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Evaluation of the Networks for School Improvement Initiative

Impacts on Student Outcomes

INTERIM REPORT

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Acknowledgements

We are grateful to the many people who contributed to this study and report. We especially thank the NSI intermediaries, principals, and educators who participated in the study, along with the state and local education agency staff who provided the administrative data for the analysis.[1] We also thank the Bill & Melinda Gates Foundation for sponsoring the study and the many foundation staff who provided valuable information about the NSI work and feedback on the study's design, including Vivian Mihalakis, Darryl Hill, Susan Fairchild, and Katherine Martin. The foundation's project officer, Andy Sokatch, provided insightful guidance and thought partnership throughout the study. The study also benefited from the support of the evaluation partners, AIR and RAND, as well as Double Line and Abt Global.

A large team of staff from Mathematica helped obtain research approval from state and local education agencies for the study. They included Annie Buonaspina, Katherine Campbell, Megan Davis, Jessie Mazeika, Elizabeth Mugo, Veronica Sotelo Munoz, Catherine Pratt, Dana Robinson, and Ramya Tallapragada. A team of programmers from Mathematica, led by Emma Ernst, Matthew Jacobus, and Alma Vigil, cleaned and analyzed the administrative data for the study. They included Reggie Gilliard, Patrick Lavallee, Daniel Mangoubi, Hena Matthias, Brandan Pierce, Hannah Strong, Jules Tucher, and Tara Wildszewski. Drew McDermott, Brianna Pollari, and Hayley Tymeson from Education Analytics cleaned and analyzed administrative data in California. Mathematica researchers John Deke, Naihobe Gonzalez, and Leah Shiferaw made critical contributions to the study design and the analysis.

Phillip Gleason provided expert reviews of the report. Jill Constantine, Alex Resch, and Alison Wellington from Mathematica; Kathy Francis and Chaya Jones from Redstone Strategy Group; and L'Heureux Lewis-McCoy from New York University provided helpful review and guidance throughout the project. Maria Myers and Jennifer Brown edited the report; Brigitte Tran created graphics; and Jackie Drummond prepared the report for publication. Jordan Maurand and Michele Carringer made valuable project management contributions.

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Abstract

The Bill & Melinda Gates Foundation established the Networks for School Improvement (NSI) initiative to support networks of schools in using continuous improvement (CI) to improve outcomes for students who are Black, Latino, or experiencing poverty. The foundation sponsored an evaluation to learn about the formation of school networks, the use of CI in schools, and the impact of these efforts on student outcomes. This report describes the impact of the NSI on student outcomes after schools' second year of participation by comparing students in NSI schools to students in similar schools that did not participate in the initiative. These findings are preliminary because they are based on school years affected by the COVID-19 pandemic and because the foundation initially expected the NSI to achieve full impact after three years.

After schools' second year of participation in the NSI, the impacts on student outcomes were mixed. The 8th-grade on-track NSI—which primarily focused on improving teachers' math or English language arts (ELA) instruction—did not impact the academic or behavioral outcomes the initiative targeted. The 9th-grade on-track NSI had a positive impact on three of the five targeted outcomes—GPA, core course pass rate, and credit completion. These NSI focused on a mix of strategies such as identifying students in need of academic support, developing relationships with students, and providing academic advising or tutoring. These findings are based on a matched comparison analysis but are consistent with the findings from a more rigorous randomized controlled design for a subset of the 8th- and 9th-grade on-track NSI. The well-matched postsecondary enrollment NSI improved Free Application for Federal Student Aid (FAFSA) completion rates but did not have a statistically significant impact on college enrollment rates. These NSI focused on strategies to help students navigate the college application and financial aid process.

The COVID-19 pandemic potentially played a role in the diverging results for the 8th-grade on-track and 9th-grade on-track NSI. The second year of participation for most NSI schools occurred during the 2020-21 or 2021-22 school years that were affected by the pandemic. The 8th-grade on-track NSI may have had difficulty improving instruction as teachers adjusted to teaching virtually and responded to students' social and emotional needs during the pandemic. However, the 9th-grade on-track NSI provided supports and connections for students that may have been missing for other students during the pandemic.

The patterns of impacts over time also differed for the 8th-grade on-track and 9th-grade on-track NSI. In schools' first year of participation, the 8th-grade on-track NSI had a positive impact on GPA, math and ELA course pass rates, and attendance rates. These impacts were comparable in size to those of the 9th-grade on-track NSI, but they did not persist. The year 1 impacts appear to be driven by schools that joined the NSI before the COVID-19 pandemic and whose year 1 outcomes were not affected by the pandemic. In contrast, the impacts of the 9th-grade on-track NSI on course-related outcomes appeared to increase from year 1 to year 2.

The next report will describe impacts of the NSI in schools' third and fourth years of participation, after the height of the COVID-19 pandemic, and examine which aspects of NSI implementation might be related to impacts on students. Although the findings in this report suggest the potential for the NSI approach to improve some student outcomes, the next report will help the field better understand what aspects of the NSI initiative may influence its effectiveness.

The Networks for School Improvement Initiative

The Bill & Melinda Gates Foundation established the Networks for School Improvement (NSI) to increase the proportion of Black students, Latino students, and students experiencing poverty who are on track for high school graduation and college enrollment.[2] The initiative supports networks of schools in using continuous improvement (CI) methods to identify and test strategies designed to improve teachers' practices and student supports. Each NSI consists of an intermediary organization leading a network of about 20 schools (ranging from fewer than 10 to more than 50 schools) and supporting teams of school staff in conducting CI. The intermediaries partnered with almost 800 schools across approximately 150 districts and charter networks to identify, test, refine, and scale strategies to improve students' academic and behavioral outcomes.

The foundation funded three cohorts of five-year grants between 2018 and 2020, totaling more than $300 million (Exhibit 1).[3] Most intermediaries leading the NSI are nonprofit education organizations and university-affiliated centers; three are school districts; and one is a charter school network (see Appendix C for a full list of NSI grantees).

Exhibit 1. NSI grant years by cohort

Cohort	2018-19 school year	2019-20 school year	2020-21 school year	2021-22 school year	2022-23 school year
1	Year 1	Year 2	Year 3	Year 4	Year 5
1B/2		Year 1	Year 2	Year 3	Year 4
3			Year 1	Year 2	Year 3

Note: The Cohort 1B and 2 grants were awarded in separate groups but started work at nearly the same time. The evaluation treats these two sets of grants as a single cohort.

Each NSI focused its grant on improving student outcomes in one or more of the following areas:

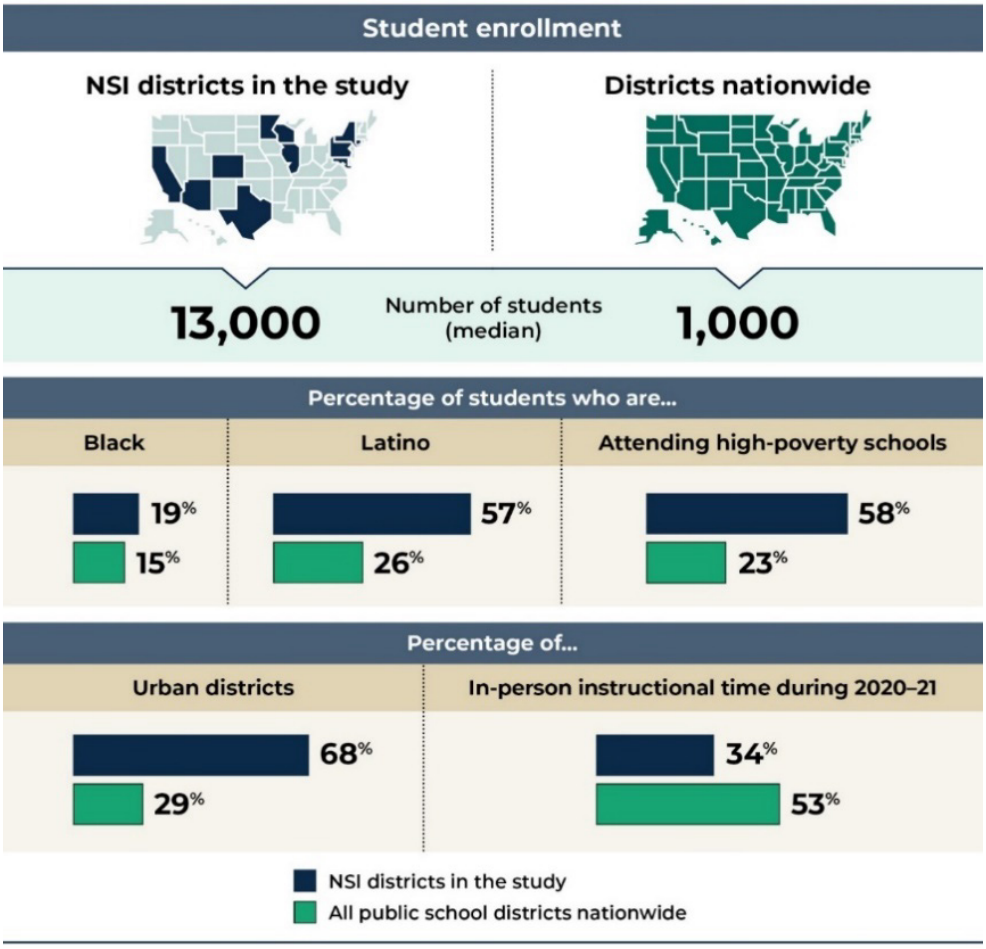
- **8th- or 9th-grade on track:** The proportion of 8th- or 9th-grade students who meet a set of academic and behavioral outcomes related to high school graduation and college enrollment
- **College-ready on track:** The proportion of 11th- and 12th-grade students who are on track academically to enroll in a college with a graduation rate of at least 50 percent
- **Well-matched postsecondary enrollment:** The proportion of 12th-grade students who complete the steps needed to enroll in a college with a graduation rate of at least 50 percent

The foundation also characterized the NSI into one of three "entry points" based on the primary focus of their CI activities (Exhibit C.1): instructional (working to improve the quality of instruction within classrooms), early warning and response (working to create more supportive and connected school environments), and well-matched postsecondary (working to support postsecondary application, enrollment, and persistence). Entry points are related to but not the same as outcome areas. For example, an NSI that aimed to improve college-ready on-track outcomes might use an instructional entry point or early warning and response entry point to achieve that outcome.

