education analytics

UnboundEd EIC Evaluation Report 2:

Curriculum Implementation & Sustainability

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Contents

EXECUTIVE SUMMARY

This report describes the findings of the second phase of Education Analytics Inc's (EA's) evaluation of UnboundEd and CORE Learning's work in supporting two school districts' – Guilford County Schools (GCS) and Monterey Peninsula Unified School District (MPUSD) – implementation of high-quality curriculum materials over three years, from 2021-2024, as a part of the Gates Foundation-supported Effective Implementation Cohort (EIC) initiative. The first phase focused on the implementation of UnboundEd support to the two districts and the extent to which this support built districts' capacity to implement the curriculum materials with integrity. This first phase is covered in the first EA report, **UnboundEd Initial Implementation Report Grant Years 1 and 2 (2021-2023).** This report – the second in the series –examines the following evaluation questions:

1) **Did district and school leaders develop and apply the capacity to guide curriculum implementation?**
2) **Did UnboundEd support contribute to increased teacher acceptance/buy-in of the new curriculum, teacher efficacy for implementing it, and the integrity of new curriculum implementation?**
3) **What is the evidence that the districts can independently sustain the systems-level curriculum implementation improvement work as well as be able to scale it to other grade levels and subject areas?**

Three types of evidence are used to answer **Question 1**: first, we discuss findings from analyses of district- and school- leader interviews conducted by EA in the spring and early summer of 2024; second, we examine the data collected by National Implementation Research Network (NIRN) as part of their overall evaluation of the EIC initiative, including their District Capacity Assessment, (district-level) Implementation Team Survey, and (school-level) Implementation Leadership Survey; and lastly, we present results from analyses of teacher survey data collected by districts under NIRN's direction.

In both districts, interviews with district administrators provided evidence that UnboundEd support had built district-level capacity that could also be applied to curriculum implementation in other grades and subjects. NIRN's District Capacity Assessment reports for both districts also showed higher ratings in all capacity domains, including organizational leadership, competency, and data systems, over time. Further, in both districts, analyses of interviews with school leaders show that UnboundEd support built school leader capacity to recognize effective curriculum implementation. Leader survey responses corroborated this finding by showing that school leaders developed plans to promote both implementation of and familiarity with the curriculum across their schools. We also drew on the teacher surveys to find evidence of school-level capacity development. The majority of both GCS and MPUSD teachers responding to the survey agreed that school leaders developed clear expectations for implementation, conducted additional observations to monitor implementation, and provided strategies to improve implementation.

To understand **Question 2**, we first examined teacher responses to the teacher surveys administered by the districts to assess whether teacher buy-in or acceptance of the curriculum changed over time. On average, curriculum acceptance was neutral to slightly positive for each cohort and in each year in GCS. In MPUSD, in each year a substantial majority of the teachers responding to the survey agreed or strongly agreed that the curriculum met expectations, was usable, promoted continuity, and was aligned with student assessments. Next, we examined changes in teachers' self-efficacy for

implementing the high-quality curriculum materials, also using responses to the teacher surveys. While in GCS, school average teacher efficacy did not change across the years of the EIC intervention, it was not possible to make a valid comparison across years in MPUSD because the schools participating in the EIC project changed over time.

The primary source of evidence about curriculum implementation for **Question 2** comes from observations of teachers made during classroom walks facilitated or led by UnboundEd. We examined two aspects of integrity using the observation data provided by the districts: 1) the observations data included an indicator for whether use of the curriculum materials was observed during the time in the teacher's classroom, and 2) the observation data included ratings on several dimensions of implementation integrity. Across both districts, 90 percent of all observations showed that the curriculum was being used in classrooms in EIC schools. Also, in both districts, where observed, educators ranked the curriculum implementation as partially meeting expectations or above in all classrooms. Finally, for **Question 2**, we examined whether fidelity increased over time. In both districts, the percentage of teacher observations during which teachers were teaching the curriculum implementation increased each year.

Turning to **Question 3**, we used primarily qualitative (interview) data to answer this question. Several findings emerged:

- Both districts intended to continue their efforts to implement the curricula around which their EIC work focused.
- Both districts were planning to apply the implementation processes and practices they developed with UnboundEd support to other grades and subjects.
- In both districts, systems, processes, and relationships were developed that leaders perceived improved capacity to implement high-quality curricula in other grades and subjects after the EIC project ends.
- District leaders saw the curriculum implementation work as supporting, rather than competing, with other initiatives.
- At the school level, the project was perceived to have raised expectations for effective instruction.
- However, several challenges to sustaining the work were identified, including teacher and school leader turnover and other demands on leader time.

This report, relying heavily on a mixed methods approach, shows increased capacity for curriculum implementation at the district- and school-leader level, and mixed evidence around whether teachers felt that their capacity had increased. Some evidence of increased fidelity of curriculum implementation emerged, with promising findings of district leaders intending to extend this work to other grades and subjects. Report 3 in this series will speak to whether student outcomes changed as a result of the EIC project.

Section I. Introduction

This report describes the findings of the second phase of Education Analytics Inc's (EA's) evaluation of UnboundEd's work in supporting two school districts' implementation of high-quality curriculum materials, over 3 years, from 2021-2024, as a part of the Gates Foundation-supported Effective Implementation Cohort (EIC) initiative. The first phase focused on the implementation of UnboundEd support to the two districts and the extent to which this support built districts' capacity to implement the curriculum materials with integrity. This first phase is covered in the first EA report, **UnboundEd Initial Implementation Report Grant Years 1 and 2 (2021-2023).** This report – the second in the series – reviews the implementation results, provides additional evidence about capacity building, and then examines the following evaluation questions:

Did district and school leaders develop and apply the capacity to guide curriculum implementation?

Did UnboundEd support contribute to increased teacher acceptance/buy-in of the new curriculum, teacher efficacy for implementing it, and the integrity of new curriculum implementation?

What is the evidence that the districts can independently sustain the systems-level curriculum implementation improvement work as well as be able to scale it to other grade levels and subject areas?

The EIC Initiative and the Two Districts

This section presents a brief description of the EIC initiative and the UnboundEd support, and highlights from the initial implementation report that EA provided.

The EIC Initiative, funded by the Gates Foundation, was intended to support school districts to develop the capacity to implement high-quality curriculum materials. UnboundEd selected Guilford County Schools (GCS) and Monterey Peninsula Unified School District (MPUSD) to participate in the EIC grant, through a selection process in the winter of 2020.

Guilford County Schools had selected Open Up Math as their curriculum. GCS selected their curricular materials during the 2017-2018 school year and started implementing them in the 2018-2019 school year. MPUSD had selected i-Ready as their curriculum. MPUSD selected their curricular materials during the 2018-19 school year and started implementing them in the 2019-20 school year. GCS, based in Greensboro, North Carolina, serves approximately 72,000 students in grades K-12, with 24 middle schools. MPUSD, located in Monterey County, California, serves approximately 10,000 students in grades K-12, and has four middle schools. These districts were selected because of their commitment to the effective implementation of mathematics high-quality instructional materials to make significant improvements to instruction and learning in their districts. They were also selected because of their commitment to make system-wide improvements to support effective curriculum implementation with leaders from the district and school levels.

The first phase of the project was a planning grant that started in late winter/spring of 2021 and ran until summer of 2021. During this time, UnboundEd supported the formation of district implementation teams, and developed professional learning, measurement, and communications plans.

UnboundEd began working with both districts at the school site level in the 2021-22 school year. Work in schools concluded in the spring of 2024.

EA's evaluation was carried out alongside of and utilized information from a broader evaluation of the EIC initiative carried out by the National Implementation Research Network (NIRN). This evaluation included all 19 districts participating in the initiative. NIRN generously shared data from several of their data collection efforts with us, which minimized burden on the school districts.

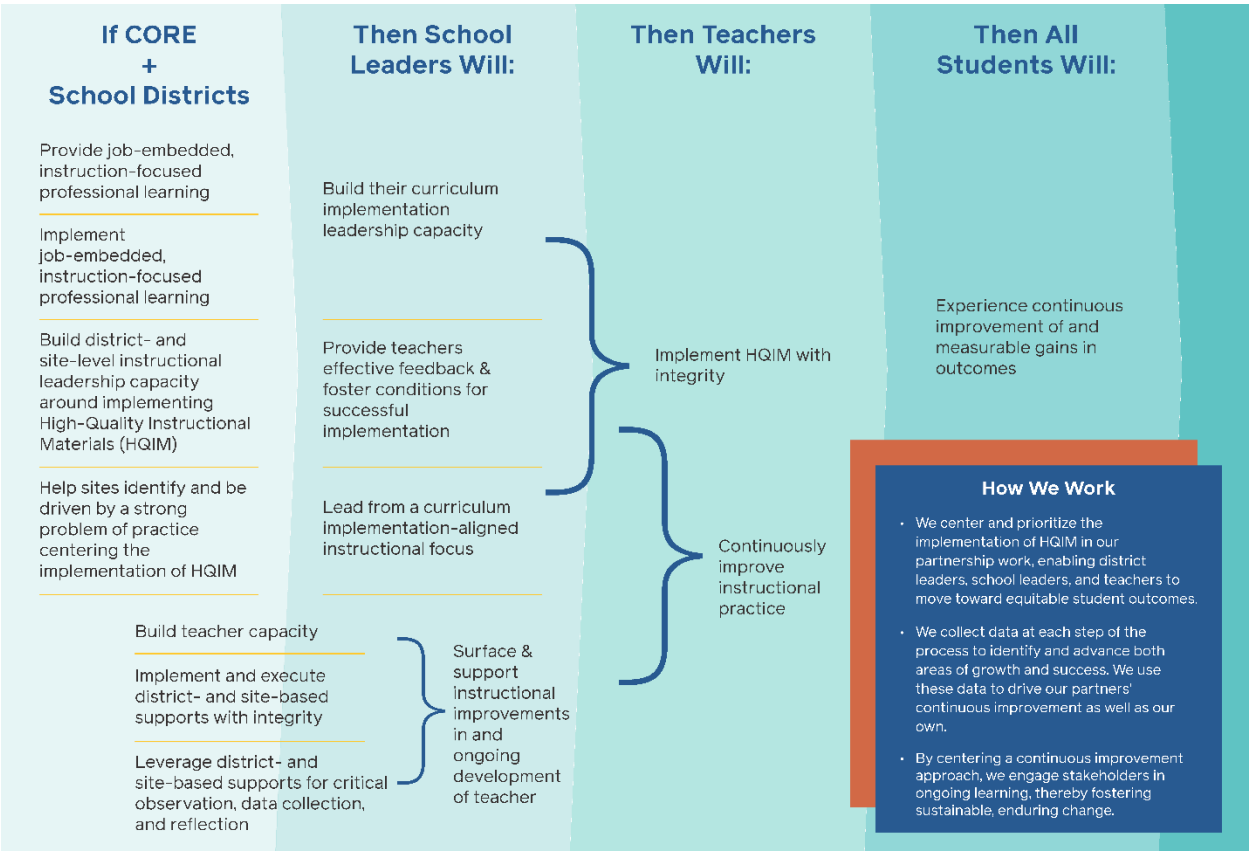
The UnboundEd Support Model

Because the effective implementation of high-quality materials is dependent on systemic change (Pak et al, 2020; Penuel et al, 2009; Touchet et al, 2024), UnboundEd provided support over multiple years and to implementation leaders at both the district and school levels. UnboundEd started in year one with building leadership capacity to support educators as educators implemented materials as designed, and continued through year 3 to build school and district leaders' capacity to sustain the change at the district-level and across schools, and to scale to additional grade levels and subject areas, as appropriate.

The UnboundEd logic model, which guided the initial work in GCS and MPUSD, is shown in Figure 1 below.[1]

[1] UnboundEd has since updated this logic model.

Figure 1. Curriculum Adoption and Implementation Logic Model



The major activities UnboundEd carried out at the district level to build capacity for implementing high-quality instructional materials, provide and implement job-embedded instructionally-focused professional learning, help sites identify and be driven by a strong problem of practice centering the implementation of high-quality instructional materials, and build teacher capacity included:

- Helping district implementation teams develop a math instructional vision and goals focused on curriculum implementation.
- Assisting district teams in developing their EIC implementation plans to provide a roadmap for successful implementation and meet grant requirements set by the Gates Foundation.
- Supporting teams to develop an intra-district communications plan.
- Helping the district teams identify professional learning needs for all stakeholders and a plan to meet those needs.
- Facilitating goal tracking to monitor how districts are meeting their curriculum implementation goals.
- Providing professional learning for district implementation teams.
- Co-creating classroom walk rubrics and schedules for walk-throughs.

