevalent.

Exhibit 10. Average Number of Theory of Practice Improvement Elements, by NSI and Outcome Area, Grant Year 5



Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not provide artifact data in Grant Year 5. The number of schools equals 502. The average number of theory of practice improvement elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

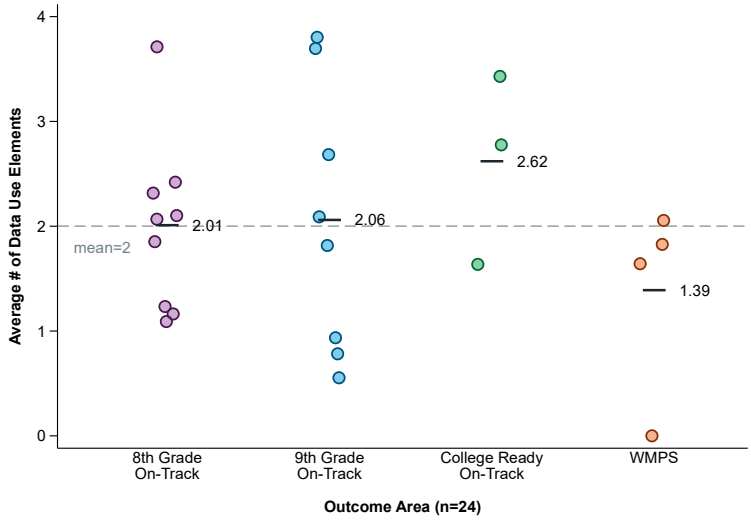
Use of Data

As part of the initiative, CI teams were expected to draw on data during various CI activities, including when conducting root cause analyses or setting aims, developing driver diagrams, and most importantly, conducting inquiry cycles. We examined the use of all types of data, including

both quantitative and qualitative data used in any aspect of the CI process, such as the root cause analyses and inquiry cycles.

Artifacts collected showed that across all outcome areas, **schools within all but one NSI showed evidence of attention to at least some of the elements related to data use. On average, schools showed evidence of attention to half (2) of the four elements examined** (Exhibit 11). The box embedded in the figure describes the specific elements, evident in artifacts, related to data use, ordered from most to least prevalent.

Exhibit 11. Average Number of Data Use Elements, by NSI and Outcome Area, Grant Year 5



Elements of data use examined:

1. Data use supported by intermediary
2. Data used to develop plan
3. Data to be collected align with plan
4. Data collected or analyzed during study phase of inquiry cycle

Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not provide artifact data in Grant Year 5. The number of schools equals 502. The average number of data use elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

Box 8 describes examples of data commonly used by CI teams. Although the type of data used by teams varied—as did whether teams used data in some or all phases of the CI process—the artifacts collected suggest that schools across all NSI understood that using data was central to this work.

BOX 8. EXAMPLES OF DATA USED BY CI TEAMS

We found that CI teams often collected and used the following types of data:

Student achievement data. One team used biweekly vocabulary quizzes to determine whether student knowledge was increasing. Another team used classroom observation data to assess student fluency.

Student activity data. One team tracked FAFSA completion rates via the intermediary dashboard. Another collected data about student attendance at an afterschool program.

Student self-efficacy scales. One team surveyed students to learn what would help them succeed in math class. The team implemented the change idea multiple times, following up with a postchange survey after each round.

Source. School case studies from 2022–23 and 2024–25.

RQ 3. What Change Ideas Do Schools Select for Testing and Implementation as Part of CI?

Inquiry cycles are designed to test and improve specific change ideas, and thus, selecting a change idea is a key part of the initial ("Plan") phase of a cycle. Ideally, a CI team selects a change idea that clearly and directly aligns with the team's aim statement and is grounded in an understanding of *why* the problem exists (root cause analysis) and *how* improvement happens (theory of practice improvement).

All NSI supported CI teams through the change idea selection process, although some NSI were more prescriptive in terms of the change ideas CI teams could select. According to interviews with intermediary staff, three quarters of NSI (78%) reported providing CI teams with a list of change ideas to choose from in Grant Year 5, up from two thirds of NSI (65%) in Grant Year 3. Of the NSI that provided CI teams with a list of change ideas, most (72%) either required or strongly advised CI teams to use one of the change ideas provided in Grant Year 5, up from 40% in Grant Year 3. All NSI, including the six NSI that did not provide a list of change ideas to choose from in Grant Year 5, reported providing some guidance to CI teams in selecting change ideas.

In some cases, NSI provided CI teams with "change idea packages," which are resources designed to support the implementation of a change idea. Change idea packages typically include a summary of the evidence supporting the effectiveness of the change idea, key

implementation steps including real-life examples, and tools for measuring whether the change idea is working. See Box 9 for an example of a typical change idea package.

BOX 9. EXAMPLE CHANGE IDEA PACKAGE

One cohort 3 NSI provided CI teams with change idea packages that included resources to "Learn More" and "Try It."

"Learn More" included links to videos and podcasts related to the change idea and research-based articles, blogs, and chapters to help teachers learn more about the evidence supporting the change ideas.

"Try It" included links to resources to help teachers plan for integrating the change idea into their lessons and student-facing resources to support facilitation. This section also included links to trackers, note-catchers, and other various tools to help teachers collect data related to the change idea.

Source. Artifacts from 2024–2025.

To understand the focus of change ideas, we classified each change idea into topics based on a taxonomy developed by the foundation. See Box 10 for examples of change ideas related to various topics. See Appendix A for full definitions of each change idea topic area. Some change ideas focused on changing classroom instruction, others focused on addressing nonacademic needs (such as sense of belonging), and some focused on changing systems and structures outside of the classroom.

Change idea topics varied considerably by outcome area and within some outcome areas (Exhibit 12)**.** Most schools within 8th-grade on-track and college-ready on-track NSI selected change ideas related solely to shifts in pedagogic practices. Most schools within WMPS NSI selected change ideas focused on postsecondary issues, including college access and affordability (45%) and college-going culture (28%), as well as on academic advising and tutoring (23%). In contrast, most schools within 9th-grade on-track NSI selected change ideas focused on a wider variety of topics, including shifts in pedagogic practices (21%), adult/student relationships and school culture (19%), school systems and processes (15%), academic advising and tutoring (13%), and changes in classroom culture (13%). Certain change idea topics, including social-emotional learning and identifying students in need of academic support, were rarely selected by any school team in any NSI in Grant Year 5, regardless of outcome area, and change ideas focused on family connections were never selected in Grant Year 5. See Box 9 for examples of change ideas selected, by outcome area, for the most common change idea topic areas.

Exhibit 12. Percentage of Change Ideas Focused on Specific Topics, by Outcome Area, Grant Year 5

Topic	8th-Grade On Track	9th-Grade On Track	College-Ready On Track	WMPS
Academic advising and tutoring	0%	13%	6%	**23%**
Adult–student relationships and school culture	10%	**19%**	8%	0%
Changes in classroom culture	8%	13%	8%	0%
College access and affordability	0%	0%	0%	**45%**
College-going culture	0%	0%	0%	**28%**
Curricular changes	**15%**	7%	10%	0%
Family connections	0%	0%	0%	0%
Identifying students in need of academic support	0%	7%	5%	0%
School systems and policies	0%	**15%**	1%	0%
Shifts to pedagogic practices	**67%**	**21%**	**58%**	3%
Social-emotional learning	0%	2%	3%	0%
Other	0%	3%	1%	0%
***N* of NSI**	**8**	**8**	**3**	**3**

Source. Artifacts from 2022–23 (cohort 1), 2023–24 (cohort 1B/2), and 2024–25 (cohort 3).
Note. Values of 15% or more are shown in bold. The number of NSI equals 21. One NSI is represented in both 8th- and 9th-grade on track, and four NSI with no schools that engaged in cycles are excluded. Analyses are based on cycle-level data and include all schools with artifacts showing evidence that a change idea was selected as part of a Plan phase in at least one cycle and in which the change idea topic could be determined. The percentage shown for each outcome area is calculated as the equally weighted mean of each NSI's percentage within the outcome area. The percentage for each NSI is calculated as the equally weighted mean of each school's percentage within the NSI. The percentage for each school is calculated as the equally weighted mean of the cycles within a school with evidence of a change idea. WMPS = well-matched postsecondary.

The discussion above focused separately on each core parameter of CI (e.g., developing an aim statement, engaging in inquiry cycles to test a change idea, using data). To illustrate how these components fit together in CI work, Box 11 illustrates CI activities for four NSI schools, each working with a different NSI focused on one of the four outcome areas. These examples provide an indication of the range of CI activities that occurred in NSI schools.

BOX 10. EXAMPLE OF CHANGE IDEAS, BY OUTCOME AREA AND CHANGE IDEA TOPIC

Outcome Area	Change Idea Examples (With Topic in Bold)
8th-Grade On Track	Many change ideas selected by schools within 8th-grade on-track NSI often focused on using **small group instruction as a specific pedagogic practice**. For example, one school added targeted small group instruction lessons to its station routine at least once a week. School CI team members posited that incorporating regular small group instruction would support strategic teacher planning based on student learning gaps and student strengths, which would in turn ensure that struggling students got more support.
9th-Grade On Track	In addition to shifts in pedagogic practices, schools within 9th-grade on-track NSI often selected change ideas focused on **supporting adult–student relationships**. For example, one school kept a running log of interactions with students to record new things learned about students during each interaction. Schools in 9th-grade on-track NSI also often selected change ideas focused on **school systems and policies**. For example, one school team implemented a grading policy change, replacing 0s with 50s. Another team implemented a review day, followed by a makeup day, for two essential concepts.
College-Ready On Track	Many change ideas selected by schools within college-ready on-track NSI focused **on improving academic discourse as a specific pedagogic practice**. For example, in one school, the CI team focused on selecting high-quality task(s) and planning effective questions and follow-up opportunities for students. Another team incorporated specific strategies designed to facilitate discourse, including a "discovering my 'why'" worksheet, think–write–pair share opportunities in lessons, and conversations about "noticings."
Well-Matched Postsecondary	Schools in WMPS NSI often selected change ideas focused on **college access and affordability**, and these change ideas frequently focused on supporting FAFSA completion. For example, one school team made plans to promote an upcoming financial aid night and then help students who attended the Financial Aid Night schedule a follow-up meeting with their advisor. Another team implemented dedicated time each week (Workshop Wednesdays) to provide students with a place to work on college-related applications, including FAFSA. Other schools in WMPS NSI selected change ideas focused on **building a college-going culture**. For example, one school implemented 1:1 meetings between juniors and advisors for students to complete the SuperMatch College Search Activity.

Source. Artifacts from 2023–24 and 2024–25.

BOX 11. EXAMPLES OF CI ACTIVITIES IN NSI SCHOOLS, BY OUTCOME AREA

	8th-Grade On Track	9th-Grade On Track	College-Ready On Track	Well-Matched Postsecondary
Aim Statement	School will reduce the number of students who leave writing sections blank on state tests.	By June 2023, the percentage of 9th-grade students who are highly vulnerable or vulnerable will decrease from 59% to 40%, and the percentage of 9th-grade students who move up at least one on-track level will increase from 26% to 40%.	By 2026, 70% of students will be eligible for automatic admission to the state college system. These requirements include receiving a grade of C or better in three years of college-prep math.	School will achieve 80% FAFSA completion among seniors.
Change Idea	To improve performance on writing assessments, teams used the Hochman Method from "The Writing Revolution" book. The method uses a structured writing strategy to teach kids of all ages how to write.	To support vulnerable students, teams implemented 2x10 ("Two by Ten"), a method of building relationships with disengaged students by spending two minutes in conversation with them over 10 days.	To help students become more comfortable participating in math class, teams introduced the Four Corners activity. For this activity, teachers asked students a question with four answer options, where each corner of the classroom represented one of the options. Students went to the corner that had the answer they most agreed with and talked to other students with similar answers.	To encourage FAFSA completion, teams provided each student who submitted a FAFSA application with a free meal from a food truck.
Data Collected	The team collected and discussed student writing samples and reviewed student data. They also conducted classroom observations of writing instruction.	The team collected teacher logs or reflections of each 2-minute check-in.	Before and after the Four Corners activity, the CI team used a survey to ask students whether they felt comfortable participating in math class.	CI team members tracked FAFSA completion rates, disaggregated by subgroups including English learners, using a dashboard provided by their intermediary.
Outcome	The team adopted the Hochman Method with plans of adapting the method for each grade level.	After one cycle, the team made some adjustments and tested 2×10 again. After the second cycle, the team chose to adopt 2×10 as a regular practice.	Student survey responses indicated that students were more comfortable sharing with the whole class after participating in Four Corners a few times. Because the change idea was effective in addressing the problem, the team adopted the practice.	CI team members focused follow-up communications about FAFSA on English learners since they noticed these students were completing FAFSA at a slower rate than other student groups.