The NSI partnered with large, mostly urban districts that served a higher proportion of students who are Black, Latino, or experiencing poverty compared to districts nationally (Exhibit 2). The median enrollment of districts with NSI schools was 13,000 students compared to 1,000 for districts nationally. In addition, the

percentage of Latino students and students attending high-poverty schools was more than double in the NSI districts than districts nationally.

Exhibit 2. Characteristics of districts with NSI schools in the evaluation compared to districts nationwide



Source: U.S. Department of Education Common Core of Data for the 2017-18 school year; Return 2 Learn Tracker for the 2020-21 school year.

Note: The exhibit shows average district characteristics weighted by the number of students in NSI schools (NSI districts) or by the number of students in the district (districts nationwide). High-poverty schools are defined as schools where at least 75 percent of students are eligible for free or reduced-price lunch.

The COVID-19 pandemic affected the work of all three cohorts of NSI grants. The first two NSI cohorts were ongoing at the onset of the pandemic in spring 2020, and the pandemic delayed the start of Cohort 3 in fall 2020 by six to nine months. After shifting to virtual instruction in spring 2020, NSI districts provided in-person instruction for about a third of the 2020-21 school year, on average. The NSI adapted their grant activities to help educators respond to pandemic-related disruptions and the challenges of virtual instruction. The disruptions to schooling during this period contributed to lost learning opportunities and larger achievement gaps (Goldhaber et al. 2022; Jack et al. 2023; Fahle et al. 2023). Although schools returned to in-person instruction in the 2021-22 school year, they continued to face challenges with chronic absenteeism, student mental health, and academic recovery (Dee 2024; Liu et al. 2021; Cattan et al. 2023).

The NSI Evaluation

The foundation sponsored an evaluation to build evidence on the NSI approach. Despite growing efforts to support school networks in using CI to test and refine solutions to educational challenges, there is limited evidence on their implementation and impact (Feygin et al. 2020). The NSI initiative provides a valuable opportunity to address these evidence gaps and learn about the formation of school networks, the use of CI in schools, and the impact of these efforts on student outcomes. The evaluation addresses three main research questions:

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

Each research question is addressed by a different evaluation partner: RAND leads work on Research Question 1, the American Institutes for Research (AIR) leads work on Research Question 2, and Mathematica leads work on Research Question 3. The first set of evaluation reports (interim reports) describe implementation of the NSI through the 2022-23 school year (Research Questions 1 and 2) and impacts on student outcomes through the 2021-22 school year (Research Question 3). A second set of reports (final reports) in 2026 will describe two more school years of NSI implementation and impacts. This report and the accompanying appendices present findings on Research Question 3.

The findings in this report are preliminary because the analysis is based on schools' second year of participation, whereas the foundation initially expected the NSI to achieve full impact after three years. The foundation assumed that three years were needed for NSI to develop connections among the schools in their networks and to test and refine solutions through CI. In addition, the findings are based on school years heavily affected by the COVID-19 pandemic.

The NSI Initiative's Conceptual Framework

The foundation outlined a broad structure for the NSI while also providing flexibility for intermediaries to adapt their approach. The evaluation team developed a conceptual framework to describe the key features of the NSI approach and guide the evaluation (Exhibit 3).

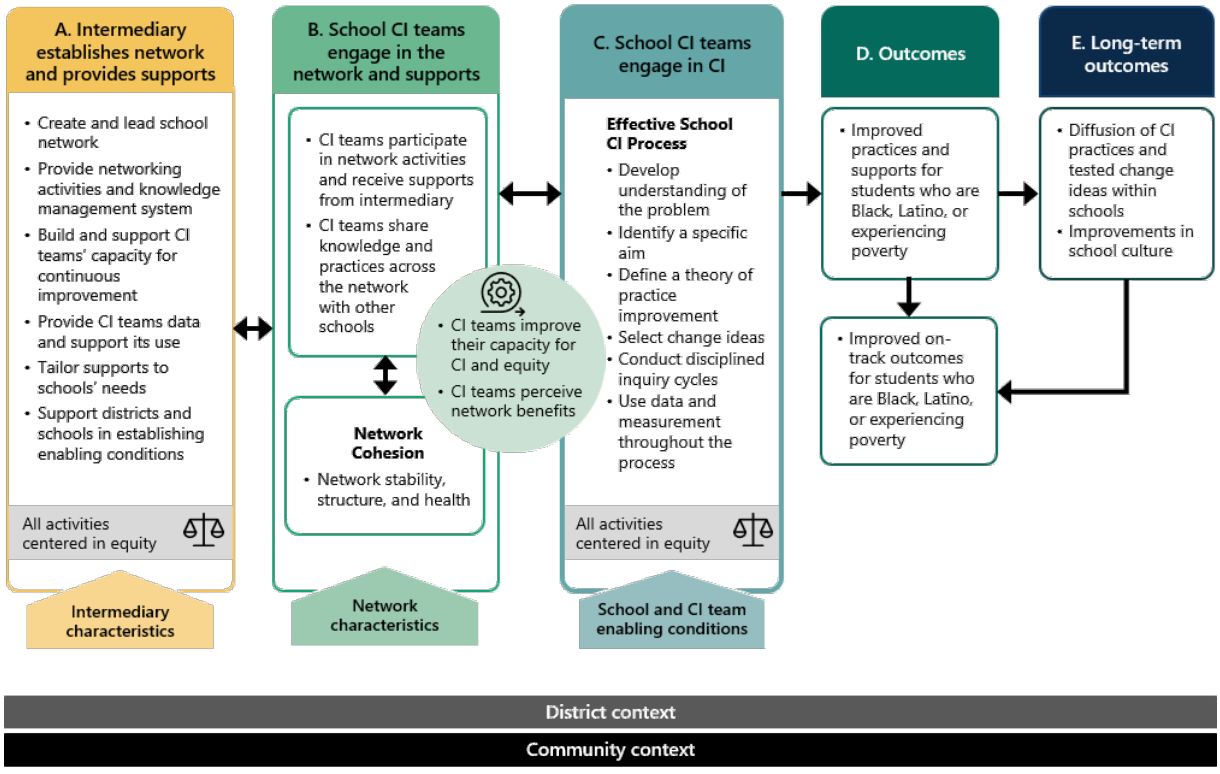
According to this framework, intermediaries create and support networks of schools in using CI to improve practices related to their outcome area (Exhibit 3, Box A). The NSI initiative—at the intermediary, network, and school levels—centers equity to ensure schools are working to improve outcomes for students who are Black, Latino, or experiencing poverty.[4] Schools in the network form teams of teachers, counselors, administrators, and other staff (called CI teams) to participate in the NSI (Exhibit 3, Box B). Intermediaries provide coaching and professional learning to school CI teams to develop their capacity to engage in meaningful CI processes. Intermediaries also provide additional supports to the CI teams that generally include the data to understand the challenge, a knowledge management system to document what CI teams learn, and network convenings to strengthen connections between teams and share learning across the network.

The foundation expects school CI teams to engage in CI processes that included six core parameters (Exhibit 3, Box C). These core parameters mirror the six core principles of CI outlined by the Carnegie Foundation for the Advancement of Teaching (Bryk et al. 2015). The NSI core parameters focus on developing an understanding of the problem and its root causes; identifying a specific goal or aim for addressing the problem; describing the key factors and conditions needed to accomplish the aim (the theory of practice improvement); selecting specific strategies—called change ideas—to achieve the aim; and using disciplined inquiry cycles and data to test and refine the change ideas.

Schools' participation in the NSI and their use of CI processes are expected to improve educators' practices and student supports, and ultimately improve on-track outcomes for students who are Black, Latino, or experiencing poverty (Exhibit 3, Box D). In the long term, effective strategies identified by CI teams can be shared with other educators in participating schools and more broadly across a district or charter network (Exhibit 3, Box E). Building educators' capacity to develop strategies that address ongoing challenges is expected to improve the school culture.

The analysis in this report focuses on Box D, specifically the impact of the NSI on on-track outcomes for Black students, Latino students, and students experiencing poverty.

Exhibit 3. NSI conceptual framework



Study sample, design, and data

Which NSI and schools were included in the analysis?

- This report describes impacts for 22 of the 29 NSI that focused on the 8th- or 9th-grade on-track or well-matched postsecondary enrollment outcome areas (Exhibit 4). The analysis includes the NSI for which we could measure impacts on student outcomes by comparing NSI schools to similar nonparticipating schools in the same district (for 8th- and 9th-grade on-track NSI) or in different districts (for well-matched postsecondary NSI).[5] We excluded the five college-ready on-track NSI from this report because there are not enough NSI schools that have participated for two years.
- The analysis included all of the schools that joined these 22 NSI except for (1) NSI schools with fewer than 16 students in the focal grade and (2) NSI schools that were charter schools (due to difficulty obtaining data for comparison charter schools). The 8th-grade on-track analysis included 136 NSI schools, the 9th-grade on-track analysis included 122 NSI schools, and the well-matched postsecondary analysis included 143 schools.

