Actionable Evidence Initiative Case Study

Lessons from a Minnesota Networked Improvement Community

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PROJECT EVIDENT

The Actionable Evidence Initiative

Led by Project Evident with funding from the Bill & Melinda Gates Foundation, the Actionable Evidence Initiative seeks to understand and remove barriers to building evidence that is equitable, useful, credible, and relevant for practitioners as they aim to improve the outcomes of students who are Black, Latino/a/x, or experiencing poverty. Please visit https://www.projectevident.org/actionable-evidence to learn more, join our network, and find partners interested in working together on actionable evidence solutions.

Actionable Evidence in Education Cases

This case is one in a series commissioned by the Actionable Evidence Initiative in 2020 and 2021. (Cases are published on the Project Evident website.) The series illustrates how researchers, evaluators, practitioners, funders, and policymakers across the country are exemplifying principles of the Actionable Evidence framework. It profiles a range of settings, actors, learning questions, methods, and products, unified by a commitment to practitioner-centered, timely, practical, equitable, and inclusive evidence building. Each case describes the origins, development, and results of a research or evaluation project, along with the authors' reflections on their experiences. Our hope is that these cases will provide both inspiration and practical guidance for those interested in generating and using evidence that leads to better and more equitable outcomes for youth and communities.

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Actionable Evidence in Education: Lessons from a Minnesota Networked Improvement Community

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Executive Summary

In the 2019-2020 school year, the Regional Educational Laboratory (REL) Midwest, in partnership with the Minnesota Department of Education, facilitated a networked improvement community (NIC) of four State-Approved Alternative Programs (SAAPs). SAAPs serve students at risk of not graduating high school and have much lower graduation rates on average than traditional high schools. Organized around a long-term goal of raising graduation rates at participating schools, the NIC's work aligned with actionable evidence principles:

- The NIC was data-driven and participant-centered and therefore **grounded in practitioner learning needs**. The NIC teachers selected the evidence-based practice of one-on-one student goal setting as the "change idea" or intervention to implement and test over the course of the project.

- The NIC structure **enabled timely improvements** in instructional practice. With support from REL Midwest facilitators, participants engaged in three rapid cycles of testing, developed and carried out implementation plans, and tracked data.

- The cycles of small-scale testing provided an **accessible and user-centered** approach to analysis and interpretation. After each implementation period, participants convened as a full group. They discussed patterns in the data and used data-based observations to modify implementation plans and assess their success in meeting targeted student outcomes.

- Participation in the NIC **built participants' capacity for continuous research and development.** By the last implementation cycle, nearly all NIC teachers came to see the relevance of documenting, analyzing, and reflecting on the data they collected and how they could use it to improve implementation and instruction. NIC participants learned to use the tools of implementation science, which they can use to test interventions in their classrooms.

Anecdotal evidence from NIC teachers and administrators suggests that the goal-setting activity positively impacted student mindset and self-confidence, trust between students and teachers, and teachers' ability to connect with their students. At the time of this writing, data were not yet available to measure change in graduation rates since NIC implementation.

About the Project

Origins: A Networked Improvement Community to Address Challenges to High School Completion

In Minnesota, State-Approved Alternative Programs (SAAPs) provide educational experiences for about 16 percent of K-12 students, serving some of the state's most vulnerable youth (MDE, n.d.).[1] By legislative statute, SAAPs serve students at risk of not graduating high school in four years because they are behind in credits or meet other high-risk criteria (e.g., pregnancy, substance addiction, mental health problems; Minnesota Statutes, 2020). In 2017, SAAPs had a six-year graduation rate of 62 percent compared with 92 percent for traditional high schools (Bradley et al., 2019). SAAPs in Minnesota also serve significantly larger proportions of students of color, students with limited English proficiency, and students who qualify for free and reduced-price lunch (Nobles et al., 2010).

In 2018, the Regional Educational Laboratory (REL) Midwest partnered with the Minnesota Department of Education (MDE) SAAP support staff to better understand the challenges SAAPs face supporting students to high school completion. With support and coaching from REL Midwest, MDE staff conducted a statewide scan of the programs and strategies that high schools use to help students recover course credits (credit recovery) (Bradley et al., 2019). The report highlighted the challenges for SAAPs in serving vulnerable students with often resource-stretched programming. It also uncovered that staff from these programs were looking for ways to share knowledge with each other about effective credit recovery strategies. SAAP staff were also interested in moving away from seat-based credit recovery options towards alternatives such as project-based learning and competency-based assessment.[2]

> " With the new ESSA requirements, many, many, many state-approved alternative high school programs were identified for support under the criteria that the Minnesota Department of Education put out under ESSA. We turned to REL Midwest to say we would like to know more about what's going on in the state. There are 500 programs, 200 of which provide credit recovery in the state, all over the state, and so we needed to get an idea of what does credit recovery look like in Minnesota.
>
> Alternative and Extended Learning Specialist, MDE

The Promise of a Networked Improvement Community

The REL Midwest/MDE credit-recovery scan identified a need for implementing mechanisms at SAAPs that result in meaningful changes in the way teachers engage students in learning (Bradley et al., 2019). The scan's findings showed that SAAPs would need support to identify, implement, and monitor evidence-based strategies to improve outcomes.

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[1] State-Approved Alternative Programs in Minnesota include: Area Learning Centers (ALC), Alternative Learning Programs (ALP), Contracted Alternatives, and Targeted Services for students in kindergarten through grade eight (MDE, n.d.).

[2] Competency-based education involves student autonomy in learning experiences; timely, relevant and actionable assessments; differentiated student support based on need; progress based on mastery; varied pacing and different pathway options; educational equity; and rigorous common expectations (Levine & Patrick, 2019).

REL Midwest and MDE agreed that developing a networked improvement community (NIC) was a promising strategy to address this need. A NIC could provide rapid innovation resulting in long-term and lasting impacts in instructional practice. NICs are grounded in improvement science, which supports rapid-cycle research and development by implementing Plan, Do, Study, Act (PDSA) cycles. PDSA cycles provide a structure for NIC participants to track, interpret, analyze data, and use the analysis to inform daily instructional practice (Bryk et al., 2015). Because the NIC's goal was to help teachers identify and refine effective strategies, it centered on teacher instructional practice with support and guidance from school administrators. As researchers, we know that meaningful long-term changes in teacher practice require that teachers are invested in making changes and have autonomy and responsibility for making changes. NICs, by design, are member-driven, and the NIC structure supports innovation by breaking down silos that typically exist (within and between schools) by focusing on collaboration and sharing across school contexts.