Source. School case studies and artifacts from 2022–23 and 2024–25.

RQ 4. To What Extent Do CI Teams Explicitly Focus on Improving Outcomes for Black Students, Latino Students, or Students Experiencing Poverty?

A central goal of the NSI initiative was to improve outcomes for Black students, Latino students, and students experiencing poverty. Artifact evidence of attention to equity in the CI process varied across NSI, from a general focus on improving outcomes for all students to a much more specific focus on addressing systemic inequities in schools to increase opportunity and improve outcomes for Black students, Latino students, and students experiencing poverty.

We used a shared equity framework developed in partnership with RAND to guide our examination of attention to equity. The framework focuses on four dimensions of equity: access, achievement, identity, and agency (see Box 12). We drew on artifacts to assess whether each school focused on any of the four dimensions of equity, for each of five core components (root cause analysis, aim statement, theory of practice improvement, disciplined inquiry cycles, and data use). Overall, **explicit attention to equity was low across all NSI,** with NSI showing evidence of attention to equity in fewer than two core parameters, on average, regardless of dimension (Exhibit 13). In general, NSI showed more evidence of attention to the *access* and *achievement* dimensions of equity than to the *agency* or *identity* dimensions. The access and achievement dimensions focus on tangible resources and outcomes, which may be considered more manageable and better aligned with traditional educational goals. On average, schools within WMPS NSI showed more attention to the equity dimensions of agency and access than did schools within NSI focused on other outcome areas.

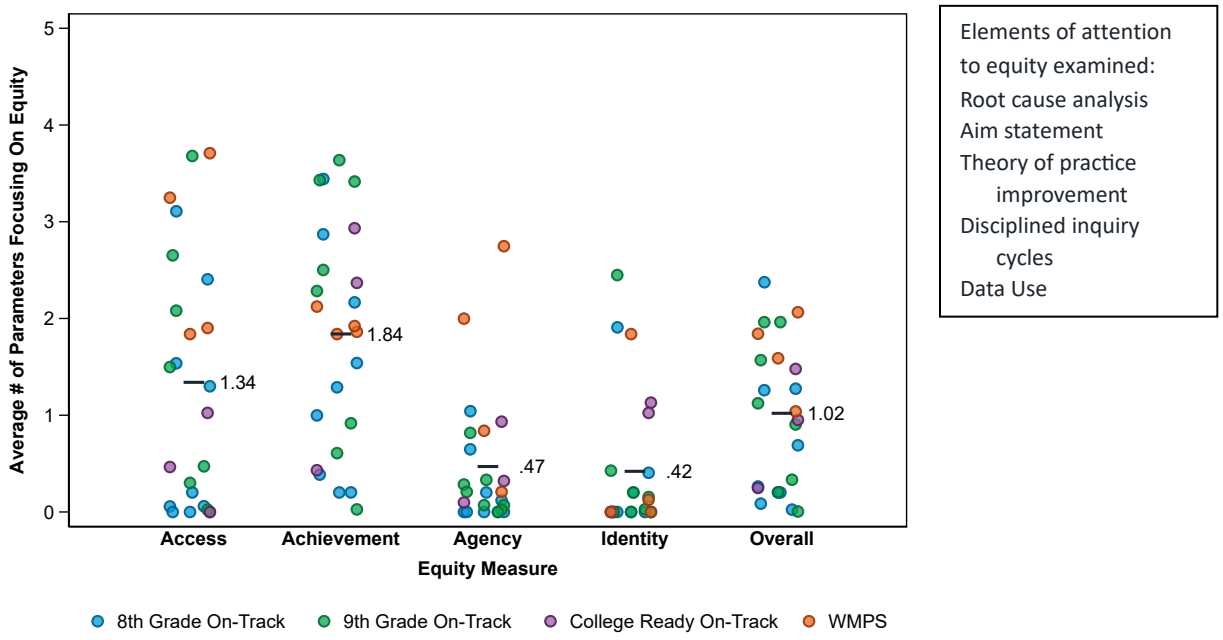
BOX 12. EQUITY FRAMEWORK

To help ground our understanding of equity in CI work, the evaluation partners collaboratively developed a framework for conceptualizing equity informed by Gutiérrez (2007, 2012). Like Gutiérrez, our framework comprises four equity dimensions (access, achievement, identity, and agency). The table below illustrates how we defined each dimension and provides examples of what evidence of each dimension might look like in CI work.

Dimension	Definition	Example of attention to equity in CI work
Access	Providing access to (a) teachers who are attentive to student needs (e.g., addressing teacher mindsets); (b) supplies for effective learning (e.g., equipment, software, materials in multiple languages); (c) a classroom environment that encourages student participation (e.g., perhaps using pedagogical tools that consider how students learn differently); and (d) support/opportunities (e.g., tutoring, afterschool programs for outside learning).	Schools and CI teams provide resources and/or opportunities to increase use and/or participation (e.g., participation in advanced coursework) among Black and Latino students and those experiencing poverty.
Achievement	Enabling students to achieve traditional outcomes, including grades, test scores, course taking, graduation, and postsecondary attendance; documenting outcomes and disaggregating data to identify gaps.	Schools and CI teams gather and focus on data used to identify patterns of disparity, particularly around grades and scores on standardized tests for Black and Latino students and those experiencing poverty.
Identity	Using resources and interventions that are attentive to a student's or teacher's background and that may include personal characteristics; family and community histories; and their membership in social groups based on race, ethnicity, gender, class, status, ability, sexual orientation, religion, language, and many others. Identity situates education as a cultural practice in which learners can see themselves and others favorably.	Schools and CI teams engage in activities designed to increase or improve the use of culturally responsive teaching.
Agency	Using resources and interventions that provide students from nondominant backgrounds with increased opportunity to use their voices and express agency to challenge contemporary inequalities within and beyond school walls, with the goal of engendering structural change.	Schools and CI teams test and implement change ideas, such as using a survey like the PERTS Elevate survey,[12] designed to elicit student voice.

[12] For more information, see https://www.perts.net/elevate.

Exhibit 13. Average Number of Parameters Focusing on Equity, by Dimension and Outcome Area, Grant Year 5



Source. Artifacts for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not provide artifact data in Grant Year 5. The number of schools for each equity measure equals 502. The average number of equity elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

RQ 5. Does the Level of Implementation of Key CI Features Differ by Cohort, Late Entry, Outcome Area, or Grant Year?

The analyses reported above focus on the level of implementation in Grant Year 5, examining the variation in implementation across NSI and across outcome areas. This section considers other dimensions of variation and further explores variation by outcome area. To maximize the number of schools included in the analysis, we include data from all available years.[13]

[13] The results for cohort, outcome area, and late entry are based on a multilevel model with years nested within schools nested within NSI and with cohort, outcome area, late-entry status, and grant year as independent variables. The results for grant year are based on a model described in the notes for Exhibits 14 and 15. For more detail, see Appendix E. Full model results are in Appendix Exhibit F1 for cohort, outcome area, and late entry. Model results for change over grant years are in Appendix Exhibit F2.

Cohort

The Gates Foundation launched the NSI in three cohorts, which began work in 2018–19 (cohort 1), 2019–20 (cohort 1B/2), and 2020–21 (cohort 3). For several reasons, the three cohorts may have differed in level of implementation. In particular, the foundation built on experience from the grant competition for cohort 1 in structuring the competitions for cohorts 1B/2 and 3. In addition, 7 of the 10 cohort 3 intermediaries also operated a cohort 1 or 1B/2 NSI and may have learned from their prior experience. Finally, the COVID-19 pandemic, which emerged in the spring of 2020, affected the three cohorts at different points in their development. We assessed whether the level of implementation differed by cohort, pooling data from all available grant years for each NSI.

Schools working with cohort 3 NSI had higher levels of implementation of CI than did schools working with cohort 1 or 1B/2 NSI. Cohort 3 schools completed a higher percentage of cycles than did cohort 1 or 1B/2 NSI, and they were higher on the implementation of an aim statement and the implementation of a theory of practice improvement. Cohort 3 schools were less likely to conduct a root cause analysis.

The higher level of implementation for cohort 3 could reflect the prior experience of cohort 3 NSI, as described above. In addition, it could reflect the fact that cohort 3 NSI were less affected by the pandemic than cohort 1 or 1B/2. The pandemic erupted in the spring of 2020; cohort 3 NSI generally began work in the 2020–21 school year.

Late-Entering Schools

Each NSI began its work with a set of schools in Grant Year 1 (or, in a few cases, Grant Year 2). Subsequently, most NSI also recruited some additional schools to join their networks.[14] Because these "late-entry" schools received fewer years of support than did other schools in the same grant year, and had fewer years to build capacity, we wondered if they may have differed in level of implementation.

Late-entering schools had lower levels of implementation than did schools that entered at the start of each NSI's work. Averaging across all grant years for which we had data, late entrants completed a lower percentage of cycles, were less likely to initiate one cycle, and were lower on the level of implementation of aim statements and data use. In addition, they initiated more cycles and were higher on the level of implementation of the theory of practice improvement.

[14] Late-entering schools are included in computing the average level of implementation for each NSI in Grant Year 5, reported for RQs 1–4 above.

Outcome Area

The analyses for RQs 1–4 examine the level of implementation by outcome area for Grant Year 5. One remaining question is whether there are consistent differences by outcome area across grant years.

One aspect of implementation in which the four outcome areas consistently differed is the topics on which their change ideas focus. Eighth-grade and college-ready on-track NSI tended to focus on pedagogical practices in all grant years, whereas 9th-grade on-track and WMPS NSI tended to focus on a broader range of topics.

In addition, the level of implementation of the agency and access equity dimensions differed across outcome areas. Overall, averaging over grant years, the number and percentage of schools with attention to equity in the access and agency dimensions was highest for WMPS NSI and lowest for 8th-grade on-track NSI.

There were no consistent differences across outcome areas in the other aspects of CI. This finding is perhaps not surprising given the year-to-year change in the level of implementation for each NSI discussed above. Much of the variation in implementation appears to be from NSI to NSI and from grant year to grant year within NSI, not by outcome area.