Exhibit 4. Intermediaries included in this report

8th-grade on track	9th-grade on track	Well-matched postsecondary enrollment
• American Institutes for Research (3) • Baltimore City Public Schools (1) • Bank Street College of Education (3) • City Year* (2) • High Tech High Graduate School of Education (3) • New York City Department of Education* (2) • Partners in School Innovation (2) • Teach Plus (3) • Teaching Matters (3)	• Baltimore City Public Schools (1,3) • CORE (1,3) • Network for College Success (1,3) • New Visions for Public Schools (1,3)	• Access ASU (2) • High Tech High Graduate School of Education (1) • New Tech Network (1B) • The Commit Partnership (1B)

Note: The number in parentheses shows the cohort for each NSI grant an intermediary received. Each NSI grant corresponds to one NSI except for Partners in School Innovation, which created four NSI (three included in this report). Baltimore City Public Schools' Cohort 1 NSI focused on 8th- and 9th-grade on track, so it appears twice in the exhibit.

* NSI included in the analysis for Research Question 3 but not included in the analysis for Research Questions 1 or 2.

What research questions did the analysis address?

The analysis addressed the following research questions:

1. What is the impact of the NSI on student outcomes?
2. What is the impact of the NSI on outcomes for students who are Black, Latino, or experiencing poverty?
3. How did the impact of the NSI change over time?

How did the study measure the impact of the NSI on student outcomes?

- To measure the impact of the 8th- and 9th-grade on-track NSI, we compared the outcomes for NSI schools to outcomes for similar schools in the same district. We matched NSI schools to comparison schools based on student characteristics and outcomes before the NSI started (a within-district matched comparison). We also used a more rigorous randomized controlled design for the 8th- and 9th-grade NSI in Cohort 3. This approach randomly assigned interested schools within the same districts to either participate in the NSI immediately or to delay participation for three years. To measure impacts, we compared outcomes for students in the NSI schools and comparison schools. We included the Cohort 3 NSI in both the main matched comparison analysis and the randomized controlled analysis.
- To measure the impact of the well-matched postsecondary enrollment NSI, we compared outcomes for students in NSI schools to students in similar schools in different districts that had similar characteristics and

outcomes as the NSI districts before the grant. We used this approach because most of these NSI worked with all or almost all of the schools in districts, so within-district comparisons were not feasible. NSI schools and districts were matched to nonparticipating schools and districts in the same state based on their characteristics and outcomes before the grant (a between-district matched comparison).

- This report focuses on impacts after schools' second year of participating in the NSI, which is the latest year for which a sufficient sample was available for measuring impacts. For most NSI schools, the second year of participation is the second year of the NSI grant. The grant cohorts started at different times; Exhibit 5 shows the relevant school years for measuring two-year impacts for each cohort.
- Some schools joined an existing NSI after the first year of the grant. For these schools, the two-year impacts were based on different school years than shown in Exhibit 5. For example, if a Cohort 1 school joined an NSI in the 2019-20 school year, the two-year impacts were based on the 2020-21 school year (the second grant year).

Exhibit 5. School years and NSI cohorts included in this report

Cohort	2018-19 school year	2019-20 school year	2020-21 school year	2021-22 school year
Cohort 1	Year 1 impacts	Year 2 impacts	Year 3 impacts	
Cohorts 1B/2		Year 1 impacts	Year 2 impacts	Year 3 impacts
Cohort 3			Year 1 impacts	Year 2 impacts

Note: The table shows the timing of impacts for schools starting in the first grant year for each cohort. The main results in this report are based on the years in the yellow cells. Results are also reported for years in the gray cells.

What data were used for the analysis?

- School rosters collected from intermediaries were used to identify schools that participated in the NSI.
- Administrative data from districts and state education agencies were used to measure outcomes and baseline characteristics for districts, schools, and students. We supplemented these data with publicly available school-level data from the U.S. Department of Education.
- The Return 2 Learn Tracker from the American Enterprise Institute was used to measure the percentage of time students received in-person instruction during the 2020-21 school year for each district.

More details on the study sample, design, and data are provided in Appendix A.

Impacts of the NSI on Student Outcomes

This section describes the impacts of the 8th- and 9th-grade on-track and well-matched postsecondary NSI on student outcomes. First, we describe impacts of the NSI after schools' second year of participation. Then we present impacts for the groups of students prioritized by the NSI grants—students who are Black, Latino, or experiencing poverty. We then describe changes in impacts between schools' first and second years of participation, and the variation in impacts across NSI. Appendix B includes more details on the findings and additional results.

Impacts of the NSI after schools' second year of participation

8th-grade on-track NSI

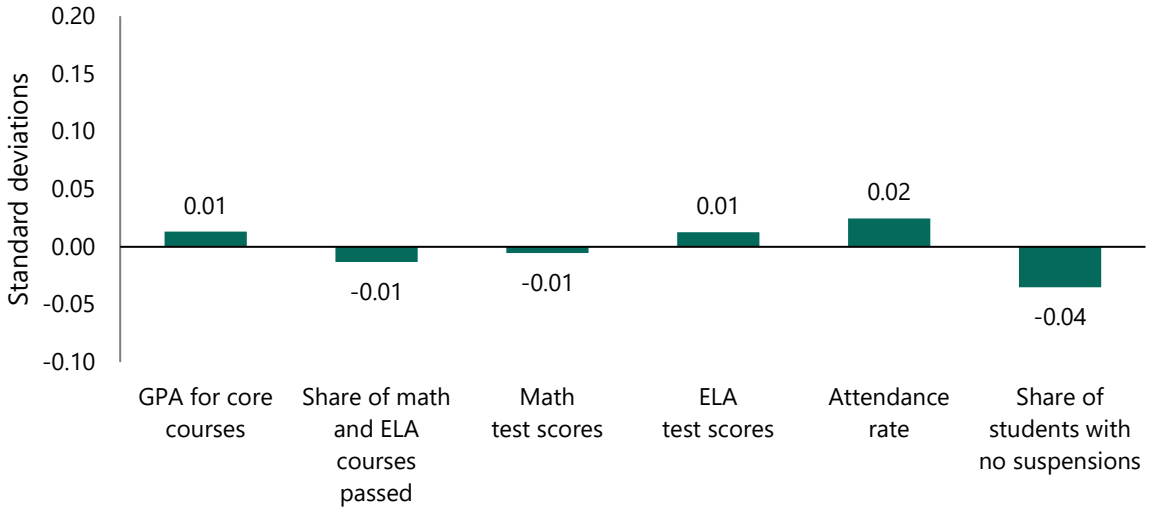
This report describes impacts for 11 of the 16 NSI focused on 8th-grade on track. The foundation focused these NSI on improving six academic and behavioral outcomes that indicate whether 8th-grade students are on track for high school graduation: GPA, course pass rate, math and English language arts (ELA) test scores, attendance rate, and suspension rate (Allensworth et al. 2014, 2018). Although the NSI initiative aimed to improve all six outcomes—to increase the share of students who were on track—most of these

NSI focused their efforts on one or two outcomes. All 11 NSI focused primarily on academic outcomes, and only three of the NSI also focused on behavioral outcomes (see Appendix B, Exhibit B.1). Consistent with the emphasis on academic outcomes, all but one of these NSI focused their CI work on improving teachers' instruction in math, ELA, or both.

The 8th-grade on-track NSI did not impact the targeted student outcomes after schools' second year of participation. Exhibit 6 shows the impacts of the 8th-grade on-track NSI on the six targeted outcomes.[6] The bars in Exhibit 6 represent the difference between students in NSI schools and comparison schools for each outcome. Although there were small differences in outcomes for students in NSI schools and comparison schools, these differences were not statistically significant. These findings are based on the matched comparison analysis and are consistent with the findings from the more rigorous random assignment analysis for the five NSI in Cohort 3 (see Exhibit B.4).[7]

The NSI did not increase the proportion of 8th-grade students who were on track after schools' second year of participation. The foundation set thresholds for each outcome that defined whether a student was on track (for example, earning a 3.0 GPA on core courses and receiving no suspensions) (see Exhibit A.7). In addition to measuring impacts on each outcome separately, we also examined whether the 8th-grade on-track NSI improved the proportion of students who met the on-track thresholds for all outcomes. Consistent with the finding that the NSI did not impact individual outcomes, there was no effect on the proportion meeting the on-track thresholds (see Exhibit B.9). By NSI schools' second year of participation, less than 15 percent of students in NSI schools and comparison schools met all of the on-track thresholds.

Exhibit 6. Impacts of the 8th-grade on-track NSI on students in schools' second year of participation



Source: Administrative student records for the 2017-18 through 2021-22 school years.

Notes: Differences between NSI schools and comparison schools were not statistically significant at the 0.05 level. The sample consisted of 77 to 109 NSI schools, depending on the outcome. Sample sizes differ across outcomes due to issues with data availability during the COVID-19 pandemic. Additionally, students in two districts had the option of taking the 8th-grade end-of-year exam or an Algebra I end-of-course exam. We excluded students who took the Algebra I exam from the analysis of math test scores due to small sample sizes. This reduced the sample of NSI schools for the math analysis if nearly all 8th-grade students in a school took Algebra I. Suspensions refer to out-of-school suspensions.