Partners

In the spring of 2019, MDE and REL Midwest partnered to recruit members for the 2019-2020 Minnesota Alternative Learning Center NIC (henceforth referred to as "the NIC"). MDE and REL Midwest recruited SAAPs in reasonable proximity to MDE (i.e., within the Minnesota Twin Cities metropolitan area) to allow all participants to meet in person. The NIC participants were administrators and teachers responsible for credit recovery at their SAAP. The NIC ultimately comprised four administrators and 30 teachers divided into eight teams across four SAAPs. (See Appendix.) Each SAAP serves at-risk students in grades 9-12 in the Twin Cities area. The intent was that the NIC would span two academic years, 2019-20 and 2020-21.

By agreeing to participate in the NIC, participants committed to attending six in-person full group sessions and three virtual SAAP-specific sessions. NIC teachers committed to participating in the PDSA cycles, collecting data, and sharing with other participants during the sessions. NIC administrators committed to allowing their teachers to participate in the sessions and facilitating their teachers' implementation of the change idea, providing additional resources where feasible.

The NIC was made possible by the partnership between REL Midwest[3] and MDE and specifically by the partnership between the REL Midwest Career Readiness Research Alliance and MDE SAAP support staff.[4] REL Midwest researchers and coaches acted as the "hub" for

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[3] The Regional Educational Laboratory (REL) Midwest, one of ten RELs in the United States, works to bridge the worlds of education research and practice and build a more evidence-based education system in the Midwest region. The work of REL Midwest includes facilitating research-practice partnerships; conducting applied research; and offering training, coaching, and technical support.

[4] The REL Midwest Career Readiness Research Alliance (MCRRA) is a partnership which brings together practitioners, policymakers, and researchers from the Midwest to increase the region's capacity to access, conduct, interpret, and make sense of career readiness research, as well as to use this research in state- and local-level decision making. Additionally, the alliance seeks to examine and address the opportunity gaps experienced by certain student groups. MCRRA's primary focus is career readiness in Minnesota. In addition, a community of practice connects key stakeholders across the region and is an active partner in the research process (REL Midwest, n.d.).

the NIC, providing facilitation and support for NIC participants as they implemented improvement science methodologies, selected evidence-based change ideas, and developed measurement strategies.

Approach

Identifying Problems and Possible Solutions

MDE set the high-level goal for the NIC: to raise overall graduation rates at all participating schools. However, the NIC participants set the NIC's focus, or aim statement; short-, long-, and medium-term goals; and measurement strategies. Over a series of three initial meetings facilitated by REL Midwest, NIC members defined the NIC scope, goals, and focus. First, school administrators and teacher leaders met and collaboratively wrote the NIC's aim statement (i.e., long-term goal). This task involved much discussion on why the term "graduation rate" for a 4-year cohort was problematic in the SAAP context, as students entering these programs are off-track to earn enough credits to graduate within four years. Over the course of two sessions, the NIC members came to a consensus on the language of the aim statement: *"By spring of 2021, we will increase the percentage of students that graduate with the necessary habits, skills, and knowledge by 20%."* This aim statement notably excludes the 4-year cohort language and reflects the specific attributes that NIC members sought to cultivate in students through this work. As a byproduct of these conversations with the NIC, MDE staff began to discuss how measuring student success at SAAPs using the standard graduation rate metric was problematic, and how the issue could be addressed at the state level to provide a more appropriate measure of SAAP student success.

> " I want networked improvement communities to just be more accessible to more teachers and more schools. I want to see a new type of policymaking and changing in schools and classrooms, where teachers are able to look at the research, and look at the data, and change based on that. And they feel empowered to use a NIC model, where they're reflecting and talking with other people to enact change that is meaningful to them and their students.
>
> NIC Facilitator

In the NIC's first two meetings, participants conducted a root cause analysis of barriers to student credit recovery and completion. The teacher teams discussed common experiences serving their communities' most vulnerable students. The root cause analysis identified socially constructed challenges (e.g., stigmatization and racism) and within-school challenges (e.g., a lack of connection to course material and adults at their schools) faced by their students.

They then sorted the challenges into broader categories, such as health, school system, attendance, prior learning, and poverty. From these categories, they identified the ones they felt they could impact through instructional practice (e.g., addressing learning gaps and attendance). Using the refined set of categories, they determined broad strategies, or "drivers," that could improve student skills and knowledge to be successful in school (addressing the aim of the NIC), could be implemented, and would support the tracking of implementation efforts and immediate and long-term outcomes for students. The NIC members then voted on

which of the secondary drivers the NIC would focus on in the first year (see Exhibit 1). They selected "setting clear expectations for student behavior and work."

Exhibit 1. The NIC's aim statement and primary and secondary drivers
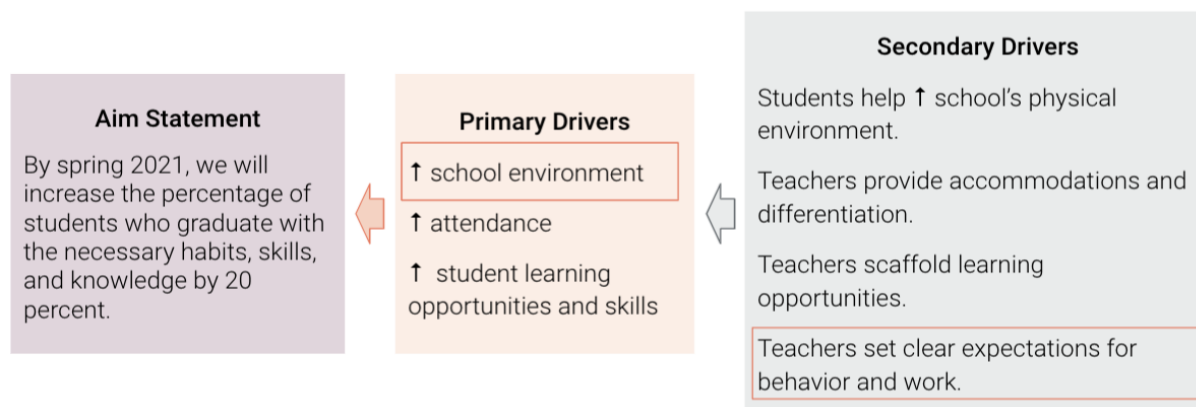
REL Midwest facilitators used the aim statement and drivers to construct the NIC's theory of action, the theory of how the NIC's work would lead to changes in short-, medium-, and long-term outcomes (see Exhibit 2). NIC members then reflected on and refined the theory of action. Lastly, REL Midwest facilitators consulted with competency-based education (CBE) experts and explored the What Works Clearinghouse to find promising evidence-based practices shown to be associated with positive changes in the school environment and setting clear expectations for student behavior and work (i.e., the areas of the NIC's primary and secondary drivers). The facilitators presented several possible change ideas to the NIC, along with the evidence base behind each strategy. After a brief discussion, the NIC members agreed that one-on-one goal setting was a promising intervention that they could envision implementing with their students.