Grant Year

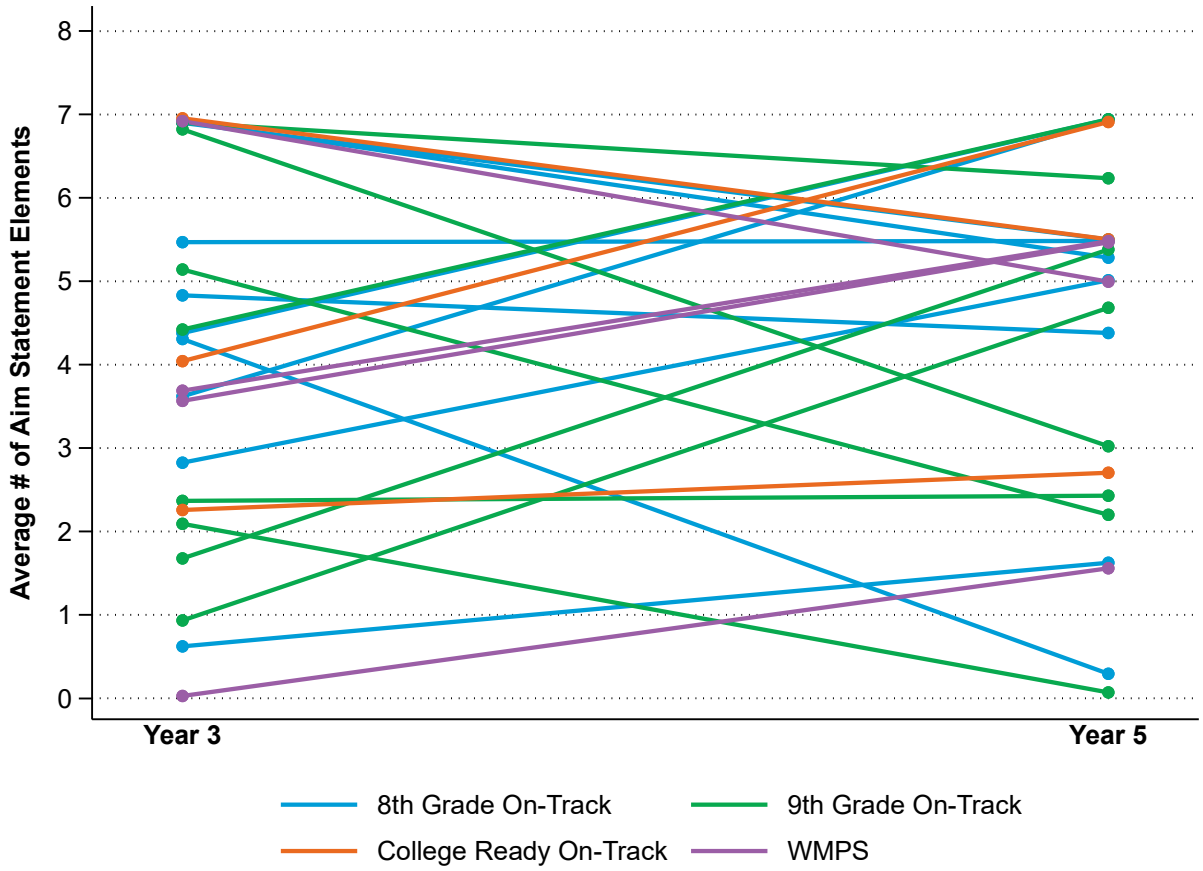
The foundation awarded the NSI 5-year grants to ensure sufficient time to build the capacity for CI in the schools and make it a routine part of school operations. To assess whether the level of implementation improved over the years of the grant, we examined trends in implementation from Grant Years 3 to 5 for all NSI that had data in both years. Details on the analysis can be found in Appendix E and full model results in Appendix Exhibit F2. We chose these years because cohort 1 NSI were in Grant Year 3 when the evaluation began, and thus, we lack data on Grant Years 1 or 2 for them. Also, the effects of the pandemic are likely to be more pronounced in the early grant years.

On average, the level of implementation did not improve substantially from Grant Years 3 to 5 for most aspects of CI. For example, the level of implementation for aim statements for the 24 NSI with data in both years remained stable. The average was 3.1 of the 7 measured elements implemented for Grant Year 3 and 3.4 for Grant Year 5.

Although the overall level of implementation was roughly constant from Grant Years 3 to 5, it grew for some NSI and fell for others (Exhibit 14). This difference may reflect the fact that NSI often changed aspects of their approach to CI from one year to the next—for example, reducing expectations for documentation, increasing the focus on NSI-wide change packages, or

changing the specificity of NSI guidance and coaching. See Box 13 for examples from interviews with intermediaries about change in approach over time.

Exhibit 14. Level of Implementation of Aim Statements, by NSI and Outcome Area, Grant Years 3 and 5



Source. Artifacts from 2020–21 and 2022–23 (cohort 1 NSI), 2021–22 and 2023–24 (cohort 1B/2 NSI), and 2022–23 and 2024–25 (cohort 3 NSI).

Note. The number of NSI equals 24. This excludes one NSI that did not have artifact data in both grant years. The number of schools equals 547. The number of elements for Grant Year 3 and the trend from Grant Years 3 to 5 for each NSI was estimated based on a multilevel model with time points nested in schools nested in NSI, a random intercept at the NSI level for the number of elements at Grant Year 3, and a random slope for the trend from Grant Years 3 to 5. The plotted values are empirical Bayes estimates based on the model. WMPS = well-matched postsecondary

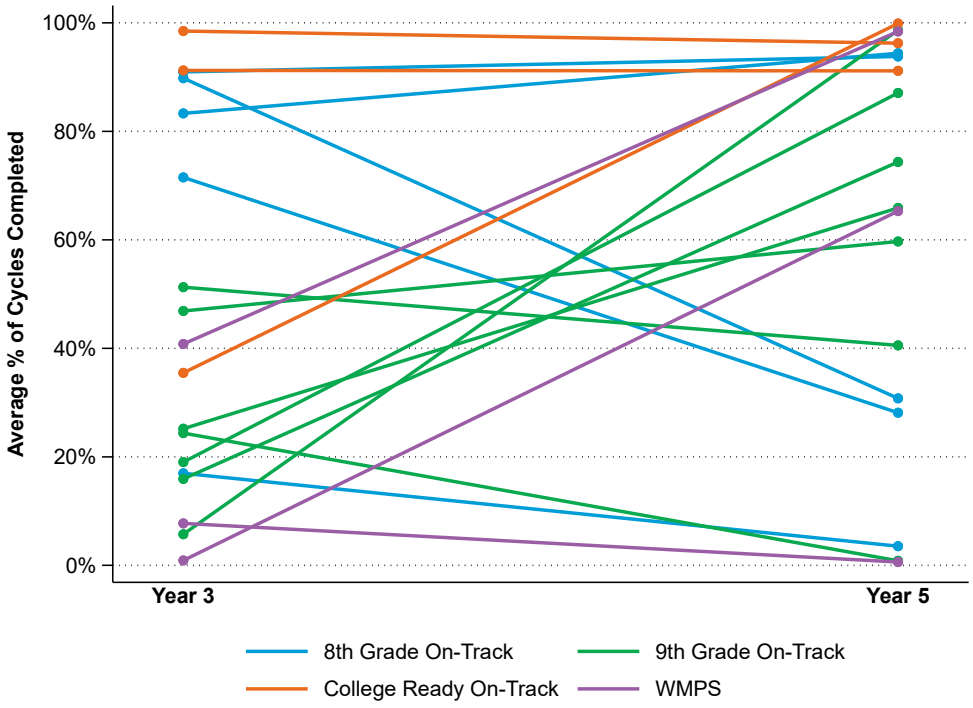
BOX 13. CHANGE OVER GRANT YEARS IN THE APPROACH TO NETWORKED CI

In later years, some NSI encouraged more consistency across schools within the NSI. For example, a cohort 1B intermediary reflected on Grant Year 5 that, "in previous iterations of the network, when it was more like the wild west, it was really hard to communicate learning, because people started doing really vastly different things." Similarly, a cohort 2 intermediary noted that in early years, "We kind of felt scattered … we had nine different schools doing nine different change ideas." Toward the end of the grant period, the intermediary added, "We said if we're going to stay really dedicated to continuous improvement, we need to say it's going to be one thing that we're going to see through the finish line for the entirety of the year."

Source. Intermediary interviews from 2023–24.

One area in which there was overall improvement from Grant Years 3 to 5 was the completeness of inquiry cycles. On average, the percentage of cycles completed increased from 45% in Grant Year 3 to 64% in Grant Year 5, but the pattern of change over time differed substantially across NSI (Exhibit 15).

Exhibit 15. Average Percentage of Cycles Completed, by NSI and Outcome Area, Grant Years 3 and 5



Source. Artifacts from 2020–21 and 2022–23 (cohort 1 NSI), 2021–22 and 2023–24 (cohort 1B/2 NSI), and 2022–23 and 2024–25 (cohort 3 NSI).

Note. The number of NSI equals 18. This excludes seven NSI that did not engage in cycle work in both grant years. The number of schools equals 539. Analyses are based on cycle-level data. The analysis includes all schools with evidence of at least one cycle and excludes NSI with no schools that engaged in cycles. The percent complete for Grant Year 3 and the trend from Grant Years 3 to 5 for each NSI was estimated based on a multilevel model with time points nested in schools nested in NSI, a random intercept at the NSI level for the percent at Grant Year 3, and a random slope for the trend from Grant Years 3 to 5. The plotted values are empirical Bayes estimates based on the model. WMPS = well-matched postsecondary.

Although there were some differences in CI implementation, particularly for cohort 3 NSI and late entrants, most of the variation in CI implementation was between individual NSI, perhaps reflecting their individualized and varied approaches.

RQ 6. What Enabling Conditions Support Schools' Implementation of CI?

CI teams do not carry out their work in isolation. Their efforts to engage in CI may be influenced by factors such as school-level policies, procedures, and initiatives that give educators time to collaborate; and school support, including professional development, coaching, and leadership support. In addition, the teams' membership may change over the course of a given year or between years of involvement, and the teams operate within the context of a school's overall climate and attitudes toward collaboration. Finally, the intermediary organizations that foster the network provide supports to teams that may facilitate their work.

In the analyses that follow, we examine the distribution of a set of potential enabling conditions related to educator planning, meeting frequency, school supports, school leader supports, CI team stability, NSI supports, and measures of school climate across NSI.[15] We then examine the extent to which these conditions (across years) are related to the implementation of CI.

A companion report (Garet et al., 2026) examines the relationship between aspects of networks and coaching and school-level implementation of CI.

Planning Time

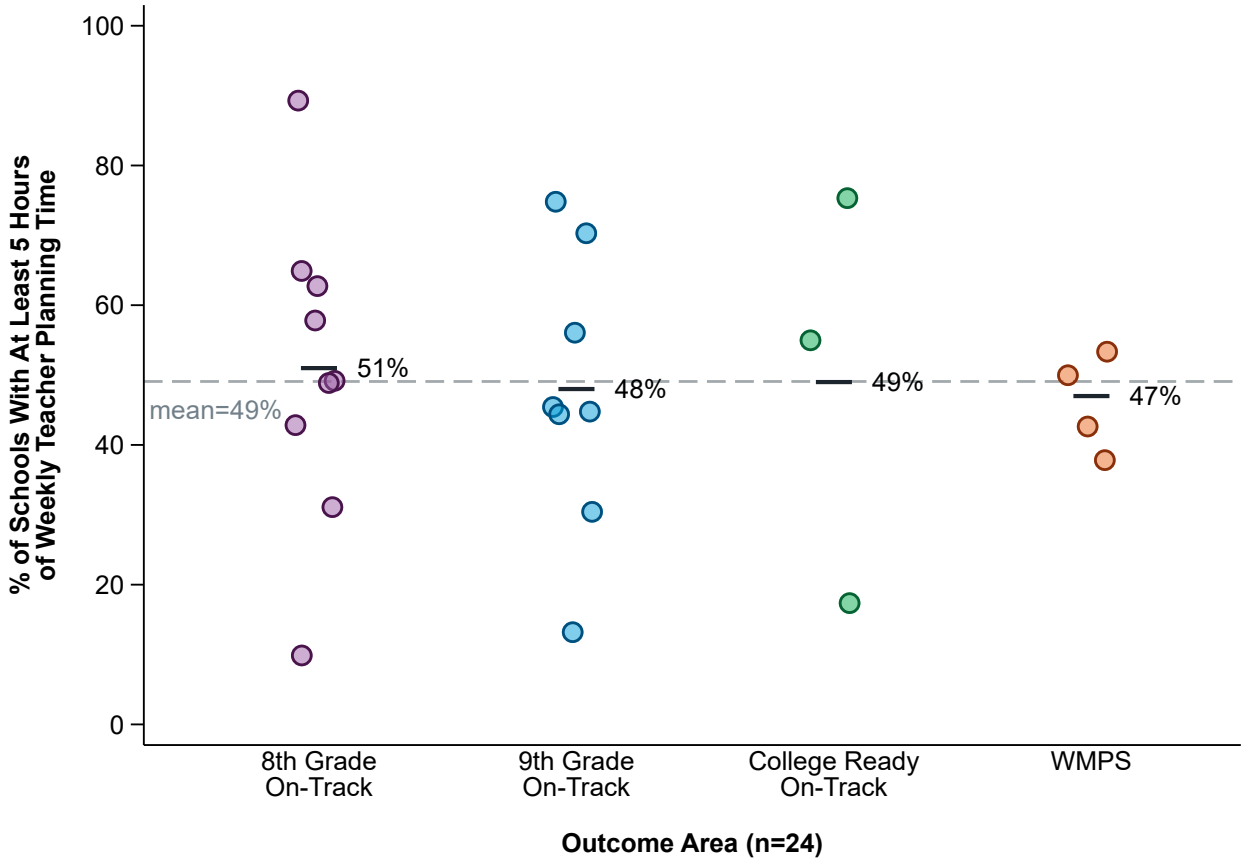
One factor hypothesized to enable CI implementation is adequate time for CI teams to plan and meet. We assessed planning time by asking surveyed school leaders to describe the amount of

[15] We examined the enabling conditions, except for measures of school climate, in Grant Year 5. We examined measures of school climate in Grant Year 3 due to data availability.

time allocated for educators in their schools to plan individually. We then created a binary measure of whether teachers had at least 5 hours of planning time per week.