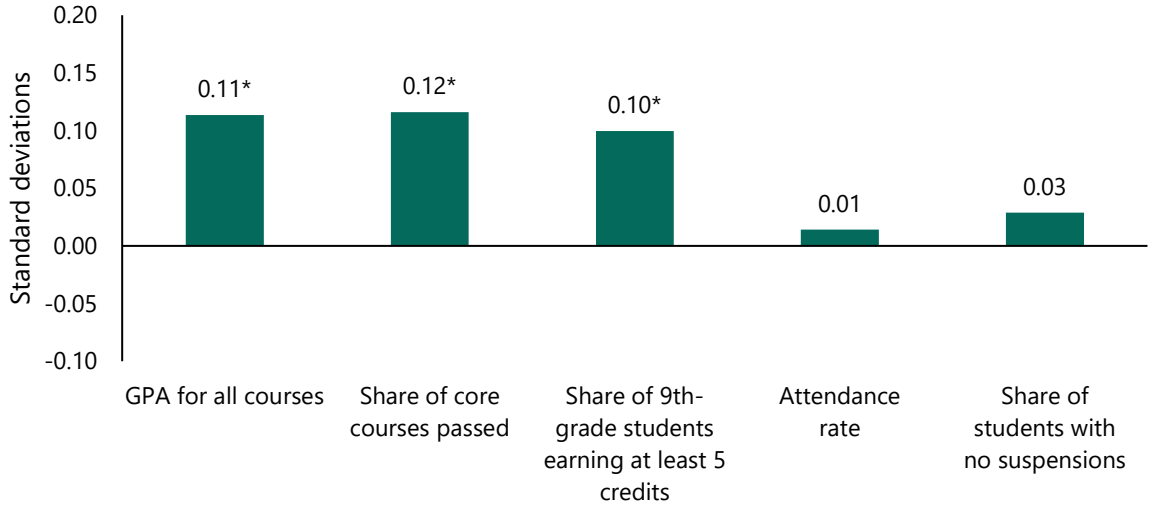
All but one of the 8th-grade on-track NSI in this analysis started in the 2019-20 school year. As a result, most NSI schools' second year of participation was affected by the COVID-19 pandemic (the 2020-21 and 2021-22 school years for most NSI schools; see Exhibit A.11). We discuss how the COVID-19 pandemic might have influenced these findings in the section below that describes changes in impacts over time.

9th-grade on-track NSI

We examined impacts for eight of the 11 NSI focused on 9th-grade on track. The initiative focused these NSI on five academic and behavioral outcomes that indicate whether 9th-grade students were on track to graduate high school and enroll in college: GPA, core course pass rate, credit completion, attendance rate, and suspension rate (Allensworth and Easton 2007; Allensworth et al. 2018). The typical 9th-grade on-track NSI focused on two to three of the outcomes. These NSI had a strong focus on academic outcomes—all of the NSI focused on at least one academic outcome, while only two focused on behavioral outcomes (Exhibit B.2). In contrast to the 8th-grade on-track NSI, most of the 9th-grade on-track NSI focused their CI work on early warning and response systems. These NSI tested change ideas related to building relationships with students, improving classroom culture, and identifying students in need of academic support.

The 9th-grade on-track NSI had a positive impact on three of the five outcomes—GPA, core course pass rate, and credit completion—after schools' second year of participation. The magnitude of these effects were moderate in size, ranging from 0.10 to 0.12 standard deviations (Exhibit 7). The effects were equivalent to a 0.13 point increase in GPA (from 2.34 to 2.47 on a 4.0 scale), a 4 percentage point increase in the share of core courses passed (from 65 to 69 percent), and a 4 percentage point increase in the share of 9th-grade students earning at least five credits (from 83 to 87 percent). The NSI did not impact student attendance rates or the share of students with no suspensions. The impacts on course-related outcomes are consistent with the 9th-grade on-track NSI's focus on academic outcomes.

Exhibit 7. Impacts of the 9th-grade on-track NSI on students in schools' second year of participation



Source: Administrative student records for the 2017-18 through 2021-22 school years.

Notes: The sample consists of 83 to 109 NSI schools, depending on the outcome. Sample sizes differ across outcomes due to issues in data availability during the COVID-19 pandemic. Suspensions refer to out-of-school suspensions.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

These findings are based on the matched comparison analysis and are similar to the impacts measured through the more rigorous random assignment study for the three Cohort 3 NSI (see Exhibit B.5).[8] However, the 9th-grade on-track NSI in the random assignment study also had a moderate impact on attendance rates (equivalent to a 2 percentage point increase in attendance rates from 79 to 81 percent). This positive impact on attendance rates is consistent with the fact that two of the three NSI in the random assignment study focused on improving student attendance (see Exhibit B.2).

The 9th-grade on-track NSI increased the proportion of students who were on track for high school graduation and college enrollment. Similar to 8th-grade on track, the foundation defined a threshold for each 9th-grade on-track outcome to determine whether a student was on track (Exhibit A.7). A 9th-grade student was considered on track if they met all the thresholds. The positive impacts on GPA, course pass rate, and credit completion led to positive impacts on the proportion of students meeting the on-track thresholds for these outcomes. As a result, the NSI increased the proportion of 9th-grade students who met all the on-track thresholds by 2 percentage points (from 23 to 25 percent) (see Exhibit B.10).

In alignment with the initiative's focus on equity, two NSI implemented change ideas related to equitable grading approaches as part of their CI work. These NSI tested change ideas such as allowing students to revise their work or assigning students a score of 50 rather than 0 for missing assignments. The goal was to incorporate considerations of equity into grading policies—recognizing that a range of home and community factors influenced a students' academic performance. Some equitable grading approaches—particularly changes in the lowest score given to students for assignments or assessments—may have contributed to students in NSI schools receiving higher grades than similar students in comparison schools.

To examine whether equitable grading policies impacted the 9th-grade on-track NSI course-related outcomes, we measured impacts when excluding the two NSI that tested equitable grading approaches. The impacts on course-related outcomes remained positive and statistically significant when excluding those NSI (Exhibit B.17).

Well-matched postsecondary enrollment

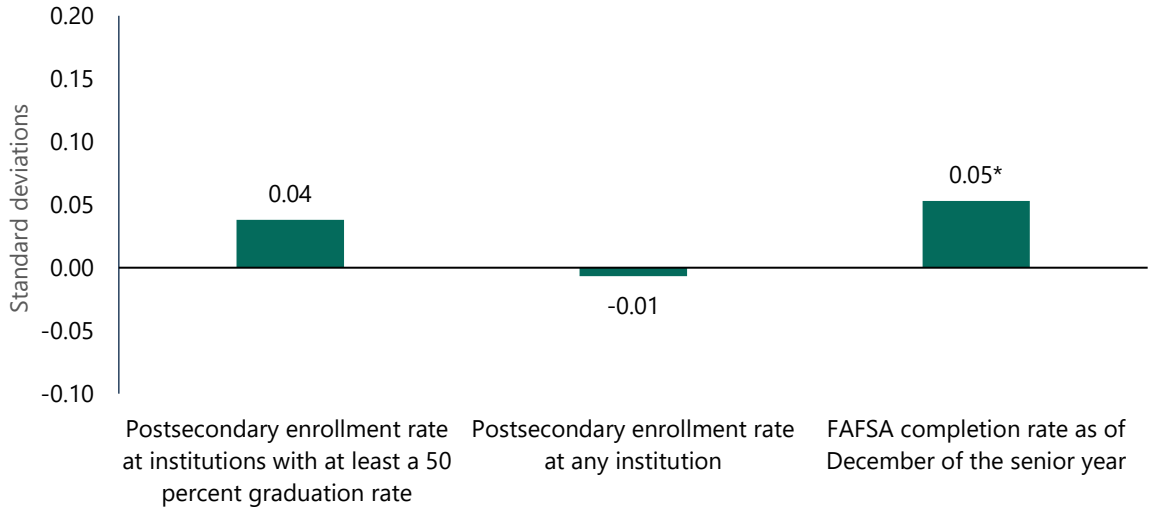
This report describes impacts for four of the five well-matched postsecondary enrollment NSI. The foundation focused these NSI on outcomes related to whether 12th-grade students took the steps needed to enroll in college (took a college entrance exam, completed the Free Application for Federal Student Aid [FAFSA], and submitted applications to at least three colleges) and enrolled in a college that would likely lead to a credential with labor market value (defined by the foundation as enrollment in a college with a graduation rate of at least 50 percent).[9] We describe the impact of the NSI on three of these outcomes—FAFSA completion, college enrollment, and enrollment in a college with at least a 50 percent graduation rate.[10]

All four NSI focused their work on two of these outcomes: completing the FAFSA and applying to at least three colleges (Exhibit B.3). Their CI work tested change ideas such as hosting events to help parents and students complete the FAFSA, providing tools that help students find colleges that are a good fit, and offering individualized support to students who were delayed in submitting the FAFSA or their college applications.

After schools' second year of participation, the well-matched postsecondary enrollment NSI had a positive impact on FAFSA completion (Exhibit 8). The NSI had a small impact on FAFSA completion by December of students' 12th-grade year, equivalent to a 3 percentage point increase in the proportion of students completing the FAFSA (from 32 to 35 percent). We also examined impacts of the NSI on FAFSA completion rates by June of students' 12th-grade year. This allowed us to determine if the NSI had an impact on both early FAFSA completion (by December) and overall FAFSA completion (by June). The NSI had a slightly larger impact on the proportion of students completing the FAFSA by June (Exhibit B.12), equivalent to a 4 percentage point increase in FAFSA completion (from 54 percent to 58 percent).

However, the NSI did not have a statistically significant impact on the proportion of students enrolling in any college or the proportion enrolling in colleges with a graduation rate of at least 50 percent. This suggests that although FAFSA completion is an important step in the college enrollment process for many students, students face additional barriers to college enrollment. We discuss how the COVID-19 pandemic may have influenced these findings in the section below on changes in impacts over time.

Exhibit 8. Impacts of the well-matched postsecondary NSI on students in schools' second year of participation



Source: Administrative student records for the 2014-15 through 2020-21 school years.