To build school-level instructional leadership capacity for implementation and support school efforts to build teacher capacity, UnboundEd planned to conduct the following activities:

1. Design and facilitate program onboarding days, at the beginning of each school year, to help participating site leadership teams prepare for their implementation activities.
2. Provide two professional learning days to help site leadership teams better understand what effective curriculum-specific implementation looks like and the steps to achieving effective implementation.
3. Conduct thrice-yearly classroom walk-throughs called Integrity Walks, during which UnboundEd and school implementation leaders (and in some cases district implementation team members) would observe instruction in classrooms where the curriculum materials were to be used, using a rubric co-created with the district. Ratings and observations from these walks were then to be used to track the integrity of curriculum implementation and identify areas in need of improvement. The information collected was also to be used to develop school-focused problems of practice (described below).
1. Train school implementation teams in conducting their own Learning Walks, during which the teams would visit classrooms to observe instruction and use look-fors to identify the stage of implementation of the curriculum. School teams would be trained to use the observations to identify areas of instructional practice in need of improvement and provide feedback to teachers, and check on progress toward addressing problems of practice (described below). These walks were also done three times a year.
2. Design and facilitate a program planning day (also called program review day in year one) near the end of each school year during which site leadership teams reviewed their schools' success and challenges (e.g., as indicated by walk-through and survey data), identified areas to work on the following school ear (called problems of practice[2]), and planned the following year's efforts.

Note that UnboundEd did not directly support individual teachers, but did aim to set the conditions and provide the capacities for district and school implementation leaders to do so.

Review of Initial Implementation Report Findings

The initial implementation report addressed two evaluation questions:

1) Was UnboundEd support delivered as intended?
2) Did this support contribute to building the districts' capacity to implement high-quality mathematics curricular materials?

Delivery of UnboundEd Support

In the first two years of the project, several factors created the need for flexibility in UnboundEd's support plans. In GCS, four of the 12 schools in the original Cohort 1 of the staged rollout had changes in school leadership. Support for these schools was restarted in year 2 in sync with the 12 Cohort 2 schools set to begin support in year 2. (In the rest of this report results from these schools are

[2] The Problem of practice (PoP) is a question used to focus efforts to improve instruction and learning at the school level through implementing high-quality instructional materials. The question raised in the PoP is intended to address something that is within the power of the school to control, modify, or improve, around which data can be collected and specific "look-fors" developed to highlight the desired learning outcomes. An example of a PoP provided in UnboundEd program planning day materials was: *How are students engaging with classroom routines associated with the curriculum and do the routines as implemented align to the way the curriculum was designed to be used?*

analyzed separately because they received some support in the initial EIC year, unlike the 12 Cohort 2 schools. This group is referred to as Cohort 1.5 in succeeding sections.) In MPUSD, the initial District Implementation Team (DIT) was reformed with new members after year 1, to better represent the stakeholder groups whose support was needed to further effective curriculum implementation. The district also made changes to the schools in the cohort: one of the original four EIC middle schools was going to close at the end of the year and the district added middle grades to their two elementary schools. This required supporting two additional schools in year 2.

In addition, UnboundEd experienced staff transitions on the teams supporting the districts. The organization also refined its support model throughout the project, including Integrity Walk procedures and rubrics, based on feedback from district staff around and experience with initial versions of the tools and processes in year 1. These changes on the UnboundEd side potentially reduce the validity of cross-year comparisons. Also, interview informants expressed some frustration about the fluid state of walk-through rubrics and processes, especially in GCS, though they also appreciated the flexibility to co-construct materials and processes in the first year.

Though there were some adjustments made to the support plan to reflect the aforementioned changes, the core activities described above were implemented as intended at both the district and school levels in both districts. UnboundEd provided substantial support to both district implementation teams and school-level site leadership teams.

At the district level, UnboundEd helped build district-level leadership capacity around implementing high-quality instructional materials by:

- Holding weekly meetings with sponsor-drivers to plan activities and check in on support needs.
- Facilitating quarterly (in GCS) or monthly (in MPUSD) district implementation team meetings.
- Provided and supported use of a Curriculum Implementation Toolkit, which provided templates for vision development, goal setting and tracking, communication planning, and professional learning needs identification.
- Sharing examples of successful actions taken by other districts.
- Acting as a thought partner to district teams.
- Providing professional learning to district implementation teams including through UnboundEd's Standards Institute, Systems Leader Academy, and Equity Influencer Residency[3], as well as through UnboundEd and CORE programming.
- Co-constructing walk-through rubrics with district staff.
- Helping district teams develop data systems to track and analyze implementation data from classroom walk-throughs.

At the school level, all school teams participated in onboarding, professional learning, and program planning days. There was little or no variation in the services UnboundEd provided to schools to

[3] UnboundEd no longer offers the Systems Leader Academy or Equity Influencer Residency. When offered as part of this engagement, the Systems Leader Academy covered how to define a vision and develop a plan that disrupts and replaces inequitable policies, practices, and procedures within the school system, provide exposure to tools, protocols, and change management principles, and deepen understanding of equitable policies, practices, and procedures and how to support them. Equity Influencer Residency aimed at building content knowledge, standards-based instructional expertise, and fluency in coaching and professional development practices to support content-based, equitable instruction.

help them provide and implement job-embedded instruction focused professional learning and build school-level implementation leadership capacity. There was some variation in the number of Integrity Walks schools conducted, however, with some schools doing fewer walks than planned in years 1 and 2. In year 3, all schools conducted the three planned Integrity Walks. In the first year, school leaders also participated in the Standards Institute, Systems Leader Academy, and Equity Influencer Residency along with district leaders.

Analysis of responses to post-event surveys conducted by UnboundEd showed that in the first two years substantial majorities of respondents (80 to 100%) agreed or strongly agreed that activities run or facilitated by UnboundEd staff were well planned and conducted, relevant, and meaningful.

Did UnboundEd support build district and school-level capacity to implement high-quality curricular materials?

Our examination of the evidence from the first two years on the EIC project showed that in both districts the level of support provided by UnboundEd influenced districts' and schools' implementation capacity.[4]

At the district level, the support helped to increase knowledge of what effective implementation looks like and provided processes and tools to assess it. Some highlights of the capacity building included:

- The support helped both of the districts develop standard operating processes that can be used after the grant to continue to support curriculum implementation in the schools.
- The walk-through process organized by UnboundEd improved both districts' capacity to assess the degree of curricular implementation. Neither district appears to have had a systematic way of doing so before UnboundEd support. These data were perceived to provide more proximate information than the test results GCS was tracking.
- UnboundEd support built the capacity of principal supervisors to carry on with walk-throughs and continue support for schools, which UnboundEd gradually released to district staff in the last EIC year.
- In GCS, UnboundEd support helped to unify communication from the district to schools about what effective curriculum implementation looks like, and encouraged consistency in communication among district staff, so that all were giving consistent feedback to schools.
- In MPUSD, UnboundEd support helped the district build data capacity by supporting consolidation of implementation-related data into a dashboard that facilitates curriculum implementation team conversations and allows better tracking of progress. UnboundEd support was especially important for MPUSD, which, due to limited resources, may not have been able to organize a sustained and coherent curriculum implementation effort.

At the school level, the specific UnboundEd services helped school leadership teams build curriculum implementation capacity. By the second year, most school teams had developed and were following implementation plans. Responses to UnboundEd's post-event surveys also showed that

[4] We did not analyze year 3 responses to UnboundEd after-event surveys because Cohort 1 schools in GCS and the MPUSD schools were no longer receiving direct UnboundEd support.

participants believed that the events helped them develop a problem of practice, identify patterns of practice across the school, identify staff learning needs, and plan action steps for the school and district implementation teams. Large majorities (70 to 100%) agreed or strongly agreed that they were confident they were prepared to take the next steps toward implementation of the new curricular materials, that their learning had increased, and they were prepared to implement the new learning.

Section II of this report presents additional evidence on whether district and school leaders succeeded in developing capacity and how the capacity was used based on evidence collected in the third year of the project.

Section II. Capacity DEVELOPMENT AND USE

Evaluation Question: Did district and school leaders develop and apply the capacity to guide curriculum implementation?

Building district and school capacity for implementing high-quality instructional materials with integrity is a key part of the UnboundEd logic model. Capacity building is expected to lead to teacher implementation of high-quality instructional materials as designed and to continuous improvement in instructional practice. In this section, we review the available evidence about the success of the capacity building efforts. Three types of evidence are reviewed in this section. First, we discuss findings from analyses of district and school leader interviews conducted by EA in the spring and early summer of 2024. Using these data, we explored participant perceptions of whether and how UnboundEd influenced implementation capacity.[5] Second, we examined the data collected by NIRN as part of their overall evaluation of the EIC initiative, including their District Capacity Assessment (Ward et al, 2015), (district-level) Implementation Team Survey, and (school-level) Implementation Leadership Survey. Lastly, we present results from analyses of teacher survey data collected by districts under NIRN's direction.[6]

Below we consider district-level capacity followed by school-level implementation capacity.

District Level Capacity

- In both districts, interviews with district administrators (executive sponsor,[7] project driver,[8] and a subset of district implementation team (DIT)[9] members) provided evidence that UnboundEd

[5] All interviews were done remotely via video. Interviews were not recorded. We had two people take notes during each interview. We transcribed these notes, and then made tables that brought together paraphrases of responses related to specific topics from the different respondents. One of us then drew the conclusions and the other reviewed to make sure the conclusions were supported by the paraphrases.
[6] These surveys are briefly described in the Appendix.
[7] The executive sponsor was a member of the district management who was expected to champion the initiative and support lower-level staff as they engaged in the implementation work.
[8] The project driver was the individual who acted as an internal project manager, serving as the primary contact person for day-to-day work with UnboundEd and coordinated the district implementation team.
[9] The district implementation teams were responsible for leading the implementation effort and creating enabling conditions for the schools. Team membership varied but usually included representatives of several district office functions such as math curriculum, professional development, and information technology.

support had built district-level capacity that could also be applied to curriculum implementation in other grades and subjects.

- Leaders in both districts mentioned that UnboundEd tools and facilitation of meetings provided structures that kept the implementation team moving and focused, as well as provided opportunities to identify and address implementation challenges. In particular, UnboundEd's planning tools were also cited as providing useful guidance and as offering models for the specific actions needed to support implementation.
- In GCS, UnboundEd support of the DIT was credited with promoting improved inter-departmental communication, and the development of a common language and common expectations about curriculum implementation, due to the team's functioning as a community of practice. UnboundEd planning tools provided a model for a systematic and consistent approach to curriculum implementation that the district is now using for high school math and English Language Arts curricula at all levels.
- In MPUSD, district administrators cited UnboundEd support as contributing to making the district's instructional vision concrete and building knowledge of what good implementation looks like and how to support it. MPUSD also plans to extend the curriculum implementation model they learned via EIC to other grades and subjects as part of a broader effort to create more coherence for students (e.g., exposure to high leverage instructional practices) across grades and subjects. The revised DIT established in year 2, reconstituted with UnboundEd support, was perceived as being useful in bringing the right people together to address supports schools needed and to articulate goals for the work.

- NIRN's District Capacity Assessment (DCA) reports for both districts showed higher ratings in each of the three capacity domains (organizational leadership, competency, and data systems) over time.
  - In GCS, the score for the competency domain increased from just below 40% of the practices NIRN believes support effective implementation observed in years 1 and 2 to 50% in year 3.
  - In MPUSD, the score for the competency domain increased from 35% to 42% between years 2 and 3. (Note that due to the restructuring of the DIT after year 1, NIRN only compared year 3 to year 2.)
  - In neither district did the DCA score meet the NIRN goal of 80% for year 3.

Note that the DCA scores are only a partial indicator of the success of UnboundEd services in these two districts because while UnboundEd could provide tools, advice, and facilitation, team functioning was also influenced by district-specific factors such as team member selection, time availability, and other district priorities. Team membership also changed across years in both districts.

We also reviewed NIRN's reports on the survey they administered to the district Implementation Leadership Teams (ILT). We selected items that represented team capacities that UnboundEd support could most directly affect.[10] The survey responses suggested that:

- District ILT members generally understood their roles, perceived that the team had a clear mission, and understood the district's theory of action for the project. (See Table 2.1.)
- A large majority of respondents usually agreed that the team used the communication process planned, assessed the effectiveness of communication, and continued to assess current policies and procedures related to math for priority students.[11]
- There was no clear trend in the percentage of positive responses over time.
    - The small number of respondents and changing composition of the ILTs (especially in MPUSD) may account for the fluctuations in percentages observed.