Many, but not most, cleared this threshold for planning time. As shown in Exhibit 16, **slightly less than half of schools provided teachers with at least 5 hours of planning time per week**. There was considerable variation across NSI: 90% of schools within one NSI met the target, whereas fewer than 20% of schools within other NSI met the target.

Exhibit 16. Percentage of Schools With At Least 5 Hours of Weekly Planning Time, by NSI and Outcome Area, Grant Year 5



Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not participate in the survey. The number of schools equals 317. The percentage for an NSI is computed as the equally weighted percentage of responses within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

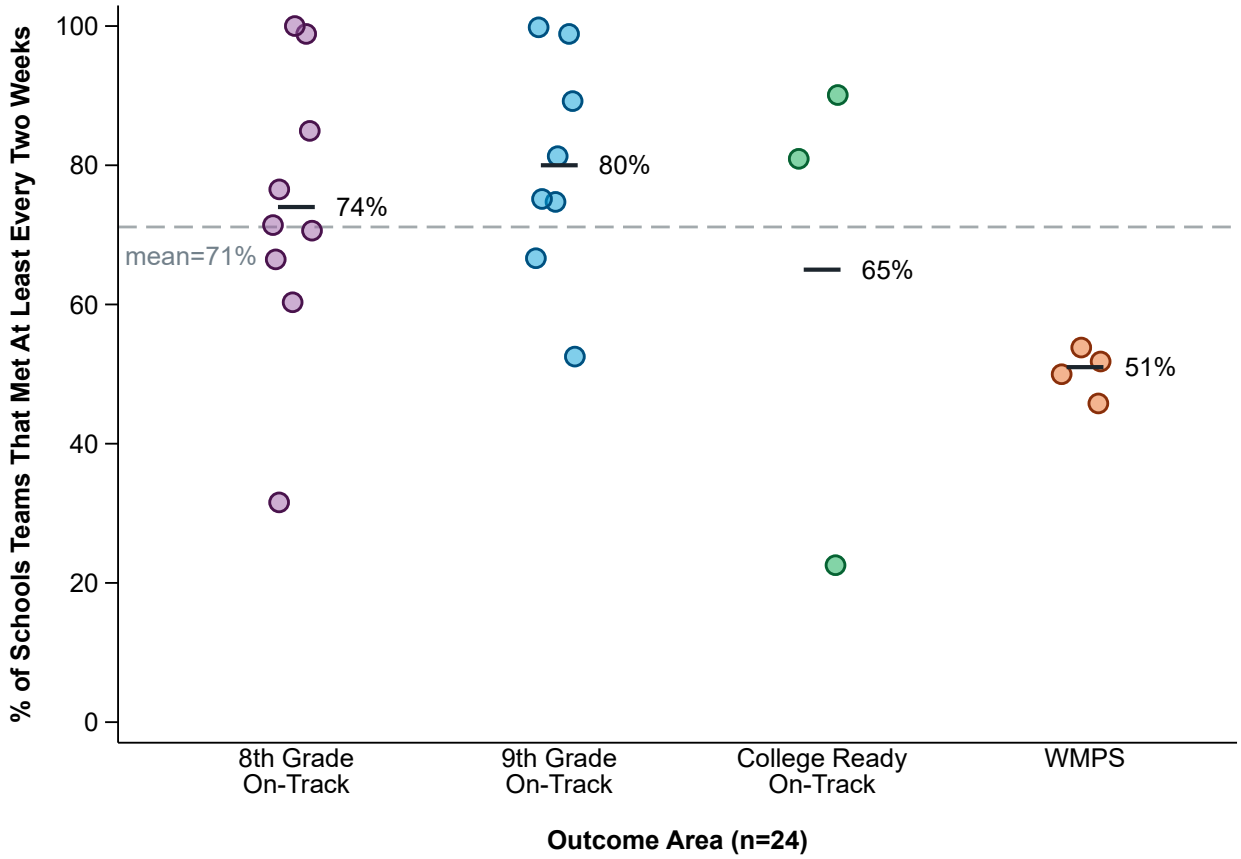
CI Team Meeting Frequency

Schools can also support CI teams by ensuring they have consistent time to meet and collaborate. We asked principals to report how frequently their school's team met, ranging

from at least twice a week to quarterly. We then created a measure of whether school leaders reported that their CI teams met at least every 2 weeks, on average.

More than 70% of schools had CI teams that met at least every 2 weeks. As shown in Exhibit 17, however, the averages by outcome area varied considerably, ranging from 80% in 9th-grade on-track NSI to 51% in WMPS NSI.

Exhibit 17. Percentage of Schools With CI Teams That Meet at Least Every 2 Weeks, by NSI and Outcome Area, Grant Year 5



Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not participate in the survey. The number of schools equals 308. The percentage for an NSI is computed as the equally weighted percentage of responses within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

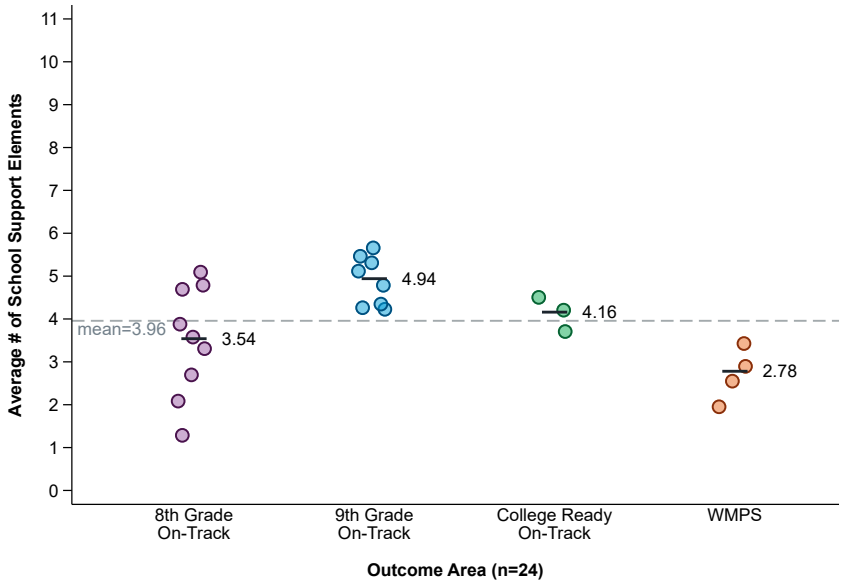
School Supports for CI Teams

Schools could have provided several formal supports to CI teams to facilitate CI implementation. We created a school support measure based on 11 survey items focused on whether they made structural changes that would support CI teams, such as hiring new staff,

changing staff roles or shifting responsibilities, making changes to the school's curricula in math and/or ELA, changing schedules, providing teacher stipends, creating new common planning periods, providing coaching, and providing professional development.

Schools did not provide many of these supports in Grant Year 5. As shown in Exhibit 18, schools offered an average of 3.96 of the 11 supports. Schools in 9th-grade on-track NSI offered an average of 4.94 supports, whereas schools in WMPS NSI offered an average of 2.78 supports.

Exhibit 18. Average Number of School Support Elements, by NSI and Outcome Area, Grant Year 5



Elements of school supports:

1. Hired new staff
2. Changed staff roles to accommodate new responsibilities
3. Reduced teacher loads to allow for more planning time
4. Changed the school schedule
5. Changed the math curriculum
6. Changed the ELA curriculum
7. Provided targeted professional development
8. Provided targeted coaching
9. Provided a stipend to staff participating
10. Provided time during afterschool meetings
11. Created a common planning time

Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).

Note. The number of NSI equals 24. This excludes one NSI that did not participate in the survey. The number of schools equals 317. The average number of school support elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

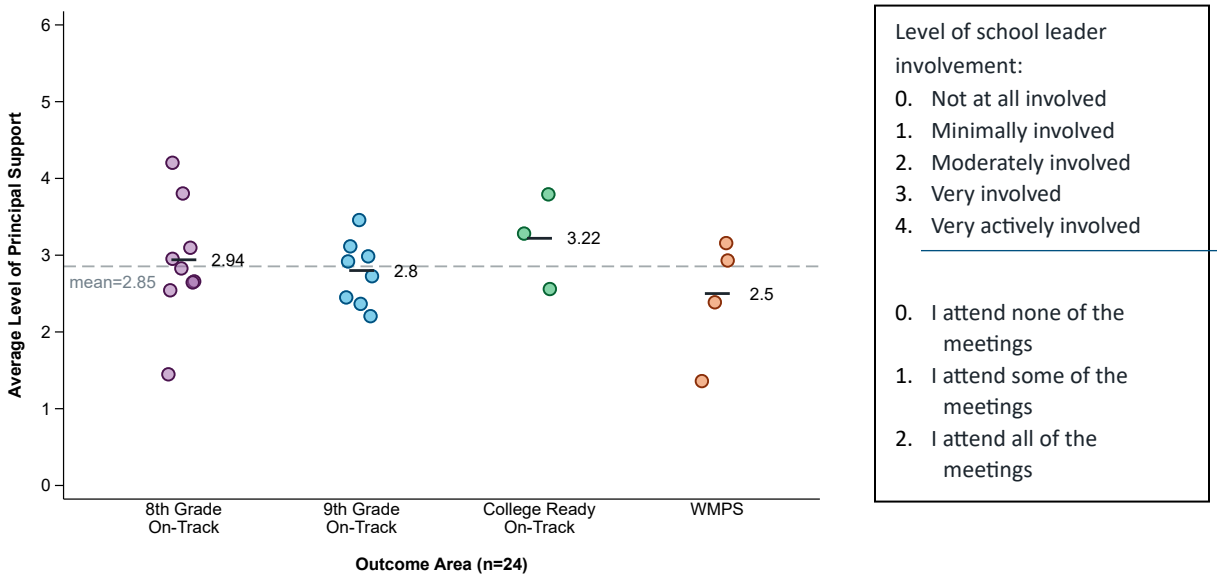
School Leader Involvement in NSI Work

We were also interested in the extent to which school leadership was involved in the school's CI work. Principals' and assistant principals' involvement in the initiative could vary from being directly involved in the team's day-to-day work to simply being aware that their school was participating in the initiative. We created a measure to assess school leaders' involvement based on responses to two survey items that asked them to rate their level of engagement and

the extent to which they participated in team meetings. One item had a five-point scale (0–4), and the other had a three-point scale (0–2).