Notes: The sample consists of 100 NSI schools for the postsecondary enrollment outcomes and 112 NSI schools for FAFSA completion.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

Impacts of the NSI on students who are Black, Latino, or experiencing poverty

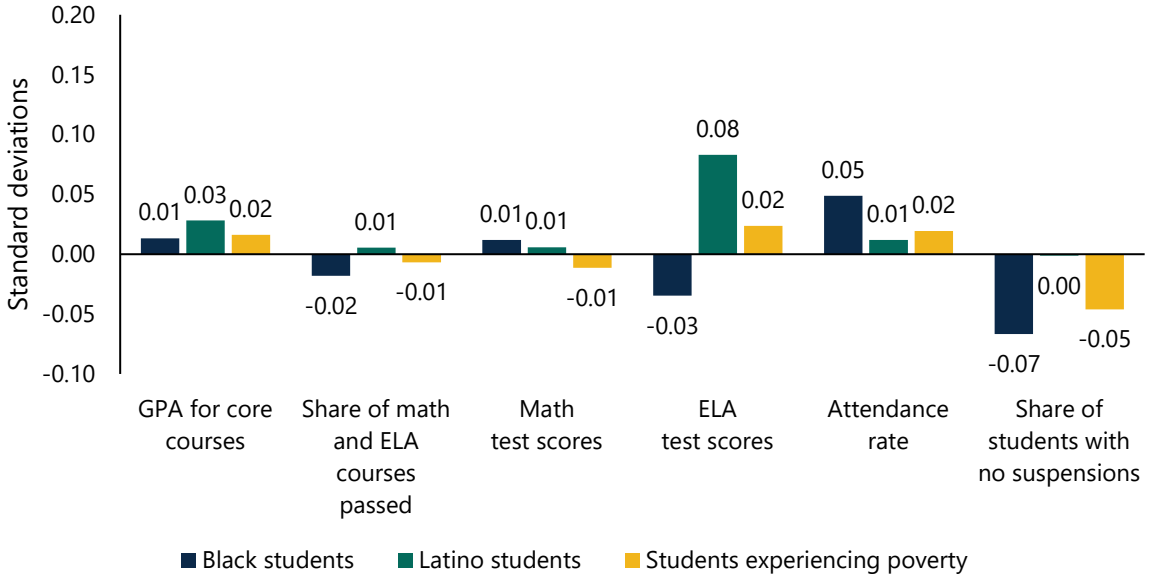
The NSI initiative aimed to improve college readiness and enrollment for students who are Black, Latino, or experiencing poverty. As a result of this focus, the NSI partnered with districts that were more likely to serve these types of students than districts nationally (Exhibit A.6). The 8th-and 9th-grade on-track NSI districts served a mix of Black students (30 percent of students) and Latino students (46 percent of students), while the well-matched postsecondary enrollment NSI districts had a much larger proportion of Latino students (69 percent Latino compared to 13 percent Black students). All the NSI served a high

proportion of students experiencing poverty (approximately 80 percent of students for all three outcome areas) (See Appendix A, Exhibits A.12–A.17 for detailed demographics information by outcome area).

This section describes impacts of the NSI specifically for students who are Black, Latino, or experiencing poverty. To measure the impact of NSI on these groups, the analysis compares the outcomes for each group of students in NSI schools and comparison schools (for example, the outcomes for Black students in NSI schools to Black students in comparison schools).

Similar to the finding for all students, the 8th-grade on-track NSI had no impact on outcomes for students who are Black, Latino, or experiencing poverty. After schools' second year of participation, the impact of the NSI on students who are Black, Latino, or experiencing poverty were similar in size to the impacts on students overall (Exhibit 9). None of the differences in outcomes between NSI schools and comparison schools were statistically significant.

Exhibit 9. Impacts of the 8th-grade on-track NSI on student outcomes in schools' second year of participation, by student group



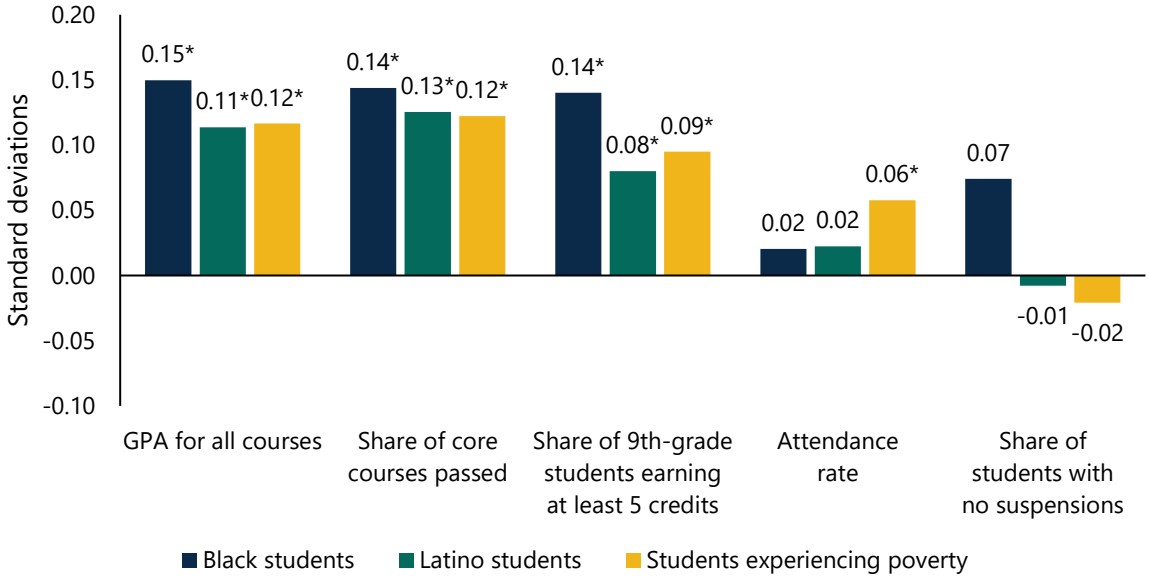
Source: Administrative student records for the 2017-18 through 2021-22 school years.

Notes: Differences between NSI schools and comparison schools were not statistically significant at the 0.05 level. The sample consists of 70 to 104 NSI schools, depending on the outcome. We excluded one NSI from the analysis of students experiencing poverty because the district did not provide data to identify these students.

Similar to the finding for all students, the 9th-grade on-track NSI had positive impacts on GPA, course pass rate, and credit completion for students who are Black, Latino, or experiencing poverty (Exhibit 10). In schools' second year of participation, the impacts of the NSI for students who are Black, Latino, or experiencing poverty were similar in size to the impacts for students overall. For example, the effect of the 9th-grade on-track NSI on Black students was equivalent to a 0.17 point increase in GPA (from 2.01 to 2.18), a 6 percentage point increase in core course pass rates (from 55 to 61 percent), and a 6 percentage point increase in the share of 9th-grade students earning five or more credits (from 76 to 82 percent).

The NSI generally did not have an impact on attendance rates or suspension rates among students who are Black, Latino, or experiencing poverty, similar to the overall finding. However, the NSI had a moderate effect on attendance for students experiencing poverty, equivalent to a 1 percentage point increase in attendance rates (from 88 to 89 percent).

Exhibit 10. Impacts of the 9th-grade on-track NSI on student outcomes in schools' second year of participation, by student group



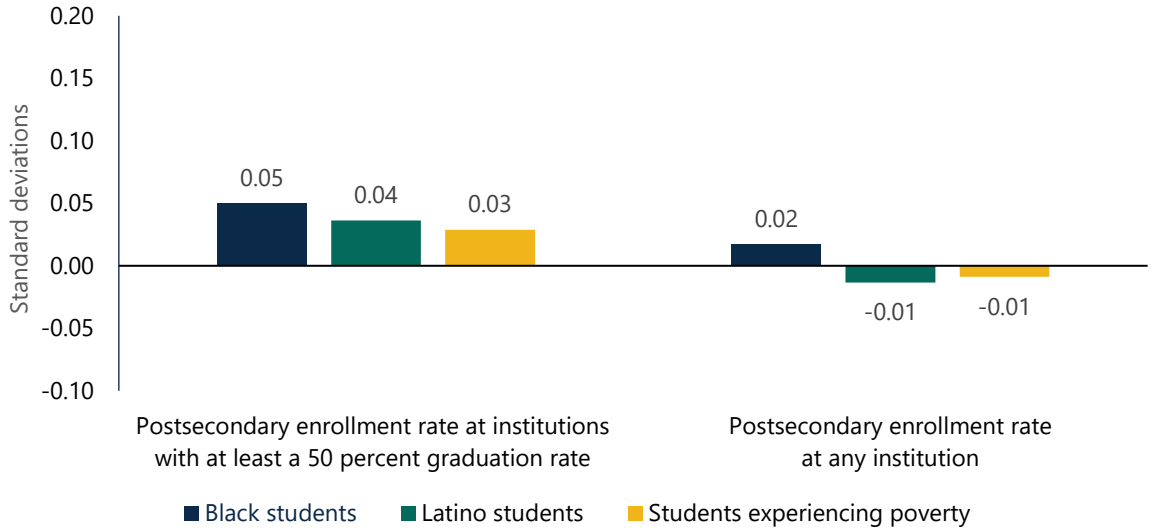
Source: Administrative student records for the 2017-18 through 2021-22 school years.

Notes: The sample consists of 71 to 107 NSI schools, depending on the outcome. We excluded one NSI from the analysis of students experiencing poverty because the district did not provide data to identify these students. Suspensions refer to out-of-school suspensions.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

Similar to the finding for all students, the well-matched postsecondary NSI did not have an impact on college enrollment for students who are Black, Latino, or experiencing poverty. The NSI did not have an impact on enrollment in any college or a college with a graduation rate of at least 50 percent for students who are Black, Latino, or experiencing poverty (Exhibit 11). For these groups of students, the NSI schools had higher enrollment rates in colleges with at least a 50 percent graduation rate than comparison schools, but these differences were not statistically significant.