Exhibit 2. The NIC's theory of action
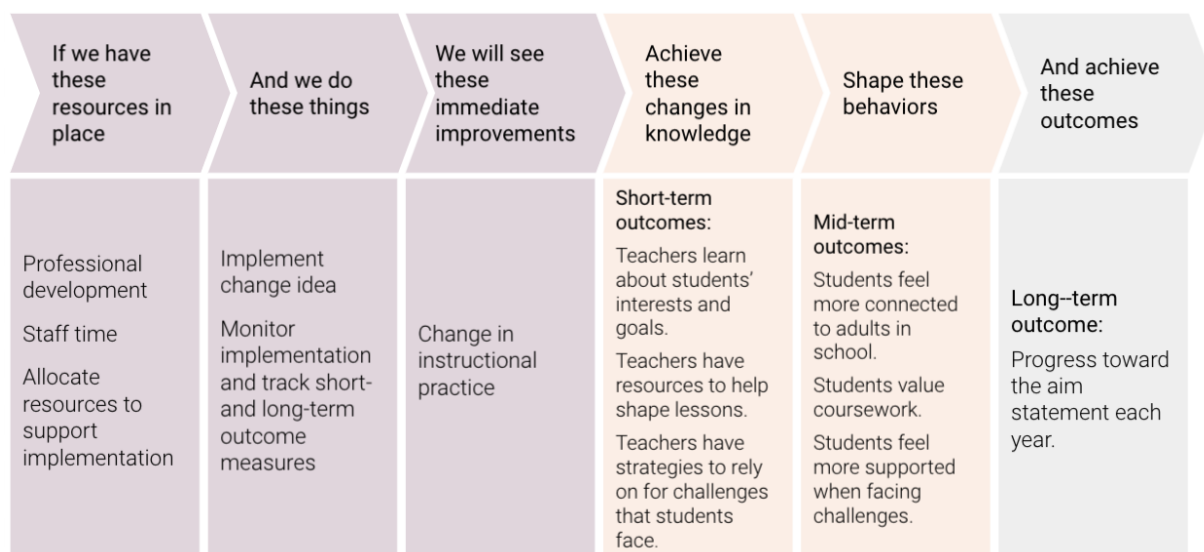
A Promising Change Idea: One-on-one Student Goal Setting

Student goal setting is a practice that educators can use to help students increase their agency, intrinsic motivation, and ability to manage their learning.[5] In the one-on-one goal-setting intervention, NIC teachers provided scaffolding to help students set challenging (but achievable), proximal, and specific goals. Importantly, students had autonomy over the goals they set. To track goal setting, the NIC teachers had their students fill out weekly GOAL-setting sheets (see Exhibit 3).[6] At the beginning of the week, the student recorded their goal and why they selected it (**G**oal for this week and **O**bjective). Each day, they marked their daily progress in meeting their goal (i.e., "on-track" or "off-track"). At the end of the week, they recorded their reflections on whether they met their goal and what they might change in the next cycle (i.e., **A**ffirmations and **L**essons learned). NIC teachers collected aggregated data on student goal setting. They brought these data to the full-group NIC sessions to reflect on during the "study" portion of the PDSA cycle.

Exhibit 3. Example GOAL-setting sheet

Beginning of week									
Goals for this week: What will you accomplish by the end of the week?									
Objectives: Why is this an important goal for you? What are my most important reasons for this goal?									
Daily reflection									
Monday		Tuesday		Wednesday		Thursday		Friday	
On track	Off track	On track	Off track	On track	Off track	On track	Off track	On track	Off track
End of week reflection									
Affirmations: What am I proud of myself for this week? What were my wins? What targets did I reach?									
Lessons learned: What were some of my learnings this week? What mistake was a learning opportunity? What could I do differently in the future based off this reflection?									

NIC teachers had each student participating in the goal-setting activity complete the "Goal for this week" and "Objectives" sections at the beginning of the goal-setting period.

Each weekday, the student would complete the "Daily Reflection" section and mark whether they were "on-track" or "off-track" for meeting their goal.

At the end of the goal-setting period, the students completed the "Affirmations" and "Lessons learned" portions of the sheet. The teacher was responsible for maintaining the sheets and supporting the students as they completed their sheets. The teacher compiled data from the sheets to determine how many students met or made progress toward completing their goals each implementation cycle.

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[5] Research on student goal setting has shown associations between this practice and positive outcomes for students across various subjects (e.g., reading, writing, foreign language, social studies, science, and mathematics) and different ability levels (Midwest Comprehensive Center, 2018). In their practice guide, "Preventing Dropout in Secondary Schools," the What Works Clearinghouse includes student goal setting as an evidence-based strategy for teachers to foster student engagement (What Works Clearinghouse, 2017). The CASEL organization also lists goal setting in their Framework for Social and Emotional Competencies as a capacity under the self-management competency (CASEL, 2020). In addition, research shows that a goal-setting process that incorporates additional steps, including planning, student self-evaluation of performance, regular feedback, and reflection, is associated with positive student outcomes (Midwest Comprehensive Center, 2018).

[6] REL Midwest sourced the initial GOAL-setting sheets from sample templates found online from open source websites. The sheets were modified by facilitators and teachers throughout the project.