Overall, school leaders were somewhat involved in their schools' CI teams. On a scale from 0 to 6, the school average across NSI was 2.85, as shown in Exhibit 19. While college-ready on-track NSI were slightly higher, on average, than other NSI, there was not much variation across outcome areas.

Exhibit 19. Average Level of School Leader Involvement in NSI Work, by NSI and Outcome Area, Grant Year 5



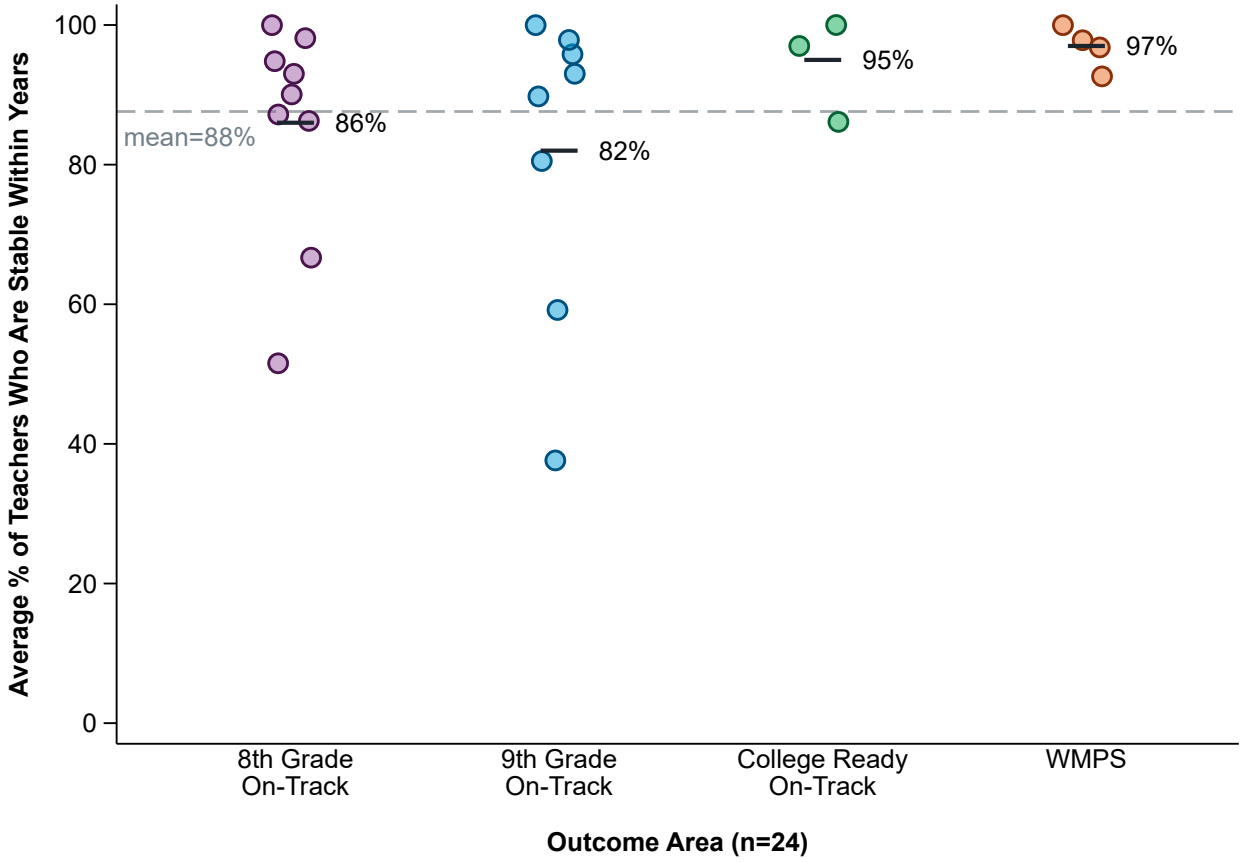
Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not participate in the survey. The number of schools equals 383. The average number of principal support elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

CI Team Stability

We also focused on the stability of CI teams' membership. We defined stability in two ways: (a) teams that held consistent membership over the course of the year and (b) teams that had consistent membership from one year to the next. One might hypothesize that teams with consistent membership over the course of the year and from one year to the next would be more successful in carrying out their work without interruptions, potential changes in priorities, and other hiccups from turnover.

CI teams were generally stable in Grant Year 5. As shown in Exhibit 20, 88% of CI team members were present in both spring and fall of that year. The team stability was highest within WMPS (97%) and college-ready on-track (95%) NSI.

Exhibit 20. Average Percentage of Team Members Who Remained on the Team From Fall to Spring, by NSI and Outcome Area, Grant Year 5

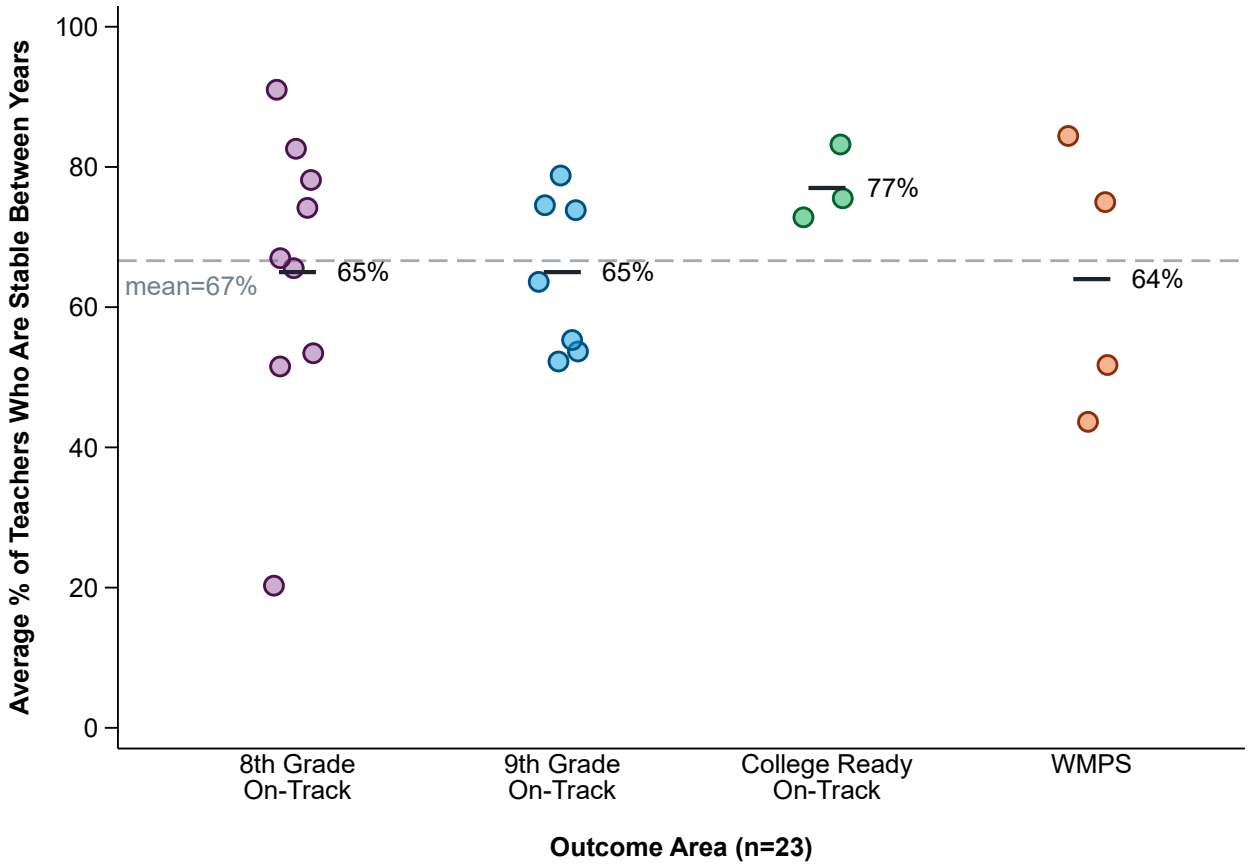


Source. Rosters of school team members collected for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).

Note. The number of NSI equals 24. This excludes one NSI that did not provide rosters in Year 5. The number of schools equals 486. The average percentage of team members that remained stable from fall to spring for an NSI is computed as the equally weighted mean of the percents for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

Most, but not all, CI team members returned between Grant Years 4 and 5. As shown in Exhibit 21, approximately two thirds of members (67%) continued in their roles between spring of Grant Year 4 and spring of Grant Year 5. But there were large differences across NSI, with the percentage that returned ranging from 20% to 90%.

Exhibit 21. Average Percentage of CI Team Members Who Remained on the Team From Spring Grant Year 4 to Fall Grant Year 5, by NSI and Outcome Area



Source. Rosters of school team members collected for 2021–22 and 2022–23 (cohort 1 NSI), 2022–23 and 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).

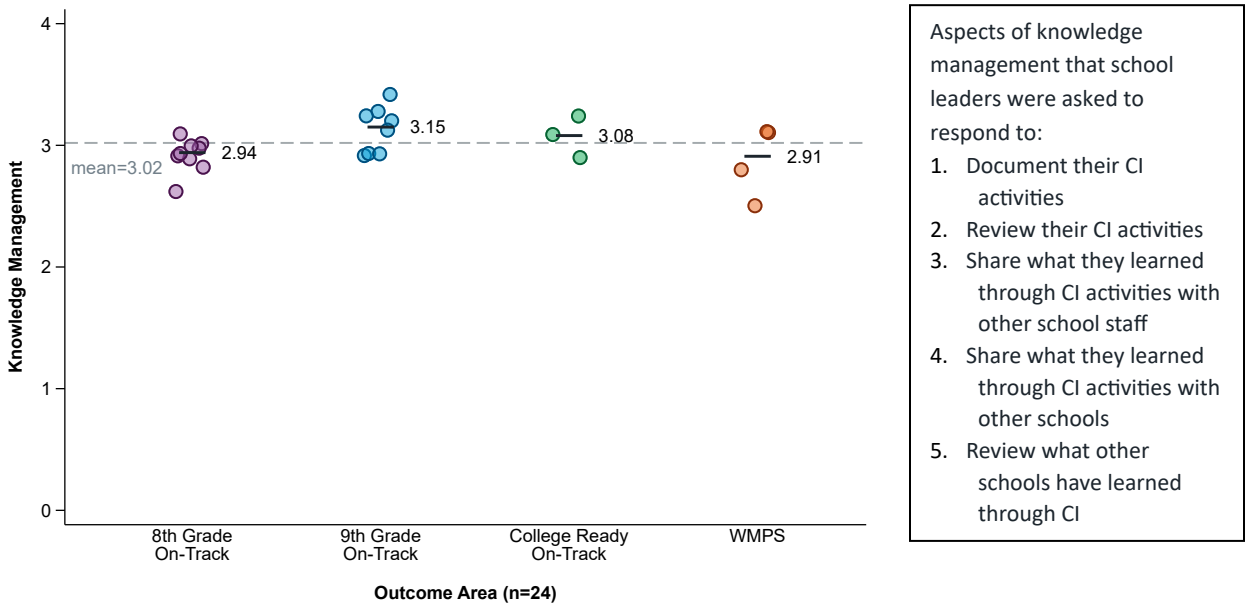
Note. The number of NSI equals 23. This excludes one NSI that did not provide rosters in Grant Year 4 and one NSI that did not provide rosters in Grant Year 5. The number of schools equals 446. The average percentage of team members that remained stable from spring to fall for an NSI is computed as the equally weighted mean of the percents for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

Intermediary Supports

We also examined two measures of NSI support for schools' CI work. Specifically, we examined intermediaries' support for knowledge management systems, as well as schools' general perceptions about the intermediaries' support for CI strategies. As discussed above, knowledge management systems are considered an essential part of the CI process (Russell et al., 2019; Taylor et al., 2014).