Table 2.1. Percentage of District Implementation Team Members Agreeing or Strongly Agreeing with NIRN Surveys Items Related to Team Capacity

A. Guilford County Schools	April 2021	February 2022	November 2022	October 2023
The team's roles and responsibilities are clearly defined and understood.	100%	80%	66%	93%
Our team has a clear mission and vision	100%	80%	83%	100%
I understand our Theory of Action and how it will work to improve student outcomes.	100%	100%	83%	100%
The team uses communication processes outlined in their communication plan.	100%	100%	66%	93%
The team regularly assesses the effectiveness of communication using feedback from stakeholders	88%	70%	49%	100%
The team continues to assess current policies and procedures related to math for priority students	-	80%	100%	100%
Number of Respondents	8	10	6	13-14

[10] We were not provided with the raw data underlying the NIRN reports, so we were unable to examine measurement properties of the items, or whether they formed a scale. We have also not found any documentation from NIRN about the construction of this survey. We therefore judged which items were most likely to be influenced by UnboundEd support given what we knew about what the UnboundEd tools and process offered.
[11] In GCS, priority students were defined as historically marginalized underperforming students. In MPUSD, priority students were defined relative to school context but also included special education students.

B. Monterey Peninsula USD	April 2021	January 2022	October 2022	October 2023
The team's roles and responsibilities are clearly defined and understood.	100%	82%	79%	60%
Our team has a clear mission and vision	100%	100%	100%	100%
I understand our Theory of Action and how it will work to improve student outcomes.	100%	91%	78%	80%
The team uses communication processes outlined in their communication plan.	71%	82%	78%	60%
The team regularly assesses the effectiveness of communication using feedback from stakeholders	58%	73%	89%	80%
The team continues to assess current policies and procedures related to math for priority students	-	91%	88%	80%
Number of Respondents	7	11	9	5

School Level Capacity

- In both districts, analyses of interviews with school leaders show that UnboundEd support built school leader capacity to recognize effective curriculum implementation.
- In both districts, school leaders cited the development of common language to describe curriculum implementation and cross-school consistency of interpreting the observation rubric. This reportedly contributed to a shared definition of successful implementation.
- Additionally, school leaders in MPUSD mentioned that they developed better knowledge of the curriculum itself. This is likely due to the "hands-on" experience of participating in walks. The walks provided a form of learning for school teams. Specifically, by participating in the walks they become familiar with look-fors related to the curriculum and then had the opportunity to see them in the classroom. DIT members and project drivers also reported school-level capacity increases.
    - In GCS, individuals mentioned that the professional learning around curriculum implementation and providing feedback to teachers, as well as program planning days, helped school implementation teams establish agendas and helped to focus school efforts on next steps to improve implementation.
    - In both GCS and MPUSD, interviewees mentioned that the Integrity and Learning Walks developed principals' ability to think about instruction in a more focused way, increasing their capacity as instructional leaders.
    - In MPUSD, DIT members observed higher-quality feedback from school leaders to teachers about curriculum implementation.

To supplement the interviews, we also reviewed NIRN's Implementation Leadership Survey reports.[12] Survey responses suggest that school leaders developed plans to promote both implementation of and familiarity with the curriculum, in line with the goals of the program planning days.

- In GCS, by Year 3, 96% of the leaders responding rated their familiarity with the curriculum as moderate or greater. Ninety-six percent also indicated developing a plan to implement, removing obstacles to implementation, and establishing clear standards for implementation.
- In MPUSD, all the leaders were familiar with the curriculum from moderate to great extent in Year 3. One hundred percent indicated developing a plan to implement, removing obstacles to implementation, and establishing clear standards for implementation.

We also drew on the teacher surveys[13] to find evidence of school-level capacity development. We were able to add three questions to these surveys around school leadership team activities that represented three important capacities: the ability to communicate clear expectations for implementation, to conduct observations outside of the three walks led by UnboundEd staff, and to provide specific feedback on how to implement more effectively.

- The majority of GSC teachers responding to the survey agreed that school leaders developed clear expectations for implementation, conducted additional observations to monitor implementation, and provided strategies to improve implementation. (See Table 2.2.)
- Similarly, the majority of MPUSD teachers responding to the survey agreed that school leaders developed clear expectations for implementation, conducted additional observations, and provided strategies to improve implementation. (See Table 2.3.)

[12] Again, we were not provided with raw data or response rates.
[13] The surveys administered in the two districts contained somewhat different items and response options, presumably to reflect individual district conditions and format preferences.

Table 2.2. Percentage of GCS Teacher Survey Respondents Agreeing or Strongly Agreeing That School Leaders Took Support Actions

Cohort	Support Action	Year	
		2022-23	2023-24
1	School Leadership team developed clear expectations for how we will implement the Open Up Resources	88.1%	83.7%
	School Leadership team conducts observations of my teaching in between the observations with Pivot/District staff	88.1%	91.8%
	School Leadership team offers specific strategies to better implement the Open Up Resources curriculum following classroom observations	86.4%	77.6%
	N of Respondents	*59*	*49*
	Estimated Response Rate	*70%*	*69%*
1.5	School Leadership team developed clear expectations for how we will implement the Open Up Resources	74.1%	87.5%
	School Leadership team conducts observations of my teaching in between the observations with Pivot/District staff	96.3%	93.3%
	School Leadership team offers specific strategies to better implement the Open Up Resources curriculum following classroom observations	85.2%	93.3%
	N of Respondents	27	15
	Estimated Response Rate	87%	50%
2	School Leadership team developed clear expectations for how we will implement the Open Up Resources	80.3%	72.6%
	School Leadership team conducts observations of my teaching in between the observations with Pivot/District staff	91.0%	75.8%
	School Leadership team offers specific strategies to better implement the Open Up Resources curriculum following classroom observations	74.6%	66.1%
2	*N of Respondents*	66	62
	Estimated Response Rate	60%	56%

Table 2.3. Percentage of MPUSD Teacher Survey Respondents[a] Agreeing or Strongly Agreeing That School Leaders Took Support Actions

Support Action	Percentage Agreeing for 2022-23[b]
My school has developed clear expectations for how we will implement i-Ready Math.	76.9%
My school leadership team conducts frequent observations of my instructional practice in addition to the three times per year learning walks conducted with District and Pivot [UnboundEd] staff.	69.2%
Following observations, my school leadership team offers me specific strategies to better implement i-Ready Math in my classroom.	69.2%

a) Includes 13 teachers from the four original EIC schools and two elementary schools that added grade 7. Estimated response rate = 81%.

b) Not asked in 2023-24.

One important capacity the UnboundEd support aimed to develop in district and school implementation teams was the ability to provide professional development opportunities that would build teachers' capacity to implement the curriculum materials. The GCS teacher survey therefore included three items specifically about the relationship of math professional development to the implementation of curriculum.

- In GCS, the majority of responding teachers agreed that the math professional development was linked to the curriculum and provided guidance on how to integrate it with instruction. (See Table 2.4.)
    - Though UnboundEd did not provide professional learning to teachers, these results can be interpreted to suggest that the support provided (e.g. professional learning needs identification, professional learning provided to school leaders, and problems of practice identified during program planning days) helped school leaders provide professional learning that supported classroom implementation of the high-quality instructional materials.

Table 2.4. Percentages of GCS Teachers Agreeing with Items About Professional Development Support for Curriculum Implementation

Cohort	Item	2021-22	2022-23	2023-24
1	My professional development related to mathematics presents information that is clearly and explicitly linked to the curriculum.	93%	85%	100%
	My professional development related to mathematics provides explicit guidance on how to integrate the curriculum into my instruction.	72%	84%	98%
	My professional development related to mathematics is integrated/linked with my daily lessons and the curriculum	77%	90%	88%
	Number of Respondents	57-59	58-59	48-49
	Estimated Response Rate	70-73%	69-70%	59-60%
1.5	My professional development related to mathematics presents information that is clearly and explicitly linked to the curriculum.	89%	85%	86%
	My professional development related to mathematics provides explicit guidance on how to integrate the curriculum into my instruction.	89%	73%	87%
	My professional development related to mathematics is integrated/linked with my daily lessons and the curriculum	79%	77%	73%
	Number of Respondents	19	26	14-15
	Estimated Response Rate	63%	83%	47-50%
2	My professional development related to mathematics presents information that is clearly and explicitly linked to the curriculum.	-	82%	77%
	My professional development related to mathematics provides explicit guidance on how to integrate the curriculum into my instruction.	-	73%	77%
	My professional development related to mathematics is integrated/linked with my daily lessons and the curriculum	-	85%	74%
	Number of Respondents	-	65-66	61-62
	Estimated Response Rate	-	59-60%	53-54%

MPUSD teachers were also asked about their professional learning experiences.

- In MPUSD, 76.9% of survey respondents agreed that their school and district leadership teams provided them with sufficient opportunities to learn how to effectively implement the i-Ready Math curriculum in their classrooms in 2022-23. (This item was not administered in 2023-24.)
- In MPUSD, teachers responding to survey items about the effectiveness of their professional learning experiences indicated that the experiences supported their learning related to the curriculum about one-half the time. (See Table 2.5.)

Table 2.5. Monterey Peninsula Unified School District Teacher Survey Respondents' Average Rating[a] of the Frequency with Which Professional Learning Supported Learning Related to Curriculum Implementation

The professional learning experiences I participated in this year…	Year		
	2021-22[b]	2022-23[c]	2023-24[d]
effectively support learning and/or development in culturally-responsive teaching practices	2.2	2.3	2.2
effectively support learning and/or development in mathematics content knowledge	2.1	2.4	2.1
effectively support learning and/or development in mathematics pedagogy	2.4	2.6	2.4
effectively support use of effective instructional practices (e.g., promoting student discourse, implement tasks that promote reasoning and problem solving, pose purposeful questions)	2.5	2.7	2.5
N of Respondents	*11*	*13*	*11*
Estimated Response Rate	*69%*	*81%*	*69%*

a) The item response options were: 0=never, 1=a few times, 2=about half the time, 3=most of the time, 4=All of the time. An index value of 2.5 thus represents an average response between about half and most of the time.

b) Includes teachers from the four original EIC schools.

c) Includes teachers from the four original EIC schools plus grade 7 teachers in two added K-8 schools.

d) Includes teachers from the three original EIC schools plus grade 7 and 8 teachers in two added K-8 schools.

Though providing professional learning to teachers was not part of the UnboundEd curriculum implementation model, it does appear that capacity-building efforts may have influenced school leaders to provide curriculum-based professional learning to teachers, more clearly so in GCS.

Teacher Perception of Leader Support for the Curriculum

We expected that capacity building at the district and school levels would be reflected in teacher perceptions of their leaders' support around curriculum implementation. We used teacher survey responses to explore whether teachers perceived this support.

- Teacher perceptions of district leader support for the curriculum implementation, as assessed by the teacher survey, were strongly positive in both districts.

- In GCS, 79-93% of the teachers responding agreed or strongly agreed that the curriculum was supported by district leaders. (See Table 2.6.)
- In MPUSD, 92-100% agreed or strongly agreed that the curriculum was supported by district leaders. (See Table 2.7.)

- In both districts, a large majority of teachers agreed that their school leaders supported the curriculum. (See Tables 2.6 and 2.7.)

Table 2.6. Percentage of Guilford County Schools Teacher Survey Respondents Agreeing that District or School Leaders Supported the Curriculum, by Cohort and Year

Cohort	Support from	Year		
		2021-22	2022-23	2023-24
1	District Leaders	87.7%	84.7%	89.8%
	School Leaders	93.1%	89.8%	93.8%
	N of Respondents	*57-58*	*59*	*49*
	Estimated Response Rate	*70-72%*	*70%*	*60%*
1.5	District Leaders	78.9%	88.9%	93.0%
	School Leaders	94.7%	80.8%	80.0%
	N of Respondents	19	26-27	15
	Estimated Response Rate	63%	84-87%	50%
2	District Leaders	-	86.8%	82.3%
	School Leaders	-	80.3%	87.1%
	N of Respondents	-	66-68	62
	Estimated Response Rate	-	60-62%	54%

Item wording was: "The Guilford County adopted curriculum, including Open Up Resources content and GCS provided materials is explicitly supported and/or encouraged by district leaders" and "The Guilford County adopted curriculum, including Open Up Resources content and GCS provided materials is explicitly supported and/or encouraged by my school leadership."