Exhibit 11. Impacts of the well-matched postsecondary NSI on students in schools' second year of participation, by student group



Source: Administrative student records for the 2014-15 through 2020-21 school years.

Notes: Differences between NSI schools and comparison schools were not statistically significant at the 0.05 level. The sample consists of 100 NSI schools for each outcome measure.

We could not measure the two-year impact of the well-matched postsecondary NSI on FAFSA completion separately for students who are Black, Latino, or experiencing poverty (FAFSA completion rates were not available for each group of students). However, we examined whether the overall impact differed for NSI schools with different shares of students who are Black, Latino, or experiencing poverty. We found that the impacts for schools serving different shares of students belonging to each of these groups were not significantly different from the overall impact (see Exhibit B.11).

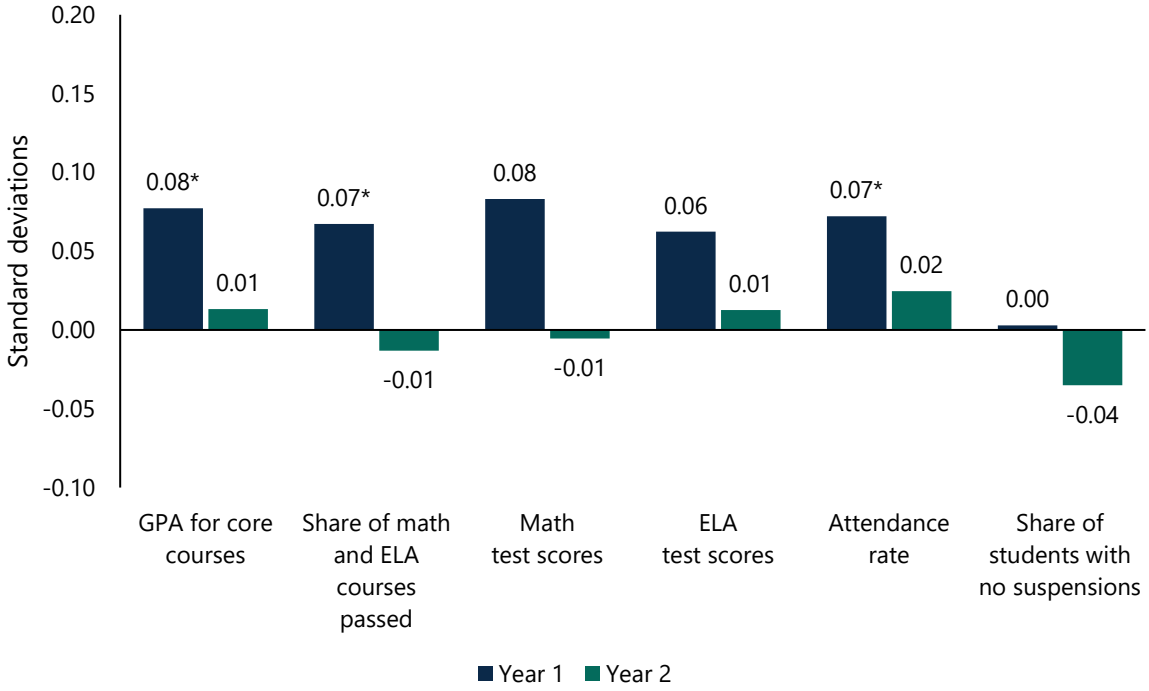
Changes in the impacts of the NSI over time

The foundation expected the impact of the NSI to increase over time as schools developed their capacity to implement CI, conducted more inquiry cycles, and strengthened their connections with schools in their networks. It is also possible for impacts to decrease over time if there is substantial turnover among school staff on the CI teams or if school staff face competing demands from other initiatives.[11] To understand how the impact of the NSI changed over time, this report describes differences in impacts between schools' first and second years of participation.[12]

The 8th-grade on-track NSI had a positive impact on some outcomes in schools' first year of participation. The 8th-grade on-track NSI had a positive impact on GPA, math and ELA course pass rates, and attendance rates in schools' first year of participation, but not in their second year (Exhibit 12). The impacts of 8th-grade on-track NSI after one year of participation were comparable in size to the impacts of the 9th-grade on-track NSI. For example, the 8th-grade on-track NSI increased students' GPA, on average, by 0.08 points (from 2.30 to 2.38) after schools' first year of participation (the 9th-grade on-track NSI increased GPA by 0.13 points after two years). However, these effects did not persist over time; the

impacts after two years of participation were close to zero and not statistically significant for any outcome.[13]

Exhibit 12. Impacts of the 8th-grade on-track NSI on student outcomes, by years of school participation



Source: Administrative student records for the 2017-18 through 2021-22 school years.

Notes: The sample for all of the nontest score outcomes consists of 50 to 136 NSI schools for year 1 and 77 to 109 NSI schools for year 2. The sample for math and ELA test scores consists of 24 schools for year 1 and 77 to 78 schools for year 2. The sample for math and ELA test scores is smaller because some districts did not administer state assessments during the 2019-20 or 2020-21 school years. Suspensions refer to out-of-school suspensions.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

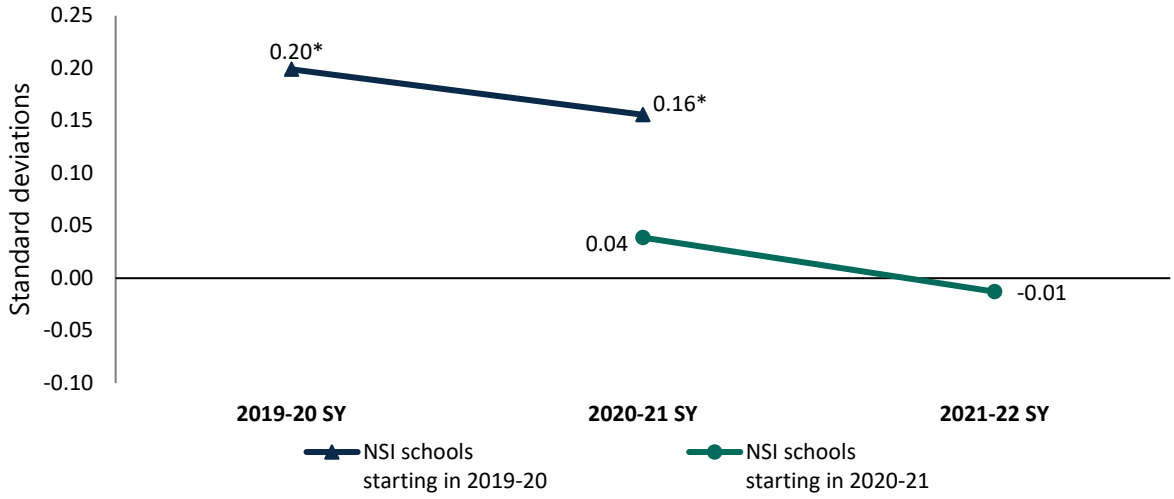
The COVID-19 pandemic may have contributed to the fade-out of the impacts over time. We examined impacts separately for schools that started in the 2019-20 school year and schools that started in the 2020-21 school year. Impacts in the 2019-20 school year were not affected by the COVID-19 pandemic because the outcomes exclude the last quarter of the school year when the COVID-19 pandemic began. Exhibit 13 shows the results for GPA, and Exhibit 14 shows the results for course pass rate. A much larger group of NSI schools started in the 2020-21 school year than in the 2019-20 school year (81 NSI schools started in 2020-21 compared to 23 NSI schools that started in 2019-20).

The results suggest that the COVID-19 pandemic may have played a factor in the declining impacts over time. The year 1 impacts appear to be driven by schools that joined the NSI before the COVID-19 pandemic in the 2019-20 school year. These NSI schools had a moderate to large positive impact on GPA and course pass rate in year 1. The onset of the pandemic may have contributed to the decline in impacts for these schools in year 2 (the 2020-21 school year). In contrast, NSI schools that started amidst the COVID-19 pandemic in the 2020-21 school year had a small but not statistically significant impact on GPA

or course pass rate in year 1 that appeared to decline in year 2 as the disruptions from the pandemic continued in the 2021-22 school year.

Although the COVID-19 pandemic may have influenced the changes in impacts over time, it is also possible the decline in impacts were due to other factors. For example, there may have been differences in the types of change ideas that NSI schools tested in years 1 and 2, or there could have been changes in the level or nature of support from the intermediary over time (for example, impacts may have changed as NSI shifted from having coaches lead CI activities to having school CI teams lead these activities).

Exhibit 13. Impacts of the 8th-grade on-track NSI on core course GPA over time, by school start year

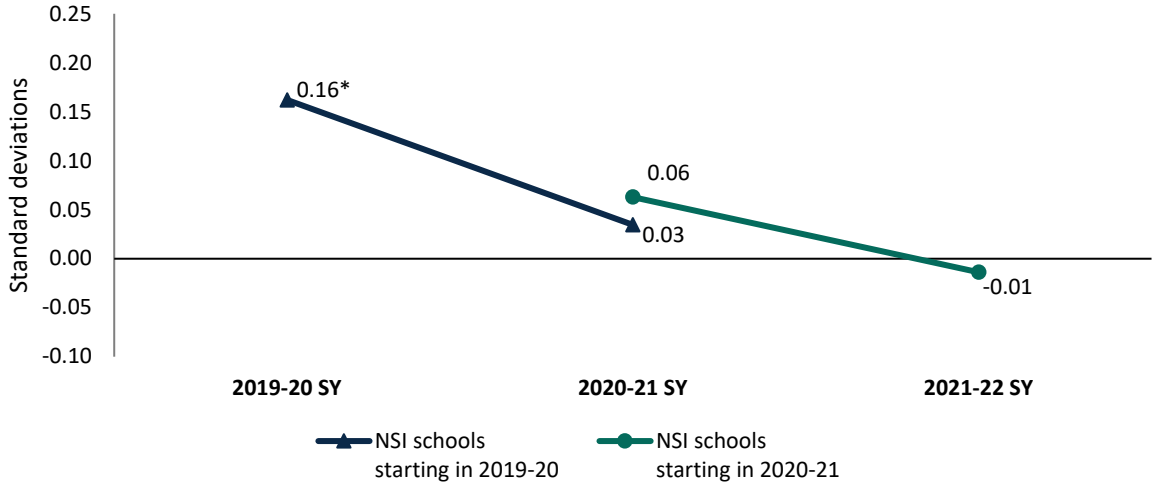


Source: Administrative student records for the 2017-18 through 2021-22 school years.