Data and Analysis

We used three levels of data to evaluate the work of the NIC. The first level of data was of immediate practical measures (i.e., short-term outcomes), collected via GOAL-setting sheets and PDSA Trial Tracker forms. These data included the number of students teachers tracked during each PDSA cycle, how many of these students set a goal, how many they checked in with, how many completed their GOAL-setting sheet, how many did their reflection, and how many demonstrated evidence of achieving their goal. These data informed the decisions the teacher took in the next cycle. For example, suppose a teacher notices that they had not checked in with all the students individually during the week. In that case, they might decide to reduce the number of students they work with in the next cycle or implement a new plan for when and how often they meet with each student.

The second level of data collection focused on medium-term outcomes. The NIC's theory of action was that participating in the goal-setting activity would result in students feeling more connected to adults in their school, seeing the relevance of setting goals, and feeling more successful and motivated. We used the 20-minute Student CBE Experience Survey, part of the [CBE 360 Survey Toolkit](#) developed by researchers at the American Institutes for Research, to assess goal setting. We administered this survey to students who participated in the goal-setting intervention before and after the intervention to measure the change in student perceptions. We administered the 20-minute Teacher CBE Practices Survey, also part of the CBE 360 Survey Toolkit, to measure student-teacher trust and the level of autonomy teachers allowed students to have over their learning.

> " Every week, we are taking a look and seeing how [the students] did, versus how we were doing it in the past, which was a big goal at the beginning of the trimester. And now, we are moving towards, okay, what are the small steps that we can take to accomplish a goal this week? So, they are feeling more success. They have been told their whole lives that goal-setting is important, but now, we're actually doing it in a meaningful way.
>
> NIC Teacher

The third level of data collection focused on the NIC's long-term aim statement. The long-term measures for the NIC were numbers of credits recovered or completed within two years and 2021 graduation rates. School-level graduation rates are publicly available from the Minnesota Department of Education Minnesota Report Card. However, at the time of this writing, data were not yet available to measure changes in graduation rates since the implementation of the NIC.

Engagement in the Research Process

It was important that all NIC members had the opportunity to weigh in, reflect on, and discuss every decision in defining the NIC's focus and goals, change ideas, and measurement strategy. Because the NIC comprised alternative school teachers, this aspect of decision making and discussion was particularly critical. There is a stigma attached to alternative schools because the students they serve are often marginalized and underserved in mainstream high schools. We learned from the NIC teachers that they frequently felt similarly

different from mainstream high school educators because of this. The existence of these assumptions made emphasizing the participant ownership of the NIC all the more crucial. Because NIC participants were deeply involved in the process and had a say in shaping the NIC, they also had a deeper understanding of its methodology. Perhaps more importantly, it put them at the center of deciding the intervention and how they implemented it.

> " I also felt at times, particularly these are alternative school teachers and they tend to have a little authority issues, myself included, so just being able to say 'ok, we're going to make this our own' was important. And I think that happened.
>
> NIC Administrator

Though the root cause analysis and selection of drivers primarily involved administrators, NIC teachers were at the center of decision making, data collection, analysis, and interpretation. During each full group session, teacher teams worked together to aggregate data, look for patterns in outcome measures and implementation measures, discuss how to adjust practice, and identify the supports and changes they would implement in the next PDSA cycle (see Exhibit 4 for an example of an implementation plan). Teachers' decisions around implementation also included which students to include in the goal-setting intervention each PDSA cycle and in which class periods to leverage to implement goal setting (e.g., advisory group, core classes, guidance counseling periods). Administrators attended these sessions to learn what resources and support teachers needed for the next implementation cycle.

Exhibit 4. Example implementation plan
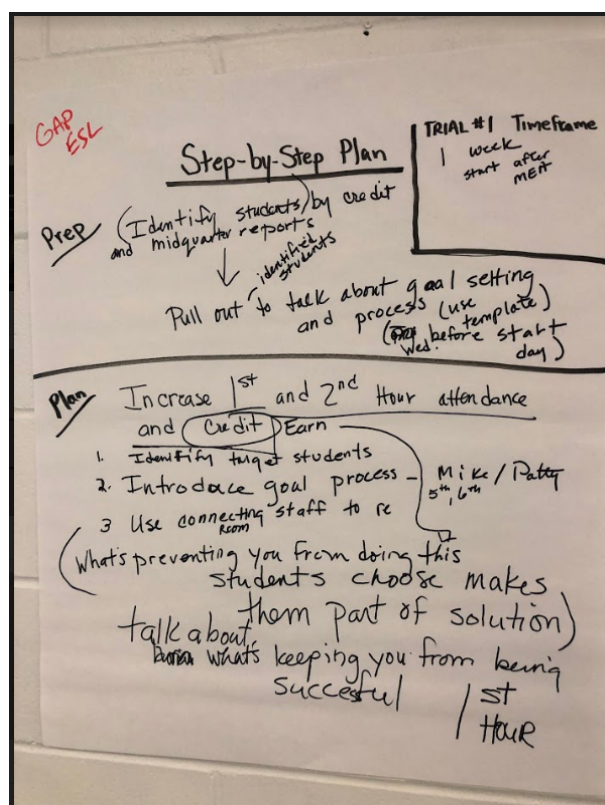
REL Midwest facilitators provided the structure for data discussions and provided one-on-one support on modifying each team's implementation approach while also ensuring the intervention's core components remained central to implementation. During full group meetings, facilitators presented additional strategies that teachers could scaffold onto the change idea (e.g., using the growth mindset strategy of performance-based praise instead of ability-based praise when students demonstrated progress). In monthly small group meetings, teacher teams would meet with REL Midwest facilitators to discuss minor modifications to implementation and problem solve as the PDSA cycle progressed. REL Midwest facilitators served as sounding boards to support teachers in realizing their direction for implementation. Outside of the full and small group meetings, REL Midwest facilitators tracked medium- and long-term outcomes. They also provided data visualizations such as pre-/post-intervention survey results and trends in credit recovery rates. The facilitators were in contact with school staff and accessible between sessions.