Schools in Grant Year 5 reported that intermediaries provided them with knowledge management systems that allowed them to document, review, and share their CI activities, as well as learn from other schools. As shown in Exhibit 22, school leaders that responded to the school leader survey provided an average rating of 3.02 on a four-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). This finding indicates that on average principals "agreed" that their NSI provided them with processes and tools that their CI team could use to engage in knowledge management activities.

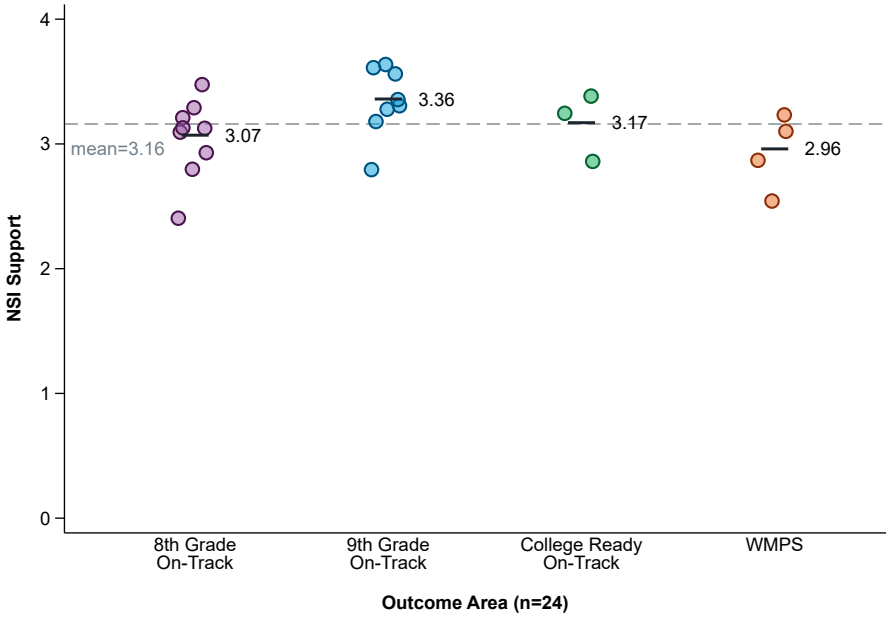
Exhibit 22. Average Ratings of NSI Support for Knowledge Management Systems, Grant Year 5



Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not participate in the survey. The number of schools equals 383. The average number of knowledge management elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

Most school leaders also agreed that their NSI provided their schools with supports needed to engage in CI in Grant Year 5. As shown in Exhibit 23, school leaders that responded to the school leader survey provided an average rating of 3.16 on a four-point scale.

Exhibit 23. Average Ratings of NSI Supports to Schools, Grant Year 5



NSI supports that school leaders were asked to respond to:

1. Support school's use of CI strategies
2. Valuable support to our school and students
3. Accessing and using relevant data for CI cycles
4. Opportunities to participate in training or consultation about evidence-based interventions
5. Opportunities to learn from other principals
6. Opportunities to connect with educators from other schools

Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).

Note. The number of NSI equals 24. This excludes one NSI that did not participate in the survey. The number of schools equals 305. The average number of knowledge management elements implemented for an NSI is computed as the equally weighted mean for the schools within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

School Climate

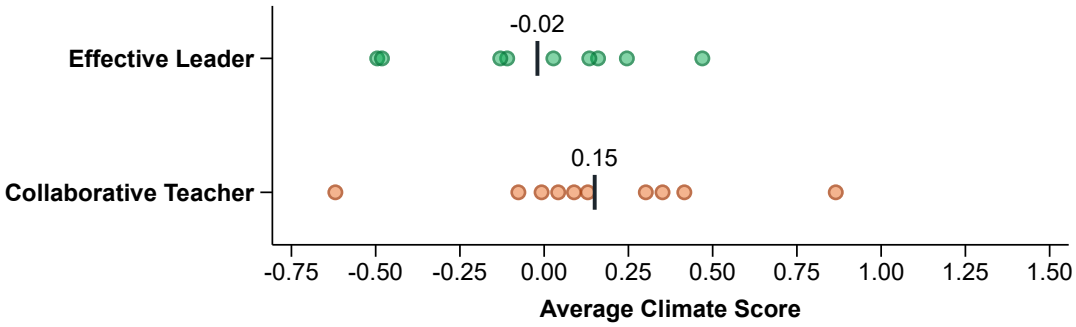
Finally, we examined measures of school climate in NSI schools. We hypothesized that two common measures of school climate might be most salient to sustaining CI teams' work: (a) perceptions of leader effectiveness and (b) perceptions of educator collaboration. Effective school leadership may be required to build and sustain a positive environment for change, and inter-educator trust and willingness to work together may be needed for effective collaboration.[16]

To measure climate, we relied on surveys of teachers routinely administered in schools in a subset of NSI. Because schools in different districts used different surveys, we created a common measure by comparing responses in the NSI schools with the district average across

[16] These two measures were derived from the Consortium on School Research's "5Essentials FAQs." See https://consortium.uchicago.edu/surveys/5Essentials-FAQs. For a discussion of the measures used in the evaluation, see Appendix D.

schools, including both NSI and non-NSI schools.[17] **Teams generally had climate scores near their district averages in Grant Year 3** (we did not examine climate in Grant Year 5 as these data were not yet available for most cohort 3 schools). As shown in Exhibit 24, the average NSI school had a measure of effective leaders that was 0.02 standard deviations below their district averages, while they had measures of educator collaboration that were 0.15 standard deviations above district averages.

Exhibit 24. Average Levels of School Climate, Grant Year 3



Source. District school climate data collected for 2020–21 (cohort 1 NSI), 2021–22 (cohort 1B/2 NSI), and 2022–23 (cohort 3 NSI).
Note. The number of NSI equals 9 for effective leaders and 11 for collaborative teachers. We calculated a score for each school based on its distribution within the district. The average climate score is computed as the equally weighted mean of the percents for the schools within the NSI. There was not sufficient sample to disaggregate climate scores by NSI's outcome areas.

Relationship Between Enabling Conditions and CI Implementation

We estimated a series of multilevel regression models exploring the relationship between enabling conditions and school-level implementation of CI.[18] As shown in Exhibit 25, **these analyses yielded several significant and mostly positive relationships.**

The individual planning time measure and cross-year team stability measure were each positively associated with three elements of implementation. Individual planning time was positively associated with data use, conducting a root cause analysis, and initiating at least one cycle. Cross-year stability was positively associated with two measures of equity (achievement and overall) and structured inquiry cycles. However, cross-year stability was negatively associated with the number of cycles initiated. One interpretation of this association might be

[17] See Appendix E for more information on the sample of NSI for which we had climate data, and the method used for scaling.
[18] The multilevel model has years nested within schools, and schools within NSI, and it incorporates all grant years for which data are available. It includes cohort, late-entry status, outcome area, and grant year as controls. We estimated 150 models examining the relationship between 10 enabling conditions and 15 measures of implementation. See Appendix E for more details on the approach and Appendix Exhibits F3, F4, and F5 for the regression results.

that a stable CI team might intentionally initiate fewer cycles with the goal of ensuring those cycles were more robust and complete.

School leader support was positively associated with one measure of implementation—having a root cause analysis.

NSI supports for knowledge management were positively associated with CI teams' data use. Broader NSI supports were also positively associated with data use, as well as with the number of cycles completed and structured tools for inquiry cycles.

Within our measures of school climate, the measure of effective leaders had a positive relationship with one measure of implementation. This measure was positively associated with using the access dimension of equity.

While not all schools consistently demonstrated every enabling condition, those with more robust supports and stable teams tended to show stronger implementation across multiple CI components.

Exhibit 25. Relationship Between Enabling Conditions and Implementation

	Aim Statement	Data Use	RCA	TPI	Equity – Access	Equity – Achieve	Equity – Agency	Equity – Identity	Equity – Overall	At Least One Cycle Initiated	Number of Cycles Initiated	Percent Cycles Completed	Number of Cycles Completed	Structured Tools for Inquiry Cycles	Adopted at Least One Change Idea
Individual Planning Time		↑	↑							↑					
Meeting Frequency			↓												↑
School Supports			↑												
School Leader Support			↑												↑
Cross-Year Team Stability						↑			↑					↑	
Within-Year Team Stability				↓			↑				↓				
Knowledge Management		↑													
NSI Supports		↑											↑	↑	
Climate – Collaborative Teachers															
Climate – Effective Leaders					↑										

Source. Artifacts, school leader surveys, and rosters collected for 2020–21 through 2024–25, and climate data for 2020–21 through 2023–24.

Note. The number of NSI equals between 9 and 25, depending on the analysis. The green arrows in the chart show statistically significant positive coefficients for the relationship between the enabling condition listed in the corresponding row and the feature of CI implementation listed in the corresponding column. The red arrows show statistically significant negative coefficients. The coefficients are based on a multilevel model with time points nested in schools nested in NSI, controlling cohort, outcome area, grant year, and school late-entry status.

RQ 7. To What Extent Is the Level of CI Implementation Associated With School-Level Adoption and Diffusion of Effective Interventions, Diffusion of CI Practices, and Changes in School Climate?

One goal of the NSI initiative was for CI teams to share what they learned beyond their CI team. This could include spread of interventions tested and found to be effective or spread of CI processes in other school contexts. Diffusion could happen both within a CI team's school or beyond the school. In addition, by encouraging school staff to work together to identify problems of practice, explore their root causes, and test potential solutions, CI work might lead to lasting changes in collaboration and other aspects of school climate.

In the following analyses, we present information on the diffusion of CI practices and change in school climate. We then summarize the extent to which diffusion of CI and changes in school climate are related to the implementation levels of CI.

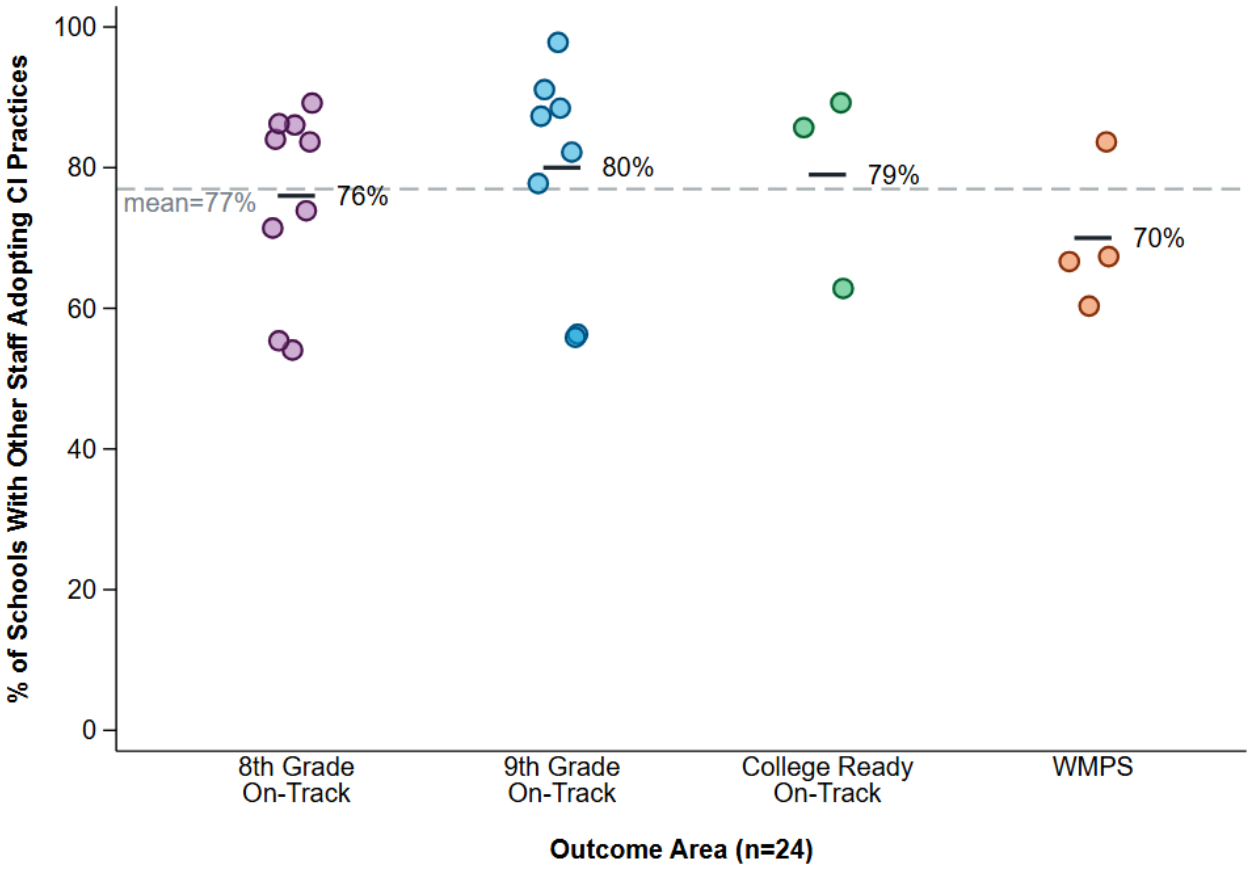
Diffusion of CI Practices

Diffusion of CI practices is challenging to measure because the evidence of diffusion may lie outside of the CI teams' cycle work and therefore the artifacts we collected. Thus, to measure diffusion of CI practices, we asked principals and assistant principals to what extent they agreed that other staff had adopted CI practices enacted by the CI team.