Notes: The sample consists of 23 NSI schools that joined an NSI in the 2019-20 school year and 81 NSI schools that joined in the 2020-21 school year. We excluded schools that joined an NSI in the 2018-19 school year because there is a small sample of only nine schools.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

Exhibit 14. Impacts of the 8th-grade on-track NSI on the math and ELA course pass rate over time, by school start year



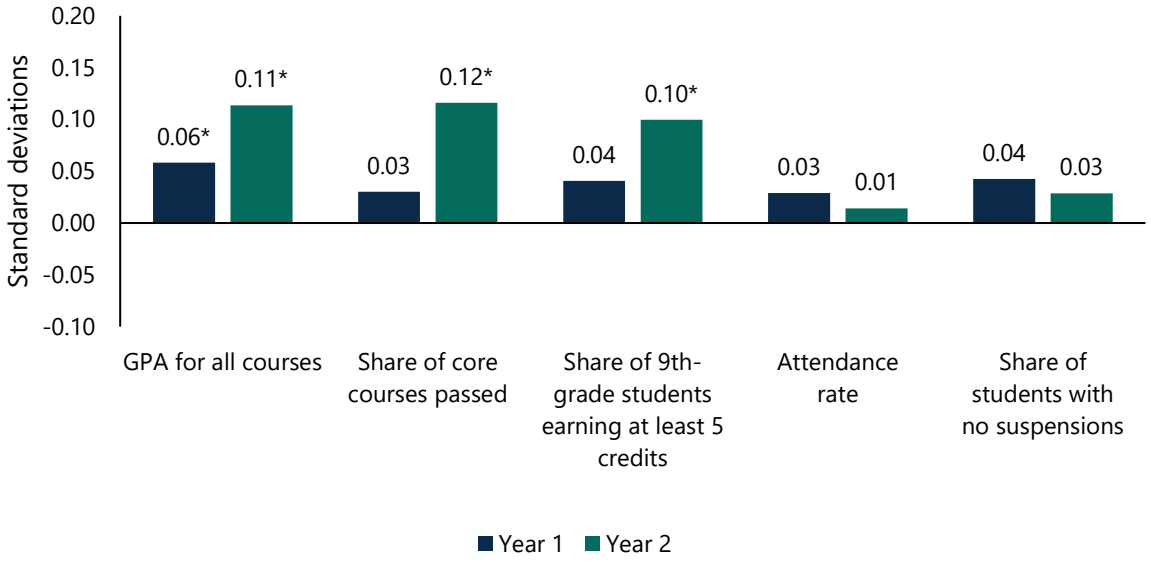
Source: Administrative student records for the 2017-18 through 2021-22 school years.

Notes: The sample consists of 23 NSI schools that joined an NSI in the 2019-20 school year and 81 NSI schools that joined in the 2020-21 school year. We excluded schools that joined in the 2018-19 school year because there is a small sample of only nine schools.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

The impact of the 9th-grade on-track NSI appeared to increase over time for some outcomes and remain steady for others. The NSI had a positive impact on GPA in schools' first year of participation but did not have a significant impact on course pass rate or credit completion (Exhibit 15). The impacts of the 9th-grade on-track NSI on course-related outcomes appeared to increase over time, with impacts on all three of these outcomes larger and statistically significant in schools' second year of participation. There were no statistically significant impacts on student attendance or suspensions in years 1 or 2.[14]

Exhibit 15. Impacts of 9th-grade on-track NSI on student outcomes, by years of school participation



Source: Administrative student records for the 2017-18 through 2021-22 school years.

Note: The sample consists of 70 to 122 NSI schools for year 1 and 83 to 109 NSI schools for year 2. Suspensions refer to out-of-school suspensions.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

The change in impacts over time may have differed for the 8th- and 9th-grade on-track NSI because of differences in their areas of focus. The 8th-grade on-track NSI primarily focused on teachers' instruction, while the 9th-grade on-track NSI focused on promoting supportive school environments and connecting students to adults and the broader school community (Bill & Melinda Gates Foundation 2021). Improving teachers' instruction may have been difficult as teachers provided instruction virtually for much of the 2020-21 school year and then experienced ongoing disruptions from the COVID-19 pandemic in the 2021-22 school year. In contrast, the types of supports provided by the 9th-grade on-track NSI may have addressed the needs of students as schools closed, classes shifted to virtual instruction, and the pandemic weakened students' connections to teachers and their school community. For example, the 9th-grade on-track NSI were more likely to test change ideas related to developing relationships with students, identifying students needing academic support, improving the school culture, and providing academic advising and tutoring.

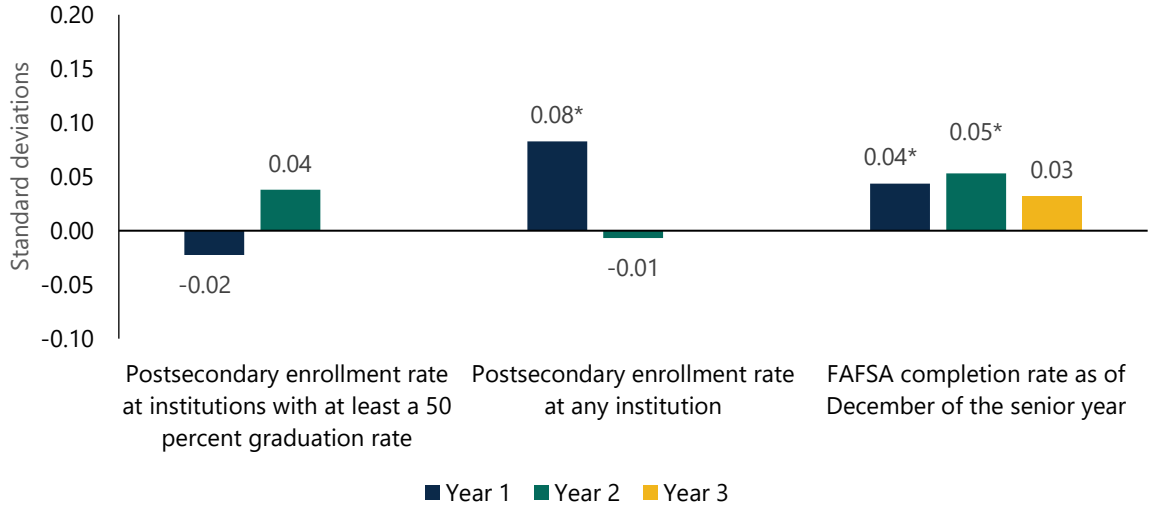
The well-matched postsecondary NSI had a positive impact on overall college enrollment rates in year 1 but not in year 2 **(Exhibit 16).** In schools' first year of participation, the NSI had an impact equivalent to a 4 percentage point increase in overall college enrollment (from 34 percent to 38 percent). Given the timing of the NSI grants, the year 1 impacts are primarily based on college enrollment in fall 2020, and the year 2 impacts are primarily based on enrollment in fall 2021. Many high school graduates delayed or canceled their college plans in fall 2020 as a result of the pandemic (National Student Clearinghouse 2020). One potential explanation for the change over time is that the NSI helped students maintain their college enrollment plans amidst the challenges of the pandemic in fall 2020 but did not

have an impact as the national decline in college enrollment leveled off in fall 2021 (National Student Clearinghouse 2021).

The NSI did not have a significant impact on enrollment in colleges with high graduation rates in either year. Prior to the grant, only 12 percent of students in NSI schools attended colleges with high graduation rates, suggesting that students faced barriers to enrolling in these types of schools.

The well-matched postsecondary NSI had a small positive impact on FAFSA completion in schools' first two years of participation.[15] We also examined the impact after three years because we have three years of FAFSA data for the full sample of NSI schools in the analysis. In schools' third year of participation, the impact on FAFSA completion appeared to be smaller and was not statistically significant. The decline in impact in year 3 may be due, in part, to a policy change in Texas (the majority of NSI schools in this analysis are in Texas). Texas made FAFSA completion a graduation requirement in the 2021-22 school year (Kim 2023)—the third year for most well-matched postsecondary enrollment NSI schools—which increased FAFSA completion rates for all schools in Texas, including comparison schools. However, this policy change does not fully explain the smaller impact because the impact also decreased in year 3 for NSI schools in other states (California and Arizona).

Exhibit 16. Impacts of well-matched postsecondary NSIs on student outcomes, by years of school participation



Source: Administrative student records for the 2014-15 through 2020-21 school years.

Notes: The sample consists of 107 NSI schools in year 1 and 100 NSI schools in year 2 for the postsecondary enrollment outcomes, and 141 NSI schools in year 1, 110 NSI schools in year 2, and 99 NSI schools in year 3 for FAFSA completion. Sample sizes differ across outcomes because of differences in the timing of when data are available.

* Difference between NSI schools and comparison schools is statistically significant at the 0.05 level, two-tailed test.