> " My favorite part, so far, has been the chance for the teachers to meet with other schools that are facing some of the similar issues that they are, and have some people to talk to about that. I am new to this process. And it's been very enlightening. And I think it's eventually going to make me a better educator.
>
> NIC Teacher

Lastly, creating a structure for members to share and collaborate is fundamental in the NIC design. Teachers are often siloed from their colleagues, and the case was no different for our alternative program teachers. NIC participants remarked on how pleasant it was to see how other SAAPs functioned. To create a space for the NIC members to share their lived experiences, we asked each school to host a full group meeting at their location. Unfortunately, due to inclement weather and scheduling conflicts, only two schools ended up hosting large group meetings during the year. However, the teachers really enjoyed seeing the physical locations of other schools. Over time, participants became more open with each other in full group sessions, often candidly sharing anecdotes about their interactions with students during goal setting.

Building Capacity
Participation in the NIC expanded the capacity of educators to apply improvement science to their instructional practice, even outside of NIC-related change ideas. Our ongoing projects with NIC schools focus on integrating new evidence-based practices using PDSA cycles and training school administrators to facilitate PDSA cycles with their staff.
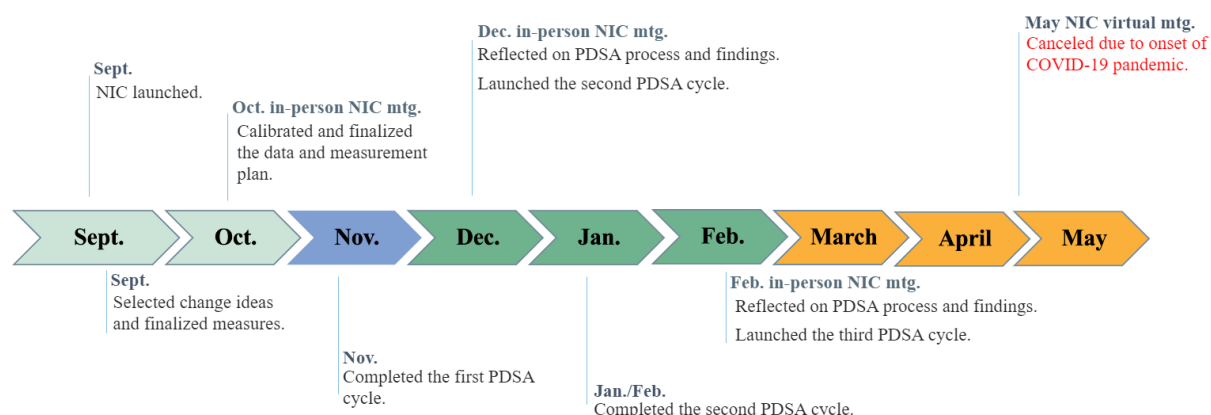
Building Capacity to Use Data in Instructional Planning
Over eight months, NIC teachers completed three PDSA cycles (see Exhibit 5 for a timeline of the NIC). Over time, teachers became more adept at aggregating their data, discussing patterns in student data (e.g., GOAL-setting sheets, student reflections) and implementation data to determine the next best implementation steps. During this process, some teachers shared that they were looking for practical measures in their data in other practice areas.

Teachers became skilled at integrating the PDSA cycle and using data to guide their practice through the facilitated PDSA cycles.

Exhibit 5. NIC timeline

2019/20 Timeline

Dec. in-person NIC mtg.
Reflected on PDSA process and findings.
Launched the second PDSA cycle.

May NIC virtual mtg.
Canceled due to onset of COVID-19 pandemic.

Sept.
NIC launched.

Oct. in-person NIC mtg.
Calibrated and finalized the data and measurement plan.

| Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | March | April | May |

Sept.
Selected change ideas and finalized measures.

Nov.
Completed the first PDSA cycle.

Jan./Feb.
Completed the second PDSA cycle.

Feb. in-person NIC mtg.
Reflected on PDSA process and findings.
Launched the third PDSA cycle.

Note: Between sessions, REL Midwest facilitators were available via email or phone to address NIC administrators' or teachers' questions.

While the intention was for the NIC to continue for two academic years, the COVID-19 pandemic struck at the close of the first year, disrupting this plan. After a summer of global panic, social unrest, and a flurry of efforts to figure out how to reconvene schools, two of the four schools returned for a second year. In 2020-2021, the NIC's work was expanded to scaffold a second change idea and to train the school administration to facilitate the PDSA cycles with their staff. Through this extension of the NIC work, we trained more instructional staff on using the implementation science tools while working directly with the school administrative teams to continue this work well after the project ends. REL Midwest has also facilitated additional projects for NIC schools around data literacy and telling a story through data. In 2020-2021, REL Midwest also established a virtual NIC of rural SAAPs geographically spread throughout the state. The virtual NIC focuses on social-emotional learning as a mechanism to raise graduation rates.

Project Cost

REL Midwest is funded by a multi-year contract from the Institute for Education Sciences to support assistance for state and local education agencies. The project described in this case study combined technical assistance coaching with research into evidence-based practices and measurement strategies. Four REL Midwest facilitators developed materials for each session and held full group and individual consultations. Facilitators each spent approximately 16 to 24 hours a month supporting NIC members and developing materials for sessions over the period of 10 months. Both the intervention and data tracking mechanisms were relatively low-tech and used Google Forms or paper and pencil. The work of supporting the NIC on the part of REL Midwest facilitators that was crucial was researching the evidence

base behind change ideas, identifying reliable and validated measures whenever possible, and continually researching strategies to scaffold onto each other to address the aim of the NIC.

Participating schools committed to six three-hour full network meetings and bi-monthly hour-long check-in sessions with the REL Midwest facilitators. Schools most frequently leveraged planning time for teachers to participate. No additional compensation was provided to teachers or staff in the NIC. The administrators committed to the NIC with the understanding that they would provide support for teachers (e.g., additional planning time, supplies for the change idea) without compensation from REL Midwest.

Challenges and Responses

The biggest challenge faced by the NIC was the **onset of the COVID-19 pandemic**. In the spring of 2020, NIC administrators understandably pushed back on continuing with the NIC due to the added strain on their faculty. Therefore, the NIC did not hold its final session in May 2020 or its closing event where participants were to share their experience with invited MDE staff.