Table 2.7. Percentage of Monterey Peninsula Unified School District Teacher Survey Respondents Agreeing That District and School Leader Supported the Curriculum Implementation by Year.

Support from	Year		
	2021-22	2022-23	2023-24
District Leaders	100%	92.0%	100%
School Leaders	90.9%	92.0%	90.9%
N of Respondents	*11*	*13*	*11*
Estimated Response Rate	*69%*	*81%*	*69%*

Item wording: "The Ready Classroom Math middle school mathematics course program is explicitly supported and/or encouraged by district leaders" and "The Ready Classroom Math middle school mathematics course program is explicitly supported and/or encouraged by my school leadership."

Limitations

Readers should be aware that it is not possible to completely separate the contributions of UnboundEd to capacity building from other supports. For example, leaders in GCS also cited support from NIRN (such as the district capacity assessment) as useful in improving capacity. Further, in GCS, National Training Network coaches funded by the district outside the EIC grant provided school-level support. At the district level, however, UnboundEd provided the predominant amount of support, and its tools, processes, and staff clearly had a major influence on the districts' implementation activities. It is also important to remember that district and school staff co-built their capacity in response to and supported by UnboundEd efforts. UnboundEd had no direct authority over what was enacted by district and school staff.

With respect to survey evidence, because data were not collected before the start of the EIC project, it is not possible to assess the full contribution of UnboundEd support by comparing "before" perceptions with those from the end of the support period. While we might expect to see (and in many cases do see) change in responses over time that are consistent with an increase in capacity, changes in the population of survey respondents due to teacher and leader turnover make comparisons across years less reliable. In MPUSD, the reconstitution of the district implementation team after the first year, the closure of one of the four original schools, and the phase-in of middle grades at two others add noise to cross-year comparisons. Teacher survey response rates also varied across years, which could make such comparisons less valid.

Summary and Conclusions on Capacity Building

The interviews provided the most direct evidence that UnboundEd support helped district and school leaders develop and apply capacity to guide curriculum implementation. Interviews with both district and school leaders consistently mentioned the importance of the processes and tools provided by UnboundEd in structuring and maintaining implementation efforts. These included the structured sequence of district implementation team meetings and the cycle of onboarding days, professional learning days, walks, and program planning days facilitated by UnboundEd. Interviewees indicated that the use of UnboundEd tools and processes had become established practice. This suggests that districts had developed new and sustainable capacities. Specifically, three types of capacity were developed.

Individual knowledge and skill increased. At the district level, UnboundEd provided structures for district and school teams to learn how to implement and build their own processes and routines to carry out the work of supporting teachers' implementation of the curriculum. At the school level, implementation teams from both districts cited improved knowledge of the curriculum and credited the walk-through process with developing their ability to monitor instruction, suggesting improved instructional leadership capacity. Through the program onboarding and program planning days, school teams learned a process for reviewing implementation progress, identifying barriers, and planning steps to improve it where needed. District leaders perceived that principals improved knowledge of the curriculum and feedback skills. [14]

Organizational processes and systems were developed that can be used for other curriculum initiatives as well as sustaining math curriculum implementation. At the district level, implementation teams gained experience with a structured, systematic implementation support process that they plan to use for other curriculum initiatives. They received planning tools and learned to use team structures that brought the relevant actors together to support implementation. Both districts intend to use these for future initiatives. Data systems to track implementation were developed. At the school level, Integrity Walks and Learning Walks were institutionalized to monitor curriculum implementation. Along with the progress review process mentioned above, these processes can potentially counteract pressure for school leaders to divert attention from curriculum implementation to crises management which is typical of the principal role.

Organizational relationships and culture that can support curriculum implementation were also developed. At both levels, interview respondents highlighted the development of a common language to discuss instruction and a common understanding of curriculum implementation integrity. In GCS, working together on the DIT helped improve communication among the different organizational units supporting schools and developed common expectations about what good implementation should look like.

Overall, survey results show that capacity had developed by year 3. It is more difficult to attribute this to UnboundEd support since there were no surveys administered prior to the beginning of

[14] Curriculum was central to both program onboarding and program planning days. During the former, participants were re-introduced to the curriculum materials & given an overview of look-fors in the walk-throughs. During the latter, school teams used walk data on curriculum implementation to check on use of the materials and associated instructional strategies to assess whether implementation was improving and identify areas for improvement. This professional learning was thus closely aligned with the curriculum due to the focus in material implementation.

UnboundEd support to use as a baseline and because some survey measures don't change much from relatively high first-year levels. Scores on NIRN's DCA did improve over time, consistent with the expectation of improved capacity. ILT survey responses suggested that capacity was initially high in both districts and, in the final year, levels of agreement with capacity statements were still high, though agreement percentages fluctuated over the four survey administrations, likely due to changes in DIT membership. The School Leadership Team (SLT) survey results from year 3 show that school leaders in both districts perceived themselves as moderately to greatly familiar with the curriculum, had developed an implementation plan, and had established clear standards for implementation, which is consistent with the expectation that UnboundEd programing for school leaders contributed to building implementation capacity. Most teachers in both districts agreed that school leaders established clear expectations, conducted observations, and provided suggestions for improvement, consistent with leaders applying implementation capacities. In GCS, teachers perceived that math professional development supported curriculum implementation, as would be expected if school leaders applied capacities built with UnboundEd support. Teachers in both districts also perceived that district and school leaders supported the curriculum.

It does appear that UnboundEd support was more vital to capacity building in MPUSD, given its smaller size and fewer resources. In MPUSD, UnboundEd support catalyzed a concerted effort to go beyond just providing teachers with materials, resulting in a coordinated district-level support for the use of materials with students. In GCS, there appeared to have been more pre-existing knowledge about curriculum and more data system capacity for monitoring implementation.

Section III. Curriculum Implementation

Evaluation Question: Did UnboundEd support contribute to improved teacher acceptance of the curriculum, teacher efficacy for implementing it, and the integrity of new curriculum implementation?

3.1: How has teacher buy-in or acceptance of the new curriculum changed over time?
3.2: How has teacher self-efficacy for curriculum implementation changed over time?
3.3: Did curriculum implementation vary by school?
3.4: What were the correlates of curriculum implementation integrity?

Teacher Acceptance/Buy-In

First, we examined teacher responses to the teacher surveys administered by the districts to assess whether teacher buy-in or acceptance of the curriculum changed over time.

While acceptance is not directly influenced by UnboundEd support, research suggests that teacher perceptions of their curriculum materials are related to whether and how they implement them in their classrooms (Allender & Oats, 1997; Kessler, 2024). We examined data from NIRN's teacher survey designed and administered by each district to assess teacher acceptance. In GCS, we developed an index of support by averaging numeric values from teacher responses from seven survey items. (See Appendix Table A1.) In MPUSD, the items did not form a reliable index in each year, and the number of respondents was small, so we report just the percentage of respondents agreeing or strongly agreeing below.

- On average, curriculum acceptance was neutral to slightly positive for each cohort and in each year in GCS. (See Table 3.1.) This suggests that increased exposure to the curriculum and EIC supports did not improve acceptance.

Table 3.1. Curriculum Acceptance Index for Guilford County Schools, by Cohort and Year

Cohort	2022		2023		2024	
	Average	N of Respondents	Average	N of Respondents	Average	N of Respondents
1	3.5	59	3.5	59	3.4	49
1.5	3.4	19	3.0	27	3.3	15
2	-	Not Administered	3.5	68	3.3	62

Item response scale was 1=Strongly Disagree, 2=Disagree, 3=Unsure, 4=Agree, 5=Strongly Agree.

- In MPUSD, in each year a substantial majority of the teachers responding to the survey agreed or strongly agreed that the curriculum met expectations, was usable, promoted continuity, and was aligned with student assessments. (See Table 3.2.)
    - Differences across years could be due to different schools included in the survey[15].

Table 3.2. Percentages of MPUSD Teachers Agreeing or Strongly Agreeing with Items Related to Acceptance of The Curriculum

The i-Ready Classroom Math middle school mathematics course program:	2022	2023	2024
meets my expectations	91%	77%	100%
is appealing to me	64%	77%	73%
is implementable in our designated (85 minute) class period	91%	77%	91%
is easy to use	64%	69%	73%
promotes continuity of math instruction between grades	91%	85%	91%
is aligned to my district's and/or school's math summative assessments. (i-Ready and SBAC)	91%	85%	91%

[15] Responses can't be analyzed by school because school identifiers were not included in the survey.

Schools Included	4 Original Middle Schools	4 Original + 7th Grade in 2 K8	3 Original + 7th & 8th Grade in 2 K8
N of Respondents	11	13	11

Teacher Efficacy

Next, we examined changes in teachers' self-efficacy for implementing the high-quality curriculum materials, using responses to the teacher surveys.

UnboundEd staff selected the items on the teacher survey most relevant to efficacy for the specific practices related to the curriculum materials being implemented in each district. We used these items to create two common composite indexes that applied to both GCS and MPUSD. The first was intended to reflect efficacy for math pedagogical practices embedded in the curricular materials, and the second, efficacy for providing social support in the classroom. For MPUSD, we also created a scale that represented efficacy for culturally sensitive pedagogy. We then averaged teacher responses within years and compared averages across years. See Appendix Table A2 for the individual survey items included in each composite and their means.

- In Guilford County Schools, school average teacher efficacy did not change across the years of the EIC intervention[16]. (See Table 3.3.)
    - This could have been due to the relatively high level of efficacy observed in the initial year of support as well as item response scale insensitivity (see the limitations section below).

Table 3.3. Average GCS Teacher Self-Efficacy Over Time and Years Teaching Math, by Cohort

Cohort	Year	Math Pedagogy	Classroom Social Support	Average Years Teaching Math	% Teachers <2 Yrs expr	N of Respondents
1	2022	1.5	1.7	9.9	10.3%	58
	2023	1.6	1.7	10.6	5.1%	59
	2324	1.6	1.8	11.1	8.2%	49
1.5	2022	1.6	1.7	8.9	10.5%	19
	2023	1.5	1.6	9.7	14.8%	27

[16] Note that the teachers responding to the survey were not the same over the three years. The overlap of respondents between years ranged from 32 to 53%. For Cohort 1, 27% of the respondents were the same across all three years. In 2023-24, Swann Middle School in Cohort 2 did not administer the survey.

	2324	1.6	1.7	12.2	13.3%	15
2	2023	1.8	1.5	9.2	19.1%	67-68
	2324	1.6	1.7	9.6	11.2%	62

Response scale: 0=not confident, 1=somewhat confident, 2=highly confident.

- In MPUSD, it was not possible to make a valid comparison across years because the schools participating in the EIC project changed over the years and the survey files we were provided did not indicate the school of the respondent. In addition, because only two teachers appear to have been teaching at implementing schools in all three years, change (or lack of change) could also be due to changes in the teachers surveyed. Table 3.4 shows the yearly averages, which shows that average teacher efficacy was stable across the period.

Table 3.4. Average MPUSD Teacher Self-Efficacy Over Time and Years Teaching Math

Year	Math Pedagogy	Classroom Social Support	Culturally Sensitive Pedagogy	% Teachers 3 or less Yrs expr	N of Respondents	Schools Included
2022	1.3	1.6	1.2	55%	11	4 Original Middle Schools
2023	1.4	1.7	1.3	62%	13	4 Original + 7th Grade in 2 K8
2324	1.3	1.6	1.2	55%	11	3 Original + 7th & 8th Grade in 2 K8

Response scale: 0=not confident, 1=somewhat confident 2=highly confident.

Note that average teacher experience was lower in MPUSD than GCS, which may account for the lower average levels of efficacy.

We were also able to collect some school leader perceptions about changes in teaching practices and teacher mindsets during the interviews we conducted with school leaders at the 2024 program planning days.

In Guilford County Schools:

- District leaders told us that the promotion of common language for discussing instruction and the focused feedback school implementation teams provided after walk-through observations helped to improve consistency of instructional practice within and across schools.

- School leaders reported more use of the materials and lesson plans, but they also noted substantial variability among teachers in the degree to which their practices changed to better implement the curriculum.

In Monterey Peninsula Unified School District:

- District Implementation Team interviewees mentioned less frequent assignment of work not related to the high-quality curriculum materials to students and more use of research-based materials, as well as more emphasis on addressing learning objectives, rather than just providing extra practice in the additional instructional time afforded by longer math periods. Teachers were perceived to be better at seeing ways to shift the cognitive load to students. District leaders also cited more uniformity in pacing across schools, connected to the district objective of making the student experience more consistent across schools.
- School leaders also perceived improved teacher knowledge and efficacy for using the curriculum. Like district leaders, school leaders also mentioned observing a shift in the cognitive load from teachers to students but also noted substantial variation among teachers in the extent to which cognitive load was shifted.