Variation in impacts across NSI and schools

This study is designed to measure the impact of the overall NSI initiative rather than the impact of individual NSI. However, we also examined differences in impacts across the NSI to identify patterns that could help explain the overall impacts. Because each NSI included a relatively small number of schools—about 12 schools on average—the impacts for an individual NSI are not measured precisely. This makes it

difficult to distinguish small differences in impacts because each NSI impact has a large margin of error. However, we can determine whether there are large differences in impacts across the NSI based on whether the differences in impacts across NSI are statistically significant.

Although the impacts appeared to vary across NSI, these differences may reflect the fact that the impact of each NSI is measured imprecisely. The impacts of the individual 8th-grade on-track NSI appeared to vary widely. For example, five NSI appeared to have negative impacts on GPA, while five other NSI appeared to have positive impacts. However, only two of these impacts were statistically significant, and the margins of error for each impact were large enough that we could not be confident that there were meaningful differences in impact across the NSI. For three outcomes—attendance rates, ELA test scores, and math test scores—the differences across NSI were statistically significant (Exhibit B.18). However, this appears to be driven by one or two NSI that had a substantially larger or smaller estimated impact than other NSI.

The impact of the 9th-grade on-track NSI on students' course-related outcomes were mostly consistent across the NSI. For example, all NSI appeared to have positive impacts on students' GPA, although some of these impacts were not statistically significant because of small samples of schools. The impacts had a similar pattern for course pass rate and credit completion. As a result, we could not distinguish whether certain 9th-grade on-track NSI had a larger impact on these outcomes than others.

The impacts of the well-matched postsecondary NSI appeared to vary. However, similar to the 8th-grade on-track NSI, the impact for each NSI was measured imprecisely, making it difficult to determine if these differences were meaningful. Only four well-matched postsecondary enrollment NSI were in the study, which limits the study's ability to measure variation across NSI.

We also examined the variation in impacts across schools within each NSI. These school-level impacts differed substantially for all three outcome areas.[16] Although each school's individual impact is not reliable, the variation across schools will be useful for understanding which school-level aspects of NSI implementation are related to the NSI impacts. The next study report will analyze how implementation of the NSI initiative is related to impacts on students.

Conclusion

The Bill & Melinda Gates Foundation's NSI initiative aimed to increase the number of Black students, Latino students, and students experiencing poverty who were on track for high school graduation and college enrollment. This report suggests that the initiative had mixed success after schools' second year of participation. The 9th-grade on-track NSI had a positive impact on students' GPA, course pass rate, and credit completion but no impact on attendance or suspension rates. The well-matched postsecondary enrollment NSI had a positive impact on FAFSA completion but not on college enrollment. In addition, these NSI achieved positive impacts for the specific groups of students prioritized by the grant—students who are Black, Latino, or experiencing poverty. However, the 8th-grade on-track NSI that primarily focused on improving middle school teachers' instruction did not impact the targeted student outcomes after schools' second year of participation.

The COVID-19 pandemic potentially played a role in the diverging results for the 8th-grade on-track and 9th-grade on-track NSI. The 8th-grade on-track NSI focused on improving teachers' instruction in math or

ELA, which may have been difficult as teachers adjusted to teaching virtually and focused on students' social and emotional well-being during the pandemic. In contrast, the 9th-grade on-track NSI and well-matched postsecondary NSI provided students with supports and connections that may have been missing for other students during the pandemic. For example, the 9th-grade on-track NSI tested change ideas that targeted supports to students who were identified as off track, developed relationships with students, and provided academic advising and tutoring. In addition, the well-matched postsecondary NSI appeared to help students take the steps needed to enroll in college in schools' first year of NSI participation—a time when students more broadly delayed or canceled their college plans. The next report will shed more light on the impact of the NSI as we describe impacts after the pandemic had receded in the 2022-23 and 2023-24 school years.

In addition to providing much-needed evidence on the impact of school networks' use of CI processes, the evaluation provides an opportunity to understand which aspects of NSI implementation are related to impacts on students. The next report will examine how certain aspects of implementation relate to the variation in NSI impacts across schools. Although this report suggests the potential for the NSI approach to improve some student outcomes, the next report will provide more insight into which aspects of the NSI work may influence its effectiveness.

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Endnotes

[1] The School District of Philadelphia and the Texas Education Agency both provided data for the evaluation. The School District of Philadelphia requested the following acknowledgement be included: "Source: Derived from data provided by The School District of Philadelphia. © 2015 The School District of Philadelphia. All rights reserved." The Texas Education Agency requested the following disclaimer be included: "The conclusions of this research do not necessarily reflect the opinions or official position of the Texas Education Agency, the Texas Higher Education Coordinating Board, the Texas Workforce Commission, or the State of Texas."

[2] We use the term Latino to refer to peoples of Latin American descent. Although we acknowledge the use of Latinx to indicate gender inclusivity, we also understand that Latinx and other iterations (such as Latin@ or Latine) may not be accepted by those from Latin American communities (Salinas 2020). Given this context, we use Latino because it is generally embraced by the communities that are reflected in this work without violating their sociolinguistic norms.

[3] The foundation awarded 31 grants to intermediary organizations that funded 34 individual networks. One intermediary, Partners in School Innovation, received a single grant that funded four networks. See Appendix C for a complete list of NSI intermediaries and networks.

[4] The evaluation views educational equity as providing students with resources, experiences, and environments—allocated based on circumstances and needs—so that students have equal access to opportunities for success (Thompson and Thompson 2018).

[5] We excluded six 8th- and 9th-grade on-track NSI for which within-district comparisons were not feasible because the NSI worked with all or almost all of the schools in a district. We excluded KIPP's well-matched postsecondary NSI because we could not identify a comparison group of KIPP schools for the analysis. We did not compare outcomes for KIPP schools to other traditional public schools or charter schools because the KIPP model has evidence of impacts on student outcomes, making it difficult to disentangle the effect of KIPP from the effect of the NSI (Demers et al. 2023; Gleason et al. 2014; Angrist et al. 2010).

[6] The exhibits in this report show impacts in standard deviation units to make it easier to compare the magnitude of impacts across outcomes. We define impacts smaller than 0.05 standard deviations as small, impacts between 0.05 to 0.20 as moderate, and impacts above 0.2 as large based on the effects of prior education interventions synthesized in Kraft (2020).

[7] The analysis focused on the impact of the 8th-grade on-track NSI in 8th grade; however, some NSI worked with teachers and school staff in 6th, 7th, and 8th grades. We also examined whether the impact of these NSI accumulated over 7th and 8th grade for students who attended NSI schools for multiple years (see Appendix B). We did not find evidence that the impacts of the 8th-grade on-track NSI accumulated over 7th and 8th grade.

[8] One Cohort 3 9th-grade on-track NSI began working with schools in the year after the other Cohort 3 NSI started, so only three Cohort 3 NSI are included in the analysis that examines impacts after two years of participation.

[9] In the states included in the well-matched postsecondary analysis (Arizona, California, and Texas), 53 percent of four-year colleges and 37 percent of two-year colleges had graduation rates of at least 50 percent. These colleges are not necessarily highly selective colleges. Among colleges with graduation rates of at least 50 percent, 35 percent of four-year colleges and 95 percent of two-year colleges had open admission policies or accepted 90 percent or more of students who applied.

[10] The state education agencies that provided data for this analysis did not have information on the proportion of students submitting applications to at least three colleges. Although states could provide college entrance exam data, this was not a relevant outcome for the well-matched postsecondary enrollment NSI for the reasons described in Appendix B.

[11] The impacts over time discussed in this section are based on the number of years of each school participated in the NSI. The analysis sample consists of a new cohort of students in the relevant grade in each year. We do not measure whether the impacts of NSI schools fade out for students in future years, when students progress into grades or schools that are not participating in the NSI.

[12] We also examined impacts on FAFSA completion after three years because we have three years of FAFSA data for the full sample of NSI schools in the analysis by the 2021-22 school year. However, for the college enrollment outcomes and all of the 8th- and 9th-grade on-track outcomes, data were only available for a small sample of schools

that had reached three years of participation by the 2021-22 school year. The next report will focus on impacts after schools' third year of participation for these outcomes.

[13] The one-year results in Exhibit 12 are based on all schools that participated for at least one year, while the two-year results only include schools that participated for two years. To ensure that differences in the one-year and two-year sample were not influencing the results, we also followed a consistent set of schools over time (See Appendix B, Exhibit B.6). The results based on a consistent set of schools also showed a decrease in impacts across years 1 and 2.

[14] As with the 8th-grade on-track results, the one-year results are based on all schools that participated for at least one year, whereas the two-year results are based on the subset of schools that participated for two years. The results showed a similar increase in impacts between the first and second year when we measured the change in impact over time for a consistent set of schools (see Exhibit B.7).

[15] The positive and significant impact in year 1 is driven by schools that joined the NSI after the first year of the grant, and for which year 2 impacts are not yet available. When we restrict the sample to a consistent set of schools, there is no impact in year 1 and an increase in impacts between year 1 and year 2 (see Exhibit B.8). The lack of significant impacts in year 1 for schools joining NSI in the first year of the grant is consistent with the fact that we are measuring December FAFSA completion rates. By December of the first year of the grant NSI had only just begun testing change ideas related to improving FAFSA completion, so it would have been difficult to impact FAFSA completion rates in December of that year.

[16] We analyzed the variation in school-level NSI impacts, similar to the analysis of variation across NSI shown in Exhibit B.18. We found that differences in school-level impacts were statistically significant (at the 0.01 level) for each outcome. This test provides information on whether there is meaningful variation across NSI schools in their impacts on student outcomes. This variation in impacts could be due to differences in NSI impacts across schools as well as differences in underlying school effectiveness that are not related to the impacts of the NSI initiative.

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