Although participants agreed that improving credit recovery rates and getting students to graduate high school was an important goal, the NIC was challenged by **a lack of teacher engagement at the beginning of the project**. In some cases, this resulted from over-burdened teachers initially viewing their participation as just the "next thing" they were being tasked to implement. In addition, when discussions first began on crafting the NIC's aim statement, administrators pushed back against what they saw as language that stereotyped SAAPs. As facilitators, we emphasized our role in scaffolding their processes. We let participants know from the beginning and frequently reminded them that the NIC was participant-driven and informed by their experience. This structure included them having a say in all aspects of the NIC, from the aim statement to the implementation. As the sessions went on, most participants began to believe that this was true.

> " The most challenging aspect of the NIC project over the last year for me, as the administrator, was one, talking people into doing it, you know, adding it to their already full plate. So, there was a bit of sales. There was a process. And following the process wasn't always easy. School team, as a school staff, as a community, we came together. And it really pushed us to look at things differently, and to find new ways of doing things that are going to make us better.
>
> NIC Administrator

Finally, the NIC was challenged by **an initial lack of trust in and knowledge of using data to inform practice**. We had several initial conversations with participants whose data experience was limited to looking at student test scores or who lacked previous training in using data to inform practice. We spent a lot of time helping participants one-on-one develop ways to integrate data collection into their routine. Participants were able to tailor their data collection to fit their practice. For example, though the initial GOAL-setting sheet tracked weekly goals, one participant modified it so that students set their goals over two weeks. Other adjustments included setting self-reminders to collect data regularly (e.g., scheduling calendar reminders),

collecting data digitally, and administering short weekly surveys to students to better grasp how the intervention impacted their feelings of connectedness.

We set aside time in each full group meeting for participants to share any modifications they made to their data collection process and explain how the modifications improved their data collection. We strongly encouraged participants to share these tips. For example, one teacher created an Excel workbook to collect and automatically aggregate his student-level data instead of writing down the numbers and doing the calculations by hand. He demonstrated the tool to the other participants, and we distributed the workbook to all participants after the session. We also encouraged participants to share how the data they collected guided their decisions to stay the course or make changes to their implementation. After a participant shared, we encouraged other participants to reflect on what they heard and consider whether they saw similar patterns in their data and what that might mean for them.

Results

Study Findings

During the first year of the NIC, we focused on four primary questions:

1. Were teachers implementing the intervention with a high level of fidelity to their implementation plan?

2. Were students engaging with the activity and meeting their weekly goals?

3. Did students feel more supported by teachers and engaged in school after the intervention?

4. Were students making progress towards graduation?

As the intention of the project was to train all NIC participants to use improvement science methods to inform their practice in a way that was timely and applicable to everyday instructional decisions, we tracked outcomes using the data described earlier to descriptively assess progress on each question.

Short-term and Implementation Findings

Throughout the PDSA cycle, teachers revisited short-term outcomes (e.g., student reflections on goal setting, student progress towards meeting goals) and implementation measurements (e.g., GOAL-setting sheets) during the bi-monthly full group meetings. Over the NIC's three PDSA cycles, teacher teams worked to improve implementation of the intervention and determine if they could scale the intervention to students who had not yet participated in goal setting. Each team individually evaluated their success in implementing by tracking the number of times they administered the intervention on PDSA tracking forms. Each team regularly shared their progress during the full

> " There's one student, in particular... he's the kid who would come in late and be sleepy. And it would take him 45 minutes to kind of wake up and be alert and really participate. Since this all started [the COVID-19 pandemic school closures], he is one of the students that is texting. He uses text messaging. So, he texts every morning, sometime - I mean, between 7 and 8 o'clock in the morning, he's texting, saying, 'I'm up, I'm going to work.' He's giving me his plan and what his goals are for the day. And then, he'll text later in the day, and he'll say, 'okay, I finished it.
>
> NIC Teacher

group meetings. By cycle 3, we observed that all teams had addressed implementation challenges and were implementing the activity as planned. Most teams also found that, as students became familiar with the goal-setting activity, they completed it and met their weekly goals at higher rates. At least half of our teacher teams had increased the number of students they included in the goal-setting activity by the end of PDSA cycle 3.

Medium-term Outcomes

To measure the medium-term outcomes, we intended to administer the CBE 360 survey to all students receiving the goal-setting intervention before the first PDSA cycle and after the last PDSA cycle in May 2020. However, the onset of the COVID-19 pandemic interfered with the second survey administration. The REL Midwest team conducted the pre-intervention survey analysis and presented the school teams with the results during full-group sessions. Teachers first reflected on these data in small groups. They then shared questions, observations, and theories on what they saw with the full group.

Pre-intervention survey results indicated that 12 percent of students had never met one-on-one with an adult at their school (in the classroom or otherwise), and 32 percent had only met with an adult one time. Survey results from both students and teachers also indicated that conversations about students' learning preferences and students' interests outside of the classroom were infrequent. We do not have post-intervention survey data. However, we have anecdotal evidence from teachers that the goal-setting activity helped them connect with students and better understand the challenges students faced. An increase in trust between students and teachers was also anecdotally evident. Additionally, we know that two of the schools that participated in both years of the NIC continue to use the goal-setting activity with all of their students in every class.

> " Firstly, I want to say I'm so thankful for all of my teachers. They have been trying really, really hard to make it as easy as possible for us… For a short-term goal, I want to be more productive. So, I made my time schedule. My small goals, is doing my homework every week, and study for every class. And my big goal is getting my diploma, and getting my CNA certificate. And I want to make my parents proud of me, because I will be the first generation in the family who will graduate high school in the United States.
>
> NIC School Student

Long-term Outcomes

Given the NIC's aim, the goal was to increase graduation rates by the end of 2021. At the time of this writing, data were not yet available to measure change in graduation rates since the implementation of the NIC.

In the second year of the NIC, one of the schools reported that the number of students who achieved at least one credit in quarter one increased by 27 percent—a preliminary but promising finding. This school has continued to implement the goal-setting activity and scaffolded a second social emotional learning intervention with their students.

The REL Midwest team used visuals to present data and patterns in data in presentations to NIC members whenever possible. For example, when sharing the results of the CBE360 survey, we used graphic visualizations of summary data and data trends. We were constantly trying to improve the layout and stylization of our data visualizations to make it easier for teachers to interpret the data. We focused on creating understandable graphics rather than presenting tables of data or text during group meetings.