Overall, we find mixed evidence as to whether teachers' mindsets changed over the course of the EIC project. Survey responses on average do not show a change, though interviews with school leaders in MPUSD suggested efficacy for curriculum implementation improved.

Curriculum Implementation Integrity

The primary source of evidence about curriculum implementation comes from observations of teachers made during the Integrity Walks facilitated or led by UnboundEd. We examined two aspects of integrity using the observation data provided by the districts. The observations data included an indicator for whether use of the curriculum materials was observed during the time in the teacher's classroom. We calculated the percentage of observations during which curriculum use was observed. The observation data also included ratings on several dimensions of implementation integrity. Their definitions are shown in Appendix Table A3.

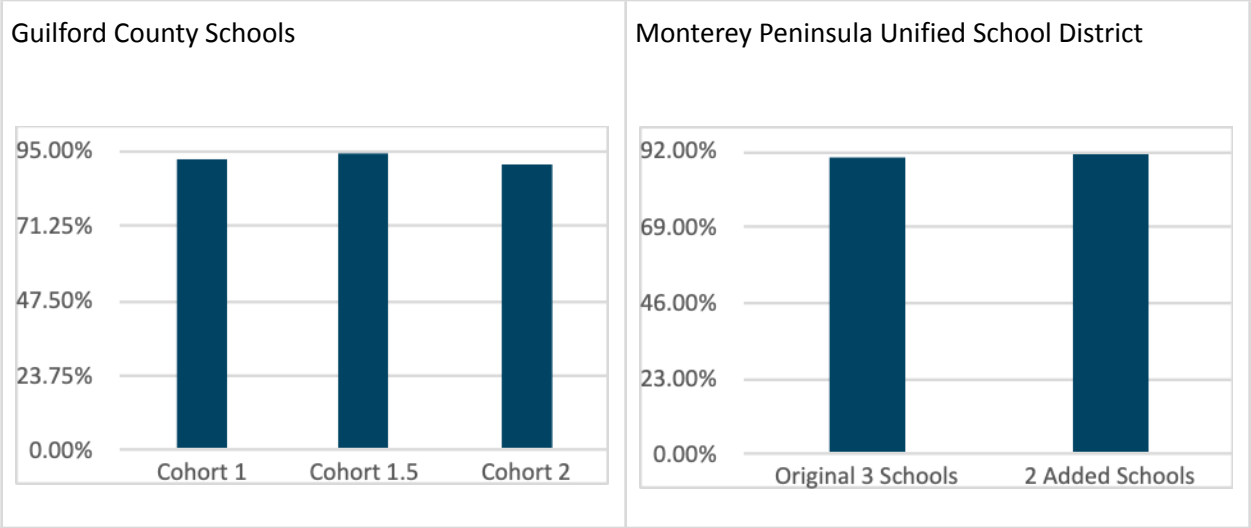
Implementation Integrity Achieved in Year 3

If EIC participation, including UnboundEd support, was effective, we would expect that by the end of the period of support, the districts would have achieved a high level of curriculum integrity.

Examining walk data from year 3 (2023-24) collected during UnboundEd supported walks, we found that:

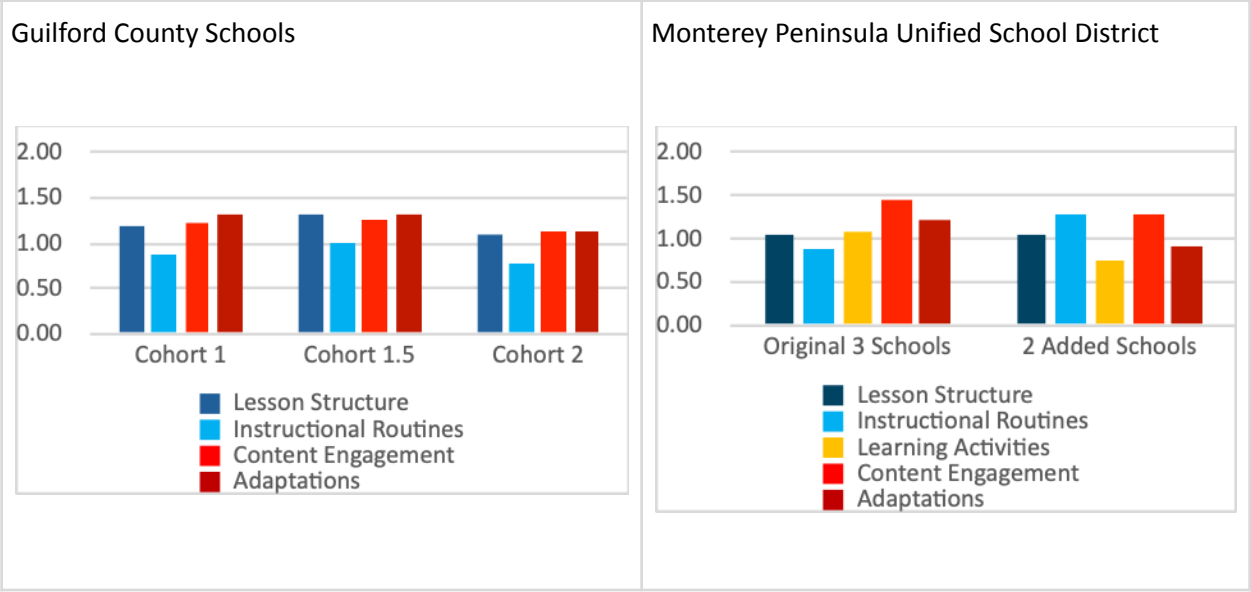
- In Guilford County Schools, 90 percent of teacher observations showed that the curriculum was being taught in schools from all three cohorts. (See Figure 3.1.)
- In Monterey Peninsula Unified School District, 90 percent of teacher observations showed that the curriculum was being taught, both at the three schools that began the project and the two that added middle grades after year 1.

Figure 3.1. Percentage of SY 2023-24 Teacher Observations in Which Teaching the Curriculum Was Observed



- In Guilford County Schools, during year 3 of the project, the average teacher rating for the Integrity Walks showed that the curriculum was partially implemented with respect to the four indicator dimensions. (See Figure 3.2.)
- Similarly, in Monterey Peninsula Unified School District, the average teacher rating for the Integrity Walks showed that the curriculum was partially implemented.[17]

Figure 3.2. Average Integrity Ratings of 2023-24 Teacher Observations



[17] MPUSD used two dimensions for content engagement, one referencing teachers providing a variety of learning activities to promote student interaction with grade-level content standards, and the other student engagement with grade-level content throughout the lesson in a variety of ways.

Note: The Integrity Walk ratings were made on a three-point scale with scale stages labeled “Foundational” (the lowest), “Mechanical” (the middle), and “Routine” (the highest). For analysis, “Foundational” was assigned a value of 0, “Mechanical” of 1, and “Routine” of 2. The definition of “Mechanical” stated that it was to be used “when parts of the curriculum components are used”.

Change in Implementation Integrity Over Time

We also examined whether fidelity increased over time. If EIC participation, including UnboundEd support, was effective in promoting curriculum implementation, we would expect that by the end of the period of support, the level of curriculum integrity, as represented by Integrity Walk data provided by the districts, would have increased substantially from a baseline level representing a pre-support state.

Due to changes in the Integrity Walk rubrics, especially during SY 23-24[18], it was not possible to directly compare ratings over time. To provide some indication as to whether implementation (as measured by walks conducted with UnboundEd facilitation) improved, we instead calculated the percentage of observations scored at the highest and lowest levels of the rubric. The expectation was that more observations would be rated at the highest level and fewer at the lowest if average integrity of implementation had improved. Though the dimensions defined also changed across years, we were able to make comparisons of the percentage of observations during which teachers were observed using the curriculum materials and three of the integrity dimensions that were largely comparable across years. Tables 2.1 and 2.2 show the comparisons.

- In GCS, the percentage of teacher observations during which teachers were teaching the curriculum increased each year. (See Table 3.5.)
- In GCS, the percentage of observations scored at highest level of the four integrity dimensions increased substantially from the first year to the second year of support. (See Table 3.5.)
    - However, for Cohort 1, this percentage did not improve for the 2023-24 school year.

[18] In addition to wording changes, the 2023-24 rubric defined only three levels while the earlier versions defined four levels for most of the dimensions.

Table 3.5. Percentage of GCS Observations Scored at Highest Level of Rubric by Cohort, Dimension and Year

Cohort	Dimension	Year		
		2021-22	2022-23	2023-24
1	Teaching Curriculum	78.6%	69.8%	92.7%
	Structure	0%	30.1%	27.1%
	Teacher Routines	0%	19.1%	17.7%
	Student Participation/ Engagement	0%	28.7%	27.0%
	N of Teacher Observations	*42*	*73*	*96*
1.5	Teaching Curriculum	37.5%	51.9%	94.1%
	Structure	0%	14.8%	26.5%
	Teacher Routines	0%	11.1%	14.7%
	Student Participation/ Engagement	0%	22.2%	23.5%
	N of Teacher Observations	*16*	*27*	*34*
2	Teaching Curriculum	NA	42.3%	90.7%
	Structure	NA	10.2%	22.5%
	Teacher Routines	NA	3.8%	11.6%
	Student Participation/ Engagement	NA	14.1%	27.7%
	N of Teacher Observations	-	*78*	*129*

- There was no clear pattern in the percentage of teacher observations rated at the lowest rubric level over time. (See Table 3.6.)
    - Typically, teacher routines (the extent to which teachers use the routines or strategies of the curriculum to engage students) was the dimension with the highest percentage of lowest ratings for each year and group.

Table 3.6. Percentage of GCS Observations Scored at Lowest Level of Rubric by Cohort, Dimension and Year

Cohort	Dimension	Year		
		2021-22	2022-23	2023-24
1	Structure	9.5%	4.1%	11.4%
	Teacher Routines	16.7%	19.1%	30.2%
	Student Participation/ Engagement	11.9%	0%	7.3%
	N of Teacher Observations	*42*	*73*	*96*
1.5	Structure	6.3%	7.4%	5.9%
	Teacher Routines	18.5%	18.5%	14.7%
	Student Participation/ Engagement	18.8%	18.5%	14.7%
	N of Teacher Observations	*16*	*27*	*34*
2	Structure	NA	6.4%	14.0%
	Teacher Routines	NA	16.8%	33.3%
	Student Participation/ Engagement	NA	1.3%	19.4%
	N of Teacher Observations	-	*78*	*129*

- For MPUSD, the percentage of observations in which teachers were using the curriculum increased from the first to the second year for the original three EIC schools. (See Table 3.7.)
- By the third year, the percentage of observations rated at the highest level increased on each of the dimensions that could be compared across years for the three original EIC schools. (See Table 3.7.)
    - For the two schools that added middle grades, the percentages also increased between the first year they participated in EIC and the final year.

3.7. Percentage of MPUSD Observations Scored at Highest Level of Rubric by Cohort, Dimension and Year

Group	Dimension	Year		
		2021-22	2022-23	2023-24
Original 3 Schools	Teaching Curriculum	63%	100%	90%
	Structure	0%	0%	23%
	Teacher Routines	0%	0%	27%
	Student Participation/ Engagement	0%	0%	63%
	N of Teacher Observations	*8*	*9*	*30*
2 Schools Adding Middle Grades	Teaching Curriculum	NA	100%	92%
	Structure	NA	0%	25%
	Teacher Routines	NA	0%	25%
	Student Participation/ Engagement	NA	0%	50%
	N of Teacher Observations	-	*5*	*12*

- As with Guilford County Schools, it is hard to generalize about changes over time in the percent of observations given the lowest ratings in MPUSD. (See Table 3.8.)
    - While the percentages clearly declined in the second year for the three original EIC schools, they increased in year 3 for both those schools and the two schools that added middle grades. This may be due in part to the high proportion of new teachers in these schools, to whom the curriculum may have been new.