Most principals (77%) agreed that other staff had adopted CI practices in Grant Year 5 (Exhibit 26). There was substantial variation across NSI, with percentages as low as 60% in some NSI and 100% in others. There was limited variation in adoption of CI practices by outcome area.

> *""[Continuous Improvement] is something that we're going to continue. We're going to continue it schoolwide. I think it's good, it's relevant, because we make the plan. Our principal doesn't tell us what to do. The district's not telling us to do. It's what we feel like we need in our classroom."*
>
> *-School CI team lead*

Exhibit 26. Percentage of Schools in Which Other Staff Have Adopted CI Practices Enacted by the School's CI Team, by NSI and Outcome Area, Grant Year 5

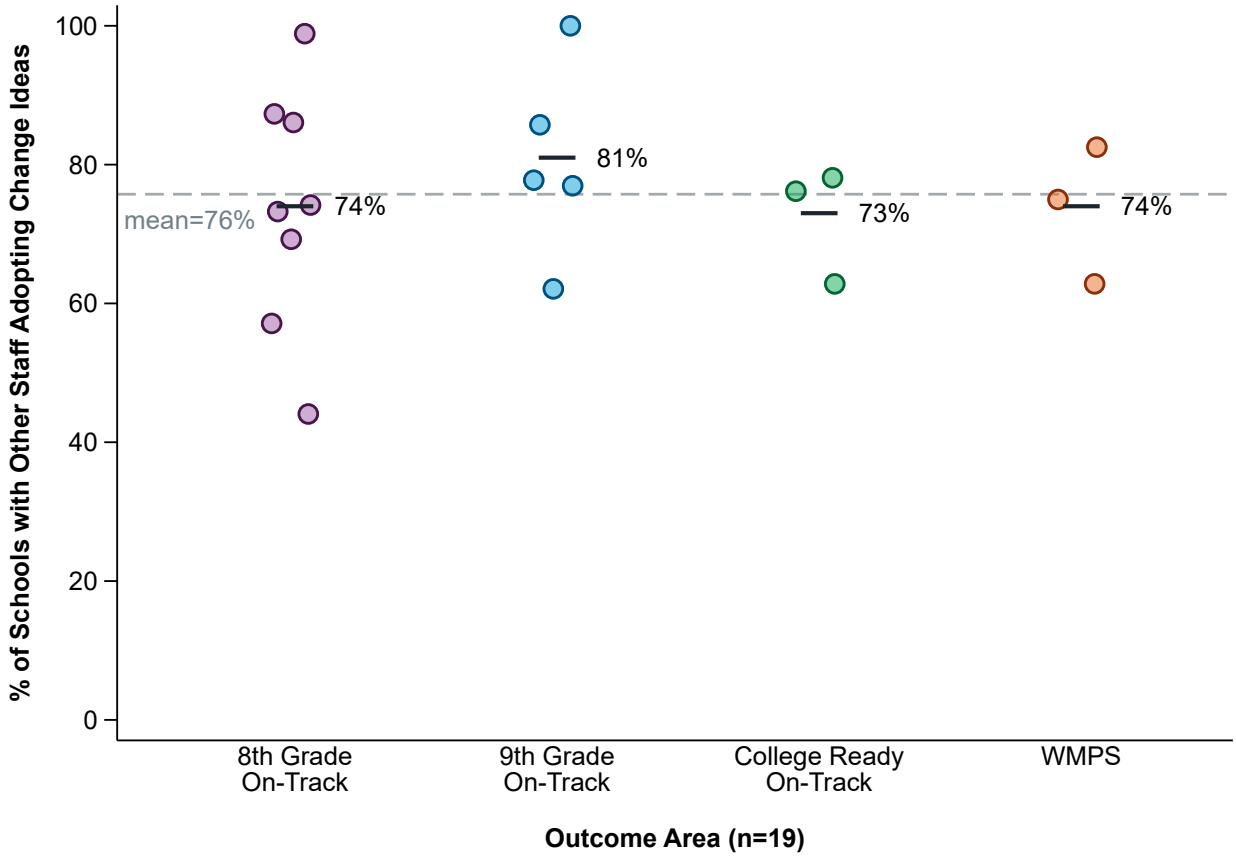


Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 24. This excludes one NSI that did not participate in the school leader survey. The number of schools equals 305. The percentage for an NSI is computed as the equally weighted percentage of responses within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

School-Level Adoption and Diffusion of Effective Interventions

School-level adoption and diffusion of effective interventions (i.e., change ideas) followed a similar pattern to school-level adoption of CI practices. **Most principals (76%) agreed that other staff at the school outside the CI team adopted at least one change idea tested by the CI team (Exhibit 27).** This agreement ranged from ~60% to 100%, except for one NSI where less than half of principals agreed that other staff had adopted change ideas enacted by the school's CI team.

Exhibit 27. Percentage of Schools in Which Other Staff Have Adopted Change Ideas Enacted by the School's CI Team, by NSI and Outcome Area, Grant Year 5



Source. School leader surveys for 2022–23 (cohort 1 NSI), 2023–24 (cohort 1B/2 NSI), and 2024–25 (cohort 3 NSI).
Note. The number of NSI equals 19. This excludes one NSI that did not participate in the school leader survey and 5 Cohort 1 NSI that did not receive this item on their survey. The number of schools is 239. The average scale score for an NSI is computed as the equally weighted scale score within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

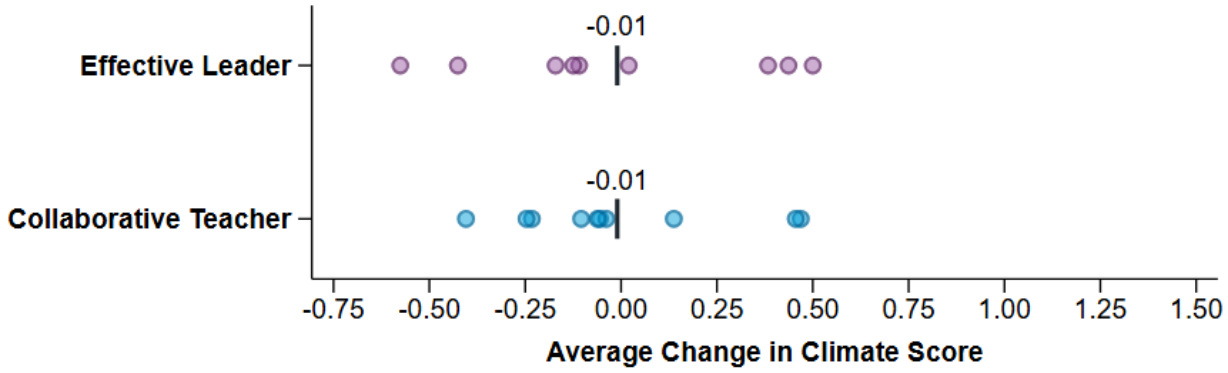
School Climate

To assess change in school climate that might have occurred due to participation in CI, we looked at the same two aspects of school climate we focused on as enabling conditions: perceptions of leader effectiveness and perceptions of collaboration.[19] We focused on change between Grant Years 1 and 3 because those were the years with the most climate data available.

[19] For more information on the measures of climate, see Section 6 on enabling conditions, above, and Appendix E.

On average, there was nearly no change in either climate measure between Grant Years 1 and 3; however, there was variation among NSI (Exhibit 28). Some NSI saw an average increase of 0.5 standardized score values, while others saw an average decrease of 0.5. The lack of changes on these measures may not be surprising as the measures were collected from *all* staff in a school while the NSI only worked with teams of educators in a specific grade level or subject.

Exhibit 28. Average Change in Climate Scale Score, by NSI and Outcome Area, Grant Year 3



Source. District climate data for 2020–21 (cohort 1 NSI), 2021–22 (cohort 1B/2 NSI), and 2022–23 (cohort 3 NSI).
Note. The number of NSI equals 9 for Effective Leader and 10 for Collaborative Teacher. The number of schools equals 129 for Effective Leader and 136 for Collaborative Teacher. The percentage for an NSI is computed as the equally weighted percentage of responses within the NSI. The mean for each of the four outcome areas is computed as the equally weighted mean for the NSI in that outcome area. WMPS = well-matched postsecondary.

Relationship Between CI Implementation, Diffusion of CI Practices, and Change in School Climate

We estimated a series of multilevel regression models to assess whether schools with stronger implementation of the 15 elements of CI described in RQs 1–4 were more likely to engage in diffusion of CI outside the team.[20] Among the 30 models estimated for the relationship between the implementation of CI and diffusion, we observed 10 statistically significant relationships. We observed a positive and statistically significant relationship between four measures of CI implementation—data use, root cause analysis, initiating one cycle, and aim statement—and the diffusion of CI. Three of these four are CI processes that often occur before disciplined inquiry cycles. Therefore, the CI practices that are easiest to diffuse might be the

[20] The multilevel model has years nested within schools, and schools within NSI, and it incorporates all grant years for which data are available. It includes cohort, late-entry status, outcome area, and grant year as controls. We estimated 60 models between the 15 measures of implementation and four measures of diffusion/school climate. Results for the models are found in Appendix Exhibit F6.

types of activities that can be completed without conducting complete disciplined inquiry cycles.

Among the 30 models we estimated for climate, we found two statistically significant relationships between a measure of implementation and a change in climate. We can conclude, therefore, that there was not a substantial relationship between the implementation of CI and changes in schoolwide climate. As mentioned above, school-level shifts may not have been expected if NSI activities were focused on a specific grade level or content area.

RQ 8. To What Extent Do Schools Sustain CI After Foundation Funding Ends, and What School-Level Characteristics Are Associated With Sustainability?

In addition to fostering well-functioning CI teams in participating schools, the initiative had a longer term goal: to transform the school culture and organization to generate long-term change in outcomes for students. Thus, the foundation hoped that participating schools would continue to engage in CI, sustain CI teams, and continue to implement effective practices tested through inquiry cycles, even after direct support ended.

To address sustainability, we administered a brief survey in spring 2025 to school leaders in NSI that no longer received direct support from the Gates Foundation (either through their original grant or through a no-cost extension). This sample included 13 NSI. We also conducted interviews with staff from six case study schools across three networks that were no longer receiving support from the Gates Foundation in spring 2025. See Box 14 for examples of sustainability from the case study schools.