The original plan for the last session of the NIC was for MDE to host a presentation of work and outcomes for each teacher team. While the onset of the pandemic disrupted those plans, our REL Midwest team found ways to continue to share the work and success of the NIC. REL Midwest has shared the NIC's work through blog posts on the REL Midwest website and in the NIC documentary in the 2019-20 school year (see Resources and Further Reading). In 2021, the REL Midwest team and the director of one of the NIC schools presented findings and approaches to measurement at the 2021 Carnegie Foundation Summit on Improvement in Education.

Alignment with Actionable Evidence Principles

Principle	In This Case...
Centers on Community Needs and Voices *Addresses the context, perspectives, priorities and assets of students and families, along with the challenges they face*	We used an improvement science-based approach to professional development for alternative high schools serving disadvantaged and vulnerable youth. We identified potential strategies to support youth, keeping in mind the unique challenges these youth often experience (e.g., chemical dependency, pregnancy). The intervention, goal setting, supported student autonomy and personal investment in their own success, academically and otherwise.
Prioritizes Practitioner Learning and Decision-making *Answers questions that are highly relevant to policy and practice, and that help practitioners prioritize decisions in service of students and families*	The NIC was data-driven and teacher-centered. Teachers controlled the direction of the work and were central to data collection, analysis, and interpretation.
Enables Timely Improvements *Allows practitioners to make evidence-informed decisions in a timely manner*	Teachers set the pace of the intervention cycles, most frequently between four and six weeks. Each intervention cycle included data analysis, reflection, and a data-based decision making process. This structure allowed teachers to make adjustments and assess success in real-time.

Credible and Transparent *Uses high-quality data and analysis, aligning methods with practitioner questions, timeline and context*	The rapid cycles of implementation and assessment emphasized the collection and use of common practical measures. Participants used data to assess progress and make real-time data-based decisions about implementation and instructional practice. The NIC spent a significant portion of each training reflecting on possible biases and how they might be internalized in the data interpretation and implementation approach.
Responsive to Operational Context of Practitioners *Reflects the context in which practitioners operate, including organizational settings, relationships and resources, and political and policy environment*	Though each participating school modified their approach to implementation and data to fit their context, they followed the core components of the evidence-based change idea and collected the same core set of data. This approach allowed for modification and adaptation while holding to a standard of rigor. The process of developing the aim statement through a root cause analysis and identification of primary and secondary drivers ensured that the goals for the NIC were relevant and timely for participating schools and MDE. We identified key metrics for data collection and co-developed user-friendly data collection tools, while allowing teacher teams to also modify the format and platform (e.g., electronic or pen and paper) for data collection. This ensured that common data points were collected while allowing teachers to adapt the process of data collection for their individual classroom and school contexts.
Accessible and User-Centered *Clearly communicates research design, analysis, and findings to facilitate practitioner understanding and use*	Practitioners shaped the processes and outcomes to their specific contexts. The SAAP context and their students' unique challenges required the NIC to be flexible in meeting student needs. For example, a teacher could pause the intervention if a student faced a significant barrier to attendance (e.g., chemical dependency rehabilitation services) and then continue it once they returned to school, preserving any progress the student may have made prior to the interruption. REL Midwest facilitators developed approachable data visualizations and structured full NIC meetings so that teachers were able to share their data in a non-research-oriented space. REL Midwest facilitators frequently introduced other practices and interventions that participants could scaffold onto the goal-setting activity.

Builds Practitioner Capacity for R&D *Provides practitioners with data, products, tools and trainings to own and advance their evidence agenda*	The rapid cycles of implementation and assessment allowed for continuous testing, observation, and modification of the goal-setting intervention in a timely and effective manner. By participating in the NIC, all NIC members became proficient in the rapid cycle testing routine and could apply these methods to implement, measure, and assess other instructional strategies.
Attends to Systemic and Structural Conditions *Considers systems, policies, practices, cultural norms, and community conditions that drive inequity, including those related to poverty and racism*	In developing the drivers and identifying potential interventions, participants conducted a root cause analysis. The root cause analysis led participants to consider the policies, practices, and community conditions that impede student success and determine what they could and could not control (for example, poverty, crime, and experiences of racism and violence). In reflecting on the success of their interventions, NIC members often revisited discussions of the barriers they could not change and discussed how they could work to remove other barriers for students where possible. Through the reflection and interpretation process, researchers from REL Midwest assisted teachers in analyzing data and interpreting findings in a way that challenged biases—for example, reconsidering what counted as a success. Although a student may not have completed their goal, they may have made progress toward achieving the goal. Here we emphasized that the reflection component of the goal-setting activity was critical to unpack why the student did not complete the goal from an asset-based lens (i.e., discussing what prevented the student from fully meeting their goal).

Reflections and Conclusion

The Promise of a Networked Improvement Community for Research-Practice Partnerships

In combination with the methodologically rigorous improvement science approach, the NIC structure provides a powerful tool for breaking down silos among educators and empowering them to use data in day-to-day decision making. PDSA cycles can be used independently of the NIC structure to measure and assess any intervention or instructional strategy's success. However, when you bring together teachers with common goals to share their experiences, observations, and strategies, innovation can significantly increase across school and classroom contexts at a rapid pace. The networked structure of a NIC, through small- and full-group meetings that foster discussions about data and strategy, in combination with the implementation of methodologies in improvement science, makes the NIC approach unique in research-practice partnerships. For a NIC to be successful, it is essential to have experts on-hand to help facilitate learning the method and translate data collection and analysis in a way that is not formally evaluative and is related to the day-to-day activities of practitioners. Equally important are practitioners who are open to changing how they approach their

instructional practice and how they measure success. In the following sections, we highlight some of the successes of the NIC and lessons learned from our experience.

Successes

Context-specific Adaptation

While there is an established literature on goal setting as a strategy to support academic and social and emotional growth, we needed to facilitate its implementation in practice within the context of four different school settings. To ensure fidelity of implementation while preserving the power of the goal-setting intervention, we first isolated the core components, or essential elements, of the goal-setting activity. Next, we presented it to the teachers, emphasizing the necessity of the core components in implementation (i.e., student-led, discussion with an adult, reflection, and planning for the future). By isolating and ensuring the core components of goal setting were implemented, teachers could make context-specific changes within their classroom while preserving the intervention's power. Additionally, we could measure the fidelity with which the goal-setting activity was implemented by measuring only implementation of the core components of the intervention (i.e., did students set their own goals, did they discuss their goal with a teacher, did they complete the goal-setting sheet).