Table 3.8. Percentage of MPUSD Observations Scored at Lowest Level of Rubric by Cohort, Dimension and Year

Group	Dimension	Year		
		2021-22	2022-23	2023-24
Original 3 Schools	Structure	13%	0%	23%
	Teacher Routines	38%	11%	33%
	Student Participation/ Engagement	38%	0%	15%
	N of Teacher Observations	*8*	*9*	*27-30*
2 Schools Adding Middle Grades	Structure	NA	0%	25%
	Teacher Routines	NA	10%	17%
	Student Participation/ Engagement	NA	0%	20%
	N of Teacher Observations	-	*5*	*10-12*

Overall, it is clear that the integrity of curriculum implementation, as measured by the Integrity Walk ratings, increased. In both districts, the percentage of classrooms observed using the materials rose substantially from the first to the third year, and the proportion of classrooms with the highest integrity ratings also increased from the first to the last year.

Curriculum Implementation Variation Across Schools

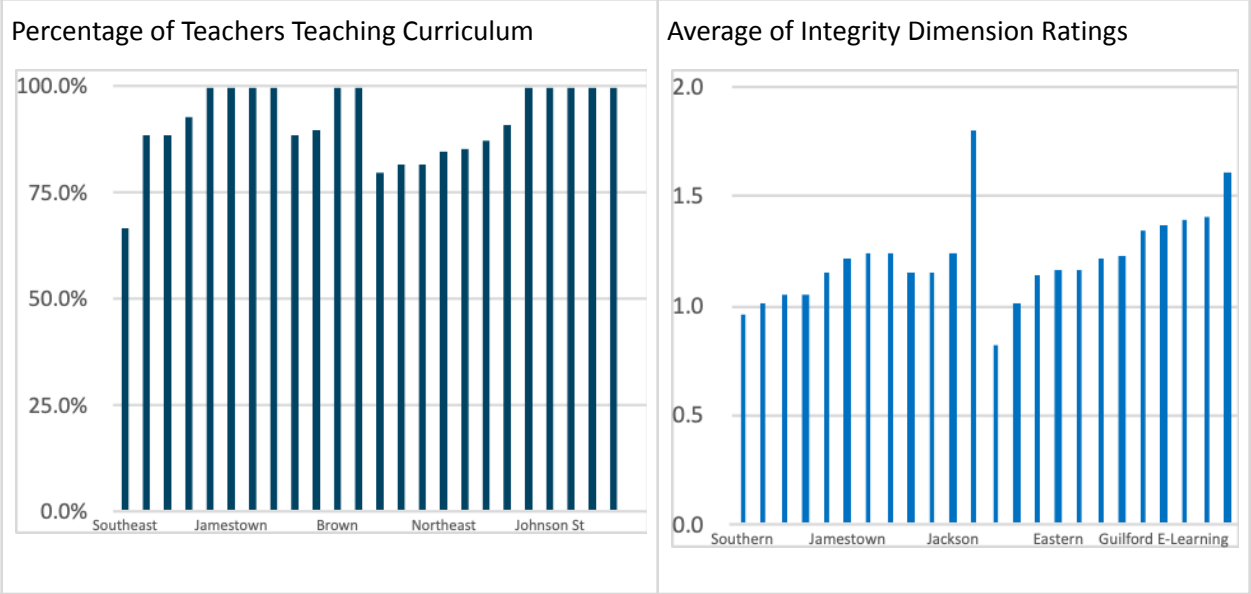
In both districts, there appeared to be a desire to make students' instructional experiences more consistent across schools and teachers. Though, as documented in the prior report, implementation of UnboundEd support did not vary substantially by school, we would expect that because schools do differ in teacher and leader experience, student populations, and timing of support, there could be variation across schools.

With respect to implementation, as measured by Integrity Walk ratings, we found that:

- In year 3 of the project, most schools in GCS were similar in the overall level of implementation.
    - In GCS, for 20 of the 24 schools, the percentage of teachers observed using the curriculum was within a +/- 1 standard deviation of the average of 92%. (See Figure 3.)

- In GCS, 19 of the 24 schools had similar levels of implementation integrity, in that the was average of the four integrity dimensions[19] were within +/- 1 standard deviation of the 1.22 average of school averages. (See Figure 3.3.)
- Two schools do stand out as implementing with greater integrity as measured by the teacher observations: Brown Summit and Penn-Griffin.
- One school, Northeast, had an appreciably lower average of the four integrity dimension ratings, with the average below the partially implemented level. Southeast also had an average lower than this level as well as the lowest percentage of teacher observations during which teachers were teaching the curriculum.

Figure 3.3. Variation in 2023-24 Implementation Integrity Across Guilford County EIC Schools



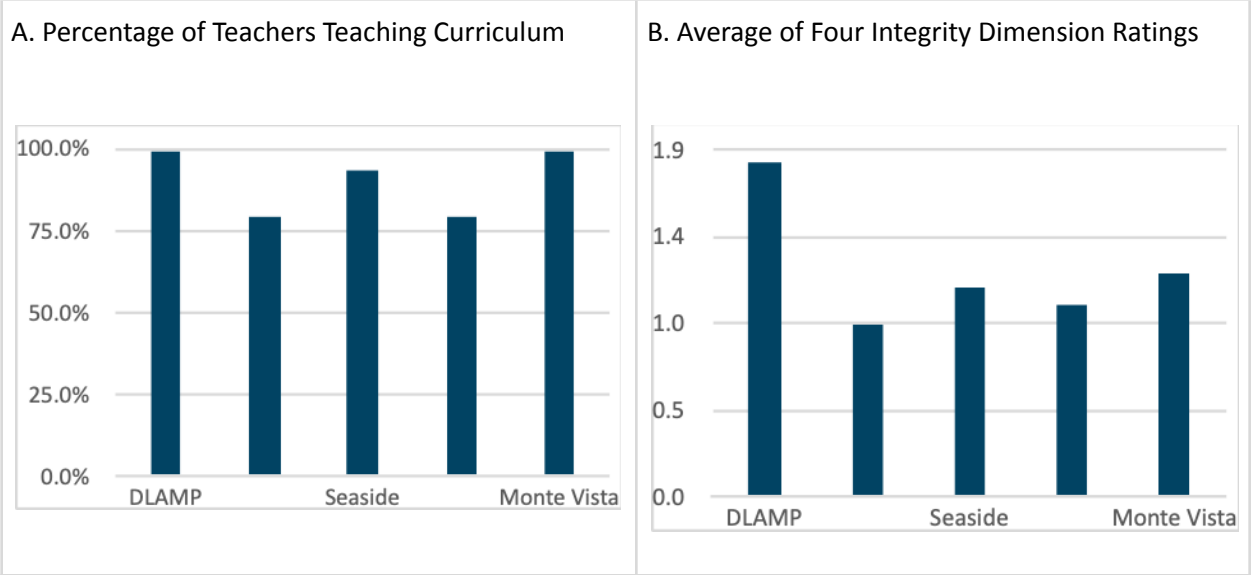
In MPUSD, we found that:

- In year 3 of the project, MPUSD schools showed some variation in the overall level of implementation as measured by Integrity Walks.
  - In three schools, for 90 percent or more of the year 3 observations, teachers were observed using the curriculum, and in the other two schools, 80 percent were. (See Figure 3.4A.)
  - Four of the five schools were similar in their average level of integrity[20] . The average was close to the middle level of the rubric. (See Figure 3.4B.)

[19] We averaged school average ratings on lesson structure, instructional routines, content engagement (students) and adaptations.
[20] We averaged school average ratings on lesson structure, instructional routines, content engagement (students) and adaptations.

- One school, the Dual Language Academy (DLAMP), had a substantially higher average rated integrity. However, there was only one teacher observed in this school.
- Because of the relatively small number of teachers observed in each school, differences between schools should be interpreted with caution.

Figure 3.4. Variation in 2023-24 Implementation Integrity Across Monterey Peninsula Unified School District EIC Schools



Correlates of Implementation Integrity

We also examined whether there were school characteristics associated with the level of implementation integrity measured by walk ratings in the 23-24 school year. While there are many school characteristics that can potentially influence implementation integrity, we chose to focus on the following potential correlates:

- School demographics (percentage of students who were Black or Latinx, percentage of students who were eligible for free/reduced price lunch)
- Pre-EIC student achievement
- School size
- Teacher turnover
- Leadership turnover during the EIC period
- Participation timing (by cohort in GCS; three original versus the two added schools for MPUSD)

- Teacher survey responses used to construct acceptance and perceived leadership support scales (Guilford County Schools only[21])

We considered school demographics and prior achievement because research has suggested that teachers may expect it to be more difficult to implement more demanding curricula with lower performing or historically underserved students (e.g., Duschl et al, 2007; Pak et al, 2020; Smith et al, 2018). We considered school size because it could be easier for school leaders to mobilize and support teachers in smaller schools. We considered teacher retention and average teacher experience because new hires may have less familiarity with the curriculum, and constantly training new hires may take away from deepening the expertise of those already on board (McLure & Aldridge, 2023; Wei et al, 2009). Similarly, leadership turnover could result in leaders who are not as familiar with or committed to the curriculum leading the school implementation team. We also expected that implementation would be more advanced in schools that had been working at it longer (i.e., Cohort 1 schools in GCS, the original three EIC schools in MPUSD). Finally, research has also supported an important role for principal support in curriculum implementation (Jaciw et al, 2020; Louis, 2003; Wang et al, 2021), and for teacher perceptions of the appropriateness of the curriculum (Allender and Oats, 1997; Clayback et al, 2023), represented by the curriculum acceptance survey items.

We estimated the relationship of each of these factors with the integrity index and with the percentage of classrooms observed using the curriculum in the 2023-24 school year through regression analysis[22]. Because of the relatively small number of schools, we were not able to consider all of the factors together in one analysis. Results may therefore fail to capture the potential combined contribution of multiple factors.

In Guilford County Schools:

- Cohorts 1.5 and 2 have slightly higher average integrity indices than Cohort 1.
    - The Cohort 1.5 average is 0.2 higher and the Cohort 2 average 0.1 higher, though neither of these differences are statistically significant.
- School size has the strongest (negative) effect on both the proportion of classrooms observed using the curriculum and the integrity index, when considered on its own. Teacher perceptions of leadership support is also positively associated with both. (See Table 3.9.)
- While pre-EIC student achievement and percentages of students who were economically disadvantaged or Black/Latinx were only weakly related to curriculum use, these factors were negatively related to the integrity of implementation as measured by the index. The strength of this relationship becomes negligible when the Brown Summit school is not included in the analysis.[23]

[21] Survey files for MPUSD did not include an indicator of the school in which the respondent taught.

[22] In the analyses, the percentage use or the index value was regressed on the factor of interest, along with indicator variables for school membership in Cohorts 1.5 and 2.

[23] Because the Brown Summit school has a strong influence on the size of many of the relationships shown, and has large regression residuals, Table 2.9 shows the coefficients representing the strength of the relationships between the factors and the level of implementation integrity estimated with and without including this school. It is a small school with selective admission, a low proportion of economically disadvantaged students, and a high proportion of students who were proficient or above in math prior to EIC. It is also the school with the highest implementation index value.

- The percentage of teachers with three or fewer years of experience is positively related to curriculum use. This may be because newer teachers are more likely to use the materials.

Table 3.9. Relationship Between Curriculum Use and Integrity Index and Selected School Characteristics, Controlling for Cohort in Guilford County Schools

Factor	Relationship with Curriculum Use[1]		Relationship with Integrity Index[1]	
	All Schools	Without Brown	All Schools	Without Brown
School size	-0.42[2]	-0.37	-0.51	-0.43
Percent economically disadvantaged	0.10	0.27	-0.33	0.01
Pre-EIC percent proficient or above	-0.09	-0.30	0.32	-0.10
Percent Black or Latin students	0.16	0.33	-0.26	0.09
Teacher retention	-0.25	-0.22	0.00	-0.21
Percent of teachers w/ 3-year exp or less	0.46	0.41	0.20	0.17
Principal change during EIC	0.18	0.18	-0.16	-0.19
Teacher perception of leader support	0.26	0.22	0.42	0.34
Teacher survey acceptance scale	0.28	0.24	0.03	-0.14

1. Standardized regression coefficient indicating the effect on implementation of a one standard deviation change in the school characteristic.
2. None of the coefficients are statistically significant at conventional levels when adjustment is made to account for the multiple comparisons using the same sample. The Benjamini-Hochberg test (Benjamini & Hochberg, 1995) was used to assess significance for the 9 comparisons made using a false discovery rate of .10.

- In MPUSD, it was not possible to identify a clear set of relationships between school characteristics and curriculum implementation.