We found that most schools that responded to the survey maintained their teams, and many maintained the CI processes that had been recommended by their NSI. As shown in Exhibit 29, **50% of schools said they maintained their team in the postfunding period.** The team continued to meet, although some had different responsibilities. Approximately **40% of schools also said they continued to use the approach to CI** that the NSI introduced to them. Additional schools reported continuing to use the approach but with modifications that made it easier to use.

BOX 14. EXAMPLES OF SUSTAINABILITY FROM THE CASE STUDY SCHOOLS

The evaluation team conducted case study interviews with staff from six schools that participated in NSI after support from the Gates Foundation had ended. These interviews were intended to shed light on the ways in which schools and teams continued their NSI work, as well as any facilitators or barriers to doing so.

School 1 (9th-grade on track): This school had a relationship with the intermediary organization that ran its NSI that preceded its involvement in the initiative, and the relationship persisted once grant funding ceased. The school continued to use the tools and frameworks that the NSI used to engage in CI during the grant period, and the school has a proactive approach to onboard new teachers to these frameworks when they join the school. Interviewees also said the change ideas tested through the process have been incorporated into the school's routines.

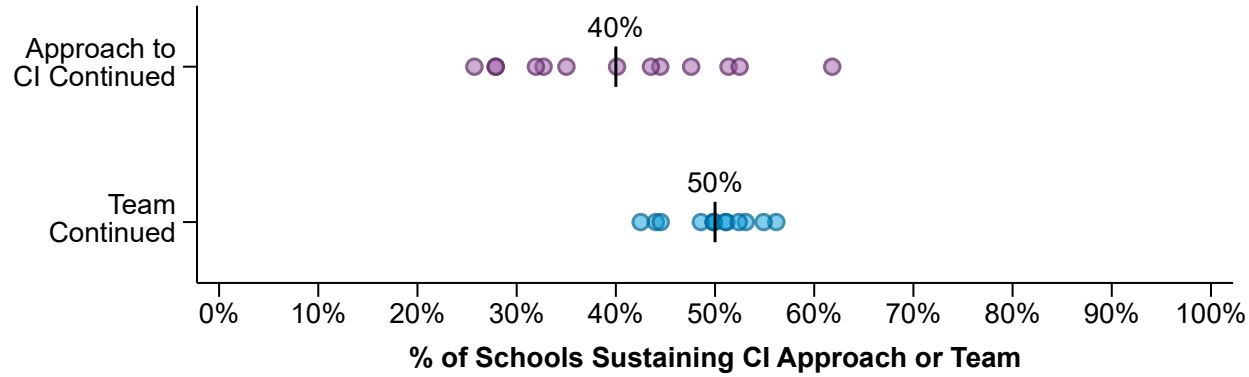
School 2 (9th-grade on track): This school has struggled to sustain its CI work due to funding constraints. The school shifted responsibility for its CI work from the CI team to individual counselors in Grant Year 5. The individual counselors continued to use CI-type practices on their own after the grant ended, but they expressed uncertainty about being able to do so moving forward because of funding constraints.

School 3 (WMPS): The team formed for the NSI continued to meet, implement change ideas, and leverage practices established in previous school years. The team reported maintaining consistent meeting routines and using data to guide decision-making. With the conclusion of the NSI grant, the team transitioned away from the NSI-created dashboard to monitor progress and toward dashboard created by the California Student Aid Commission and its own internal data systems.

School 4 (8th-grade on track): The individual who had sole responsibility for conducting CI work in their school during the NSI grant period transitioned to a new school since the grant ended. They brought their CI practices, frameworks, and tools with them to their new school. They reported that their new school's administrators and teachers were supportive of the CI work, and they trained new teachers in the school on how to use some of the CI protocols and practices tested in the original school.

Source. School case studies from 2024–25.

Exhibit 29. Percentage of Schools That Reported Continuing Their CI Team and CI Approach After Funding Ended, by NSI



Source. School leader (sustainability) survey for 2024–25.

Note. The number of NSI equals 13. The number of schools for "Approach to CI Continued" equals 90. The number of schools for "Team Continued" equals 94. The analysis is based on NSI that conducted cycles in both Grant Year 3 and 5. The percent complete for Grant Year 3 and the trend from Grant Years 3 to 5 for each NSI was estimated based on a multilevel model with time points nested in schools nested in NSI, and a random intercept at the NSI level for the percent at Grant Year 3 and a random slope for the trend from Grant Years 3 to 5. The plotted values are empirical Bayes estimates based on the model.

Facilitators to Sustainability

The survey asked what helped teams continue their work. The most common responses included having **key staff in place (84%)**, followed by **administrator stability (62%), staff buy-in (57%)**, and having **systems to document CI processes (51%).** These results mirror those in RQ 6, which showed that team stability was positively associated with several factors of CI implementation.[21]

Steps Taken to Sustain Their Work

The survey also asked leaders to identify any support they had put into place to help their team continue their work, including hiring new staff, shifting staff roles, altering teacher workloads, changing the school schedule, changing curriculum, providing targeted professional development or coaching, providing educator stipends, and/or providing time for staff to meet during or after school. We found that, on average, schools employed 3.5 of these strategies. **Most often, survey respondents reported providing targeted professional development (53%), changing staff roles to accommodate new responsibilities (44%), and providing time for staff to meet during (40%) or after the school day (37%).**

[21] Additional findings from these analyses can be found in Appendix Exhibit E18 and F8.

These results show that many schools maintained their teams and CI processes after the grant period ended, although many did not. The survey had a relatively low response rate (only 94 of a potential 332 schools responded to the question about teams), and our analyses of who responded indicate that respondents had higher levels of implementation in Grant Year 5 than did nonrespondents.

Relationship Between School-Level Conditions and Sustainability

We found little evidence of meaningful relationships between school-level conditions in Grant Year 5 and sustained implementation after Grant Year 5. We conducted 50 regressions examining how school-level implementation and enabling conditions were related to postgrant sustainability. Of these 50 regressions, only three were significant. Given the small number of significant findings, we encourage caution in interpretation. The two positive findings seem plausible—**schools that provided at least 5 hours of planning time per week were 27 percentage points more likely to sustain their team in the postgrant period.** We also found that an **increase in one cycle was associated with an 8-percentage point increase in the likelihood that a school would sustain its approach to CI,** but the Equity–Agency measure was negatively associated with schools' sustaining their approach.[22]

Summary

Overall, the NSI initiative supported widespread adoption of some core CI practices, but implementation varied substantially across NSI and across participating schools. Although all NSI emphasized inquiry cycles, the NSI approach to CI differed across NSI, and many cycles were incomplete or lacked full documentation (RQ 1). Most schools implemented some elements related to the core parameters of CI—such as root cause analysis, aim statements, and theories of practice improvement—but the depth and consistency of implementation varied widely across NSI (RQ 2).

School CI teams generated and tested change ideas, and the focus of these ideas varied considerably depending on the outcome area that the NSI were focused on (RQ 3). Attention to equity, however—particularly agency (student voice) and instruction that engages identity—was limited across NSI (RQ 4). Over time, some schools demonstrated improvement in CI practices. These improvements varied across NSI and may have been tied to shifts in NSI's approaches to the work (RQ 5).

[22] Additional findings from these analyses can be found in Appendix Exhibit F7.

Key enabling conditions—including team stability, principal support, planning time, meeting frequency, and school-level supports—were positively associated with stronger implementation (RQ 6). In terms of spread within a school or beyond, CI practices that are easiest to spread may be those that can be completed without conducting an inquiry cycle (e.g., root cause analysis) (RQ7). Sustainability also varied. Even though nearly half of schools reported maintaining CI teams after grant funding ended and continuing to use CI approaches, schools within the same NSI differed considerably in sustaining practices, suggesting that school capacity and interest were critical drivers of sustainability (RQ 8).

These findings suggest that while networked CI can be scaled and sustained, future efforts should prioritize addressing factors driving variation in implementation and sustainability, strengthening mechanisms for generating and refining change ideas, and promoting deeper integration of dimensions of equity. For the field, the results underscore the importance of robust documentation of CI work, ongoing professional development to support both CI practices and the interventions being tested, and leadership support to maintain and spread effective practices. Future research should explore strategies to enhance implementation of CI, investigate the mechanisms behind sustainability, and examine the long-term effects of CI on student outcomes, particularly for historically underserved groups.

References

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Harvard Education Press.

Carnegie Foundation for the Advancement of Teaching. (2025). *The six core principles of improvement*. https://www.carnegiefoundation.org/six-core-principles-of-improvement/

Dee, T. S. (2024). *Understanding the promise and reality of continuous improvement in US public schools.* Hoover Institution, Stanford University, 2024. https://www.hoover.org/research/understanding-promise-and-reality-continuous-improvement-us-public-schools

Feygin, A., Nolan, L., Hickling, A., & Friedman, L. (2020). *Evidence for networked improvement communities: A systematic review of the literature*. American Institutes for Research.

Gallagher, H. A., Cottingham, B. W., & O'Meara, K. (2022). *Generating traction with continuous improvement: Lessons from two learning networks* [Report]. Policy Analysis for California Education. https://edpolicyinca.org/publications/generating-traction-with-continuous-improvement

Garet, M. S., Mitrano, S., Eisner, R., Kochanek, J. R., Jones, K. T., Ibis, M., & Estrada, S. (2021). *Continuous improvement in education settings: A literature review.* American Institutes for Research.

Garet, M. S., Eisner, R. C., Farmer, M. J., Blair, D., Wrabel, S. L., Berglund, T., Schweig, J. & Bush-Mecenas, S. (2026). *Evaluation of the networks for school improvement initiative*: *Networks, coaching, and the implementation of continuous improvement in schools.* American Institutes for Research.

Gutiérrez, R. (2007). Context matters: Equity, success, and the future of mathematics education. In T. Lamberg & L. R. Wiest (Eds.), *Proceedings of the 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1– 18). University of Nevada, Reno.

Gutiérrez, R. (2012). Context matters: How should we conceptualize equity in mathematics education? In B. Herbel-Eisenmann, J. Choppin, D. Wagner, & D. Pimm (Eds.), *Equity in discourse for mathematics education: Theories, practices, and policies* (Mathematics Education Library, Vol. 55, pp. 17–33). Springer.

Kinlaw, A., Snyder, M., Chu, E., Lau, M., Lee, S., & Nagarajan, P. (2020). *Managing for change: Achieving systemic reform through the effective implementation of networks*. Center for Public Research and Leadership, Columbia University.

Peabody Journal of Education. (2025). *Volume 100, issue 1*. Taylor & Francis. https://www.tandfonline.com/toc/hpje20/100/1

Russell, J. L., Bryk, A. S., Peurach, D., Sherer, D., Khachatryan, E., LeMahieu, P. G., Sherer, J. Z., & Hannan, M. (2019). *The social structure of networked improvement communities: Cultivating the emergence of a scientific professional learning community* [Paper presentation]. American Educational Research Association Annual Meeting, Toronto, ON, Canada. https://eric.ed.gov/?id=ED616986

Taylor, M. J., McNicholas, C., Nicolay, C., Darzi, A., Bell, D., & Reed, J. E. (2014). Systematic review of the application of the plan–do–study–act method to improve quality in healthcare. *BMJ Quality & Safety*, *23*(4), 290–298. https://qualitysafety.bmj.com/content/23/4/290.short

About the American Institutes for Research®

Established in 1946, the American Institutes for Research® (AIR®) is a nonpartisan, not-for-profit institution that conducts behavioral and social science research and delivers technical assistance both domestically and internationally in the areas of health, education, and the workforce. With headquarters in Arlington, Virginia, AIR has offices across the U.S. and abroad. For more information, visit www.air.org.

AIR® Headquarters
1400 Crystal Drive, 10th Floor
Arlington, VA 22202-3289
+1.202.403.5000 | **AIR.ORG**

29963_04/26