In MPUSD, it was problematic to use quantitative analyses to assess potential correlates of 2023-24 implementation integrity due to the small number of schools and because the most successful school, the Dual Language Academy, had only 1 teacher observed. This school also had a different focus (two-way bilingual immersion) than the other schools. Further, it was also smaller and had the highest proportion of Latinx students and English learners. The school with the lowest integrity index and proportion of classrooms observed using the curriculum was Los Arboles. None of the characteristics we

considered differentiated this school from the others. The average of the integrity indices of the two schools that joined the project after the first year was slightly lower than that of the original three schools (1.1 versus 1.3) but the average of the proportions of classroom observed using the curriculum was nearly the same. Note that teacher survey results could not be included in the analyses since the school of the respondent was not collected when the survey was administered.

The key takeaway here is that though there was little heterogeneity in the level of support UnboundEd provided to the schools, there was noticeable heterogeneity in both districts in the level of curriculum material implementation as measured by the Integrity Walk ratings. While some of the differences may be noise due to factors such as how many classrooms were observed and the timing of the observations, the differences between the lowest and highest schools were substantial in both districts. In each district, one of the smaller schools stood out as the most effective implementor. While the sample size was too small to support definitive conclusions, it did appear that school size and teacher perceptions of school leadership support were related to implementation integrity in GCS.

Limitations

Several cautions should be kept in mind when interpreting the reported findings. With respect to survey findings, because the same group of teachers did not respond each year (especially in MPUSD), changes in individual teacher attitudes are confounded with changes in the teachers responding. While the averages reported do indicate the average perceptions in a school and how they changed, it is important to remember change (or lack thereof) could be due to both differences in individual teacher attitudes and in the respondent sample. Second, concerning teacher efficacy, an additional limitation is the use of only three response options for the efficacy items: not confident, somewhat confident, and highly confident. Other teacher efficacy scales commonly use six categories (e.g., Comstock et al, 2023; Sahli Lozano et al, 2023; Tschannen-Moran et al, 1998). It is possible that the lack of change observed is due in part to the relative insensitivity of this response scale. Some teachers may have been hesitant to choose the lowest level initially (since that would reflect badly on their competence), but not confident enough later to choose the highest. This effect is more likely in MPUSD where average teacher experience was low. In GCS, efficacy started out relatively high in each cohort and the limited number of response categories may have made the items insensitive to change. With respect to findings based on interviews, we were granted very limited time with school and district leaders. Especially in the case of school leaders, we were often unable to follow up on responses because of the limited time we had to cover the interview protocol. These interviews took place during program planning day lunch periods, and we aimed to be mindful of interviewee time by asking follow ups only when vital.

With respect to Integrity Walk ratings, again it should be remembered that the same teachers were not observed each year. Especially in MPUSD, many teachers who were observed in SY 21-22 were no longer at the same school in SY 22-23 or SY 23-24. (Only two teachers were observed in all three years and only nine in two of the three years.) Thus, the difference between the SY 21-22 and 22-23 average ratings do not reflect improvements in individual teachers' levels of implementation, but rather the difference in implementation at the school level, which could be due to either teacher learning or change in teachers. Second, relatively few teachers per school were observed and most teachers were observed only one or two times during a walk day. Another limitation is that the walk ratings were not recorded in a way that allowed an assessment of observer calibration. This means that if walk ratings had

low reliability, change over time would be harder to see. There is likely to be confounding of changes in teachers being observed with changes in teachers' level of implementation since the same teachers were not observed every year or even on every wave of walks. It is unclear if there was a systematic observation plan with the intent that all relevant teachers were observed at least once during each walk day. Because there were relatively few teachers observed per school per walk, the reliability of a school-level average is limited. This suggests caution in interpreting differences among schools. As a reference, for GCS average ratings, the standard error of measurement associated with school averages of the four integrity dimensions is approximately .14, and a 95% confidence interval would be +/- .279. Only two schools had averages that were above the upper confidence limit around the mean and only one was below this lower confidence limit.

Lastly, the baseline year for implementation integrity as represented by Integrity Walk ratings does not provide as reliable an estimate of integrity as 2023-24 ratings. We chose to use ratings from the last walk in 2021-22 as the baseline for examining the degree to which curriculum implementation changed during the period that schools were supported by UnboundEd. We chose this walk, rather than the first walk, because our initial examination of the walk data from SY 21-22 suggested that implementation declined between the first and final walks of that year, which seemed unlikely. UnboundEd staff indicated that walk observers changed their interpretations of the integrity rubrics as they learned more about implementing the materials with integrity, so that initial ratings may have been inaccurate. By the third walk, observers would be more likely to be using the rubric appropriately, since they would be more knowledgeable and well-calibrated by then. Though using walk 3 may underestimate the change (due to missing any improvement between walk 1 and walk 3), since walk 1 ratings were likely inflated, we believe that using them would also underestimate change. Note that walk 3 ratings were on average generally relatively low, suggesting a low level of integrity.

Summary and Conclusions on Curriculum Implementation

Despite the limitations discussed, the results presented above support the conclusion that the use of the curriculum materials improved over time as did the integrity of implementation. In both districts, integrity, as measured by Integrity Walks, was on average low in the first year of support then moved to at least a partial level by the last EIC year. Use improved in GCS Cohorts 1.5 and 2 and in MPUSD. In both districts, the level of integrity achieved in year 3 was fairly similar across schools, though two schools in GCS and one in MPUSD achieved markedly higher levels of integrity compared to the average school. These tended to have unique characteristics such as selective admission in GCS and dual language emphasis in MPUSD. In GCS, where we were able to explore correlates of integrity, smaller schools did better as did schools where teachers perceived school leaders were more supportive of the curriculum implementation, though these relationships were not statistically significant at conventional levels due to the small sample size.

District and school leaders generally perceived that use and integrity had improved over time. The increased knowledge of the curriculum by school leaders and the use of walks was perceived to have helped develop a common language for discussing math instruction.

Teacher acceptance of the curriculum and self-efficacy for instruction did not change appreciably across years, possibly due to teacher turnover. Acceptance was somewhat higher in MPUSD compared to GCS.

Section IV. Sustaining System Changes

This section presents findings related to the two districts' ability to sustain the curriculum and the district-level capacities developed through UnboundEd support. We used primarily qualitative (interview) data to address Evaluation Question 3:

Evaluation Question 3: What is the evidence that the districts can independently sustain the systems-level curriculum implementation improvement work as well as be able to scale it to other grade levels and subject areas?

Due to limitations districts placed on the time we had to interview district and school staff, we were not able to address all of the questions we had initially planned to explore. The evidence base available included a group interview with each District Implementation Team, an interview with each district Project Driver, and an interview with the Executive Sponsor in MPUSD[24]. We also were allowed to do short interviews with GCS and MPUSD School Leadership Team members during the 2024 Program Planning Days. The information we were able to collect supported the conclusions about sustainability presented below.

- Both districts intended to continue their efforts to implement the curricula around which their EIC work focused.
    - In GCS, district and school leaders expect the Open Up math curriculum will continue to be used.
    - In MPUSD, district leaders stated that the i-Ready math materials would continue to be used after the end of the EIC grant.

- Both districts were planning to apply the implementation processes and practices they developed with UnboundEd support to other grades and subjects.
    - In GCS, the walks, district leadership teams (DLTs), and school leadership teams (SLTs) are being applied to high school math and then into English Language Arts, though the walkthrough tool will not be used. Leaders also mentioned that the use of logic models for other math and ELA initiatives was influenced by work with UnboundEd.
    - In MPUSD, the DIT, SLT, and walks will be used to improve the implementation of high-quality instructional materials in both elementary and high school math. To that end, the district included high school leaders in some of the year 3 grade 7 and 8 Learning Walks. The district is already exploring applying these processes to English Language Arts at all three grade levels as well. MPUSD DIT members also cited UnboundEd organizational tools included in the Curriculum Implementation Toolkit and its revisions as applicable to other grades and subjects.

- In both districts, systems, processes, and relationships were developed that leaders perceived improved capacity to implement high-quality curricula in other grades and subjects after the EIC project ends.

[24] Repeated requests to interview the Executive Sponsor in GCS did not lead to the scheduling of an interview.

- In GCS, district leaders mentioned the DIT, methods of progress monitoring, and collecting implementation data (via walks) as processes they will continue as part of other strategic initiatives.
- In GCS, increased communication and common expectations between district departments about curriculum implementation were cited as capacities that would help sustain and support math curriculum implementation throughout the district. Building relationships among district-level staff and between them and school leaders was also seen as a capacity that will support other change initiatives. As one leader stated, the adaptive work through EIC has become the District's core problem solving approach.
- In MPUSD, leaders perceived the DIT, SLT, and walks as structures and processes that were effective and useful to continue. The data system developed with UnboundEd support was also cited as a method for ongoing monitoring of curriculum implementation in other grades and subjects, and as providing a tool for bringing together observations, survey data, and student assessment results to present a multifaceted picture of instruction.

- In both districts, Project Drivers or other members of the DIT appeared to be intending to continue to champion curriculum implementation and related instructional improvement work.

- District leaders saw the curriculum implementation work as supporting, rather than competing, with other initiatives.
  - In GCS, the work was perceived to be valuable in motivating conversations about alignment among district initiatives. It was also seen as supporting other district initiatives such as multitiered systems of support and school improvement goals. For instance, every school was given an 8th grade math goal connected to the curriculum implementation work.
  - In MPUSD, district leaders emphasized that the work was consistent with and reinforced the district's priority on improving coherence. The intent is that all students in each grade and subject experience high leverage instructional practices and curricula aligned to state standards. The work with UnboundEd helped them develop their vision for coherence and stimulated conversations about transitions across grades and how instruction should look at different grade levels.

- In both districts, improved capacity of school leaders to recognize curriculum implementation integrity was seen as a contribution to sustaining their efforts.
  - In GCS, school leaders were perceived to be paying more attention to instruction in their buildings, and to have learned how to give better feedback after observations. This is expected to benefit other curricular areas.
  - In MPSD, improved ability of school leaders to recognize good implementation and provide more specific feedback to teachers, and the development of a common language for discussing instruction, were cited as capacities which would apply to other

areas as well as contribute to maintaining focus on grades 7 and 8 math curriculum implementation.

- At the school level, the project was perceived to have raised expectations for effective instruction.
    - In GCS, district leaders mentioned that school leaders increased their focus on instructional leadership, and that principal supervisors have raised expectations for this.
    - In MPUSD, district leaders mentioned that the project had reinforced the expectation from school leaders and teachers that high-quality instructional materials were to be used and believed that this expectation will be carried over to other subjects and grades.
    - MPUSD school leaders mentioned that they had raised their expectations of teachers around curriculum implementation as they learned what good implementation looks like in practice.

- Several challenges to sustaining the work were identified, including teacher and school leader turnover and other demands on leader time.
    - School leader turnover was seen as a challenge by GCS district leaders. (Note that leader turnover in four schools was one reason these schools were removed from the initial EIC cohort.) GCS school leaders were also concerned about teacher turnover.
    - GCS leaders were also worried that principal supervisors and district support departments will not be able to maintain focus on curriculum implementation as other initiatives are rolled out.
    - In MPUSD, the high level of teacher turnover was cited as the biggest challenge. Turnover, and the subsequent use of substitutes, required school leadership teams to familiarize new teachers with the expectations for implementation and monitor their use of the curriculum materials, reducing the time and energy available to consolidate and improve the implementation of more experienced teachers.[25]
    - In addition, MPUSD school leaders mentioned the need for release time to allow teachers to participate in walks, and more time for themselves to do the walks. The danger of walks being cancelled due to other demands on administrators' time was a concern.
    - MPUSD school leaders also saw the loss of the instructional coaches funded by the EIC grant as increasing the demands on them to the potential detriment of sustaining focus on implementation.

[25] On the other hand, as suggested in Section III, less experienced teachers may have been more likely to use the materials. Thus, turnover could provide scope for increased use, if those who leave were less inclined to use the materials.

- Continuation of implementation monitoring via walks, teacher leadership, and raised expectations for instructional leadership and curriculum use were seen as potential contributors to sustaining high integrity curriculum implementation in the face of these challenges.
    - In GCS, teacher leaders were seen as having the potential to pass the learning from the project on to new teachers, though there was uncertainty about how this could be supported. In MPUSD, teacher professional learning communities were mentioned as a source of continuity, but there was concern about the need for more support for them.
    - Continuing with Integrity and Learning Walks (and providing results to teachers and school leaders) was seen as an important way to keep school leader and teacher attention on curriculum implementation.
    - Raised expectations for school leader instructional leadership and for teachers' use of high-quality curriculum were considered to help to sustain implementation in the face of competition from other initiatives.

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APPENDIX

I. Additional Information Regarding Acceptance of New Curriculum

Two factors were considered when deciding on whether to combine the items related to curriculum acceptance items into a scale. First, we calculated coefficient alpha, which provides a measure of the internal consistency of the items combined into a scale. For these items, alpha = .85-.89 for GCS. In contrast, a scale using the six items administered in MPUSD had an alpha of .76 or less. We also looked at the dimensionality of the potential scale using factor analysis. For GCS, all the items loaded at .50 or higher on a single factor which accounted for 90% of the variance. Given the small sample size in MPUSD, we did not apply factor analysis to these data.

Individual items making up the scale for Guilford County Schools and the percentages of respondents agreeing or strongly agreeing are shown below.

Table A1. Teacher Acceptance Items Used to Develop Acceptance Index for Guilford County Schools

A. Cohort 1

The Guilford County adopted curriculum, including Open Up Resources content and GCS provided materials...	2022	2023	2024
meets the district expectations of high-quality math instruction	72%	80%	76%
meets my definition of high-quality math instruction	59%	59%	53%
Can be implemented in a 70-minute period	58%	59%	59%
is easy to navigate	74%	78%	71%
promotes coherence of math concepts between courses	68%	64%	61%
is aligned to the district's math summative assessments (interim assessments)	72%	59%	57%
is aligned to the state's math summative assessments (NC EOGs and EOCs)	69%	51%	51%
N of Respondents	56-59	58-59	49

B.

B. Cohort 1.5

The Guilford County adopted curriculum, including Open Up Resources content and GCS provided materials...	2022	2023	2024
meets the district expectations of high-quality math instruction	72%	74%	67%
meets my definition of high-quality math instruction	58%	30%	50%
can be implemented in a 70-minute period	61%	41%	50%
is easy to navigate	68%	59%	79%
promotes coherence of math concepts between courses	77%	52%	71%
is aligned to the district's math summative assessments (interim assessments)	47%	50%	50%
is aligned to the state's math summative assessments (NC EOGs and EOCs)	42%	44%	64%
N of Respondents	18-19	25-27	14-15

C.

C. Cohort 3

The Guilford County adopted curriculum, including Open Up Resources content and GCS provided materials...	2023	2024
meets the district expectations of high-quality math instruction	71%	65%
meets my definition of high-quality math instruction	59%	50%
Can be implemented in a 70-minute period	67%	55%
is easy to navigate	66%	68%
promotes coherence of math concepts between courses	73%	65%
is aligned to the district's math summative assessments (interim assessments)	62%	61%
is aligned to the state's math summative assessments (NC EOGs and EOCs)	51%	52%
N of Respondents	66-68	62

D.

II. Teacher Efficacy Items Used in Analyses

Table A2.1. Guilford County Schools Teacher Survey Efficacy Items Used in the Analyses

Scale	CGS Item		2021-22	2022-23	2023-24
	How confident are you in…				
Math Pedagogy	helping students make sense of problems and persevere through solving them	Cohort 1 Cohort 1.5 Cohort 2	1.7 1.6 -	1.8 1.8 1.7	1.8 1.8 1.8
	helping students use appropriate tools strategically	Cohort 1 Cohort 1.5 Cohort 2	1.7 1.7 -	1.7 1.7 1.7	1.8 1.6 1.8
	integrating the following in your math instruction: launching OUR tasks in a way that maintains the cognitive demand for the students (i.e. does not do the math for the students but instead allows for a productive struggle from students)	Cohort 1 Cohort 1.5 Cohort 2	1.4 1.5 -	1.5 1.4 1.4	1.4 1.5 1.3
	integrating the following in your math instruction: using Mathematical Language Routines (MLRs) to support the language needs of all students (e.g. Info Gap, Discussion Supports, Collect and Display, etc.)	Cohort 1 Cohort 1.5 Cohort 2	1.4 1.4 -	1.5 1.3 1.5	1.4 1.6 1.4
	integrating the following in your math instruction: using just-in-time scaffolds when needed so that all students can access grade-level content.	Cohort 1 Cohort 1.5 Cohort 2	1.4 1.6	1.5 1.4 1.5	1.6 1.6 1.5
Classroom Social Support	integrating the following in your math instruction: creating an environment to promote positive social interactions among students	Cohort 1 Cohort 1.5 Cohort 2	1.7 1.8 -	1.7 1.6 1.8	1.9 1.8 1.8

Scale	CGS Item		2021-22	2022-23	2023-24
	integrating the following in your math instruction: using my students' experiences to make learning more meaningful	Cohort 1 Cohort 1.5 Cohort 2	1.6 1.6 -	1.7 1.6 1.7	1.7 1.7 1.6
	integrating the following in your math instruction: helping each student develop positive math identities, where they see themselves as math learners, thinkers, and doers	Cohort 1 Cohort 1.5 Cohort 2	1.6 1.6 -	1.6 1.5 1.6	1.7 1.5 1.5
	integrating the following in your math instruction: creating a safe environment for students to learn from their mistakes	Cohort 1 Cohort 1.5 Cohort 2	1.8 1.8 -	1.8 1.7 1.8	1.9 1.8 1.8
	integrating the following in your math instruction: helping each student feel like they are accepted in math class	Cohort 1 Cohort 1.5 Cohort 2	1.8 1.8 -	1.8 1.7 1.8	1.9 1.9 1.8
N		Cohort 1 Cohort 1.5 Cohort 2	58 18-19	59 26-27 66-67	49 14-15 62

Response categories: 0 = Not confident, 1 = Somewhat confident, 2= Highly confident.

Table A2.2. Monterey Peninsula Unified School District Teacher Survey Efficacy Items Used in the Analyses

	MPUSD Item	2021-22 N=11	2022-23 N=13	2023-24 N=11
	How confident are you in…			
Math Pedagogy	helping students explain their reasoning or thinking in solving a problem	1.5	1.5	1.5

	MPUSD Item	2021-22 N=11	2022-23 N=13	2023-24 N=11
	helping students connect to prior math learning to fill in learnings gaps	1.2	1.6	1.4
	helping students persevere in solving problems	1.3	1.5	1.5
	helping students focus on conceptual understanding of math they are learning	1.0	1.5	1.3
	helping students engage in mathematical discourse with peers	1.2	1.3	1.4
	helping students critique their peers' work (Ex: Discuss it)	1.0	1.1	1.1
	provid(ing) language support for student discourse	1.3	1.4	1.3
	How confident are you in integrating the following in your math instruction?			
Classroom Social Support	Helping each student develop positive math identities; meaning identifying as math learners, thinkers, and doers	1.6	1.5	1.6
	Creating an environment of trust in the classroom	1.7	1.8	1.7
	Helping each student feel like they are accepted in math class	1.6	1.8	1.6
	Creating a safe environment for students to learn from their mistakes	1.7	1.8	1.7
	Adapting instruction to meet the specific learning needs of each student	1.4	1.5	1.4
	Creating an environment to promote positive social interactions among students	1.5	1.6	1.5

	MPUSD Item	2021-22 N=11	2022-23 N=13	2023-24 N=11
Culturally Sensitive Pedagogy	Creating an environment for learners of diverse backgrounds and identities to work together	1.5	1.5	1.5
	Adapting instruction to meet the needs of learners from diverse racial/ethnic backgrounds	1.2	1.5	1.2
	Adapting instruction to meet the needs of learners from diverse socio-economic backgrounds	1.3	1.6	1.3
Culturally Sensitive Pedagogy	Analyzing instructional materials for potential stereotypical and/or prejudicial content	1.0	1.3	1.0
	Developing activities designed to increase the self-confidence of students from various racial/ethnic backgrounds	1.2	1.3	1.2
	Developing activities designed to increase the self-confidence of students from various socio-economic backgrounds	1.3	1.8	1.3
	integrating the following in your math instruction? Developing activities designed to increase the self-confidence of students of various genders/gender identities	1.2	1.9	1.2
	integrating the following in your math instruction? Explaining concepts using examples that are taken from students' everyday lives and/or cultural backgrounds and leveraging their funds of knowledge	1.5	1.5	1.5
	integrating the following in your math instruction? Identifying cultural biases in textbooks or other instructional materials	1.0	1.2	1.0
	integrating the following in your math instruction? Creating an environment with positive, non-stereotypical displays about different languages and cultures	1.3	1.5	1.3

	MPUSD Item	2021-22 N=11	2022-23 N=13	2023-24 N=11
	integrating the following in your math instruction? Designing lessons that show how different cultural groups developed and/or used mathematics]	1.2	1.3	1.2

Response categories: 0 = Not confident, 1 = Somewhat confident, 2 = Highly confident.

III. Implementation Integrity Rubrics

Table A3.1 Implementation Integrity Dimensions as Defined in UnboundEd Integrity Walk Rubrics Used in Guilford County Schools

Dimension	Year 1 Rubric Definition	Year 2 Rubric Definition	Year 3 Rubric Definition
Lesson Structure	Teacher follows the structure of the lesson in the adopted curriculum and uses terminology from the curriculum. (Ex. Warm-up, activity launches, activity and lesson syntheses, and cool-downs)	Does the teacher follow the structure of the lesson in the adopted curriculum and use terminology from the curriculum?	Clear teaching and learning path for the lesson (e.g., Learning Objectives, Learning Activities, Pacing, Checks for Understanding)
Teacher Routines	Teacher uses routines specific to the curriculum (Ex. Notice and Wonder, Math Talk, Which One Doesn't Belong, Card, MLR1: Stronger and Clearer Each Time; MLR2: Collect and Display; MLR3: Clarify, Critique, Correct)	Does the teacher execute the routines specific to the curriculum?	Specific and repeatable strategies used to help students access, engage with, and internalize content in a structured way (e.g., Jigsaw, Discussion supports, Three Reads)
Student Engagement	Evidence students are familiar with routines and activities (Ex. Students engage in pairs. Students explain their thinking in the synthesis portion of the lesson)	How many students participate and complete the major work of the lesson?	Students take part in learning activities that allow them to interact with grade-level content standards.
Pacing		Does the pacing within the lesson follow the curriculum and preserve time for students to do the thinking, writing, and independent work of the lesson?	
Adaptations			Adjustments to the content, routines, and student work products.

Table A3.2 Implementation Integrity Dimensions as Defined in UnboundEd Integrity Walk Rubrics Used in Monterey Peninsula Unified School District

Dimension	Year 1 Rubric Definition	Year 2 Rubric Definition	Year 3 Rubric Definition
Lesson Structure	Teacher follows the structure of the lesson in the adopted curriculum and uses terminology from the curriculum. (Ex. Warm-up, activity launches, activity and lesson syntheses, and cool-downs)	Does the teacher follow the structure of the lesson in the adopted curriculum and use terminology from the curriculum?	Clear teaching and learning path for the lesson (e.g., Learning Objectives, Learning Activities, Pacing, Checks for Understanding)
Teacher Routines	Teacher uses routines specific to the curriculum (Ex. Notice and Wonder, Math Talk, Which One Doesn't Belong, Card, MLR1: Stronger and Clearer Each Time; MLR2: Collect and Display; MLR3: Clarify, Critique, Correct)	Does the teacher execute the routines specific to the curriculum?	Specific and repeatable strategies used to help students access, engage with, and internalize content in a structured way (e.g., Jigsaw, Discussion supports, Three Reads)
Student Engagement	Evidence students are familiar with routines and activities (Ex. Students engage in pairs. Students explain their thinking in the synthesis portion of the lesson)	How many students participate and complete the major work of the lesson?	Students engage with grade-level content throughout lesson in a variety of ways.
Content Engagement			Teachers provide a variety of learning activities to promote student interaction with grade-level content standards.
Pacing		Does the pacing within the lesson follow the curriculum and preserve time for students to do the thinking, writing, and independent work of the lesson?	
Adaptations			Adjustments to the content, routines, and student work products.

Note that we used only the three dimensions common to all years in the analysis of change over time.

IV. Descriptions of NIRN Surveys

The Implementation Team Survey consisted of 18 self-report items administered by NIRN once each year to district implementation team members to collect data on organization capacity, including team functioning, communication, and use of data. The Implementation Leadership Survey was a twelve-item survey administered by NIRN once each year to members of the school implementation teams to measure their support for and perceptions of the curriculum being implemented. The teacher survey was administered each spring by the districts. It was intended to gather information about teachers' experiences implementing the curriculum, with math instruction, and their self-efficacy to enact teaching practices related to the curriculum. It was designed by NIRN but was customized for each district to fit the curriculum being used and with district policies on survey burden. The version used in MPUSD included more items related to culturally-sensitive pedagogy that were not administered in GCS. Items used a variety of response formats.