The most unique and powerful elements of this project were the stories teachers shared of their students overcoming hardships through the goal-setting activity. Participants shared anecdotal evidence of changes in student mindsets and self-confidence. For example, one teacher shared the following anecdote:

> *I have one student who was very successful with the goal-setting worksheets. We did two cycles. In the first cycle, the student's goal was pretty simple. It was, improve my attendance, and come to school almost every day. Because she just was not attending. Maybe twice a week, she was in school. And she did better, like, during the end of that cycle. And in the second cycle, her goal really changed, and it got to be much bigger, and she said, my goal is to learn hands-on in this class, because I like what I'm learning in this class.*

Empowerment through Data

All NIC partners learned something about using data to empower teachers and change instruction, including the researchers and facilitators at REL Midwest. Perhaps one of the most impactful and powerful changes was the shift in participating teachers' mindsets not only on data use to inform their practice but also on their ability to relate to students and to see the intervention from their students' perspective. For example, one teacher reflected:

> *I think I've learned, through this process, to be more aware of how the students are looking at the program through their eyes, rather than me just implementing to them what needs to be done. It helps me to see where they're coming from and relate better to the students.*

In traditional approaches to educational interventions, rarely are teachers given the authority to decide how modifications will occur in both intervention and context. However, the PDSA

structure empowers teachers to make changes and use the evidence base to make their own decisions.

After the first PDSA cycle, we observed that teachers started to realize how powerful and meaningful data could be to measure the impact of their efforts. In particular, they could integrate practical measures into daily practice in an unobtrusive way that yielded valuable information about implementation and student participation and progress. One example was the goal-setting activity. This activity was a student exit ticket and documentation of student progress towards meeting goals. It was also a way to get students to reflect on why they did or did not meet their goal that week. We emphasized how important it was to bring these data to full group sessions for analysis. Over time teachers embraced how much the data could inform how they implemented the intervention and how it impacted students.

> " Being able to say 'we're going to make this our own' was important, and I think that happened.
>
> NIC Administrator

In one of our early full group sessions, a facilitator asked a NIC teacher how his implementation went with their students that cycle. The teacher responded that he didn't think the students got the activity and estimated that only half completed it. When the facilitator pressed the teacher to share the data aggregated from the completed goal forms, the teacher admitted he had not considered all elements in the goal-setting sheets. After the teacher counted the completed goal sheets and read the content, he was pleasantly shocked to realize that only a couple of students had not completed the goal sheets. Most of the students appeared to be writing sincere, actionable goals. This teacher became a champion of the importance of collecting and analyzing data to inform changes and check personal assumptions.

By the last PDSA cycle, almost all of the NIC teachers embraced the process of documenting, analyzing, and reflecting on their data. Several teams added additional data points, such as a short student-connectedness survey. They modified data collection to adapt to modes they worked best in, such as spreadsheets rather than pen and paper documents.

In the second year of the NIC, teachers who participated in the first year have mentored new teachers in collecting and using data. They have reinforced the importance of data in the process to teachers who may not yet have experienced it.

Participants' ability to see the relevance of the NIC and the importance of growing capacity to use data was critical to this project's success. The project also depended on teachers having a say in the NIC components and a stake in the project's success and administrators willing and eager to support their teachers. The administrators were essential in making sure teachers were successful and received the support they needed to implement the goal-setting intervention.

We went into [the COVID-19] time period with two words, equity and engagement, and we wanted…every single student to have a chance to continue their education, and we wanted to just keep kids on our planet, and so I think we got very data-driven in those two goals. In terms of checking to see does every single kid have a laptop? Does every single kid have a hot spot? Who's engaged? How much are they engaged? How many minutes are they engaged? And…we're paying attention to attendance in ways we didn't before, in persistence and retention, and credit-earning and coming together in these regular cycles to say – what is the data telling us about our ability to have equitable learning opportunities and to keep students engaged…I think that [the NIC] was perfect training for us to make it in this last year of an educational universe that was so unfamiliar to us.

NIC Administrator

Lessons Learned

Learning to Translate Research and Measurement

As a team of researchers and facilitators, we needed to adapt research on evidence-based practices from sources such as the What Works Clearinghouse to be understandable and actionable for teachers across different subjects and contexts. Our team developed presentations through an iterative process involving many conversations among the facilitators, content experts, quality assurance providers, REL Midwest leadership, and IES staff on language use and core content before finalizing a session. From our experience working with diverse groups of educators with varying technological preferences and ways of processing information, we knew it was important to present optional modifications to forms (e.g., PDSA trial trackers and GOAL-setting sheets) and procedures teachers could choose from. We also encouraged teachers to take our modifications and further adapt them to meet their contexts. Often, the teachers made modifications that increased the efficiency of their process that we would not have come up with independently.

> " How can we foster success and not have a sense of failure if we can look at partial success?
>
> NIC Administrator

[The modifications] really allowed teachers to do what we talk about in terms of differentiation and individuation as they drilled down into a student's goals. What's it going to take for that particular student to be successful? One teacher told me that 'it helped us find what motivates different students because that's unique to each student.' So, as they were a part of that processing, that reflective process, they could zero in on that particular kid.

NIC Administrator

Understanding our Role in the Project

It was essential that we, as facilitators and researchers, knew how to work with teachers and administrators, had a deep understanding of the research behind the intervention, and knew how to use data to measure the short-, medium-, and long-term goals of the NIC. It was also crucial that we were considerate of the workload and stress of teachers and administrators and their commitment to their students.

Because teachers' time is limited and valuable, our team knew we had to maximize our ability to relate information concisely and understandably. Once the NIC selected goal setting as their change idea, we spent time getting a deeper understanding of its key components (i.e., those elements that must be present to achieve the promised outcomes). We spoke with experts and dug into the research around goal setting and related interventions, such as growth mindset. We took our learnings and distilled them into our presentations. We introduced and scaffolded concepts as the NIC members demonstrated readiness for expansion on their change idea or needed more information to adjust their approaches to implementation. For example, when presenting on growth mindset, we introduced the concept by showing a clip from a TED talk, *The Power of Belief -- Mindset and Success*. We asked participants to reflect on what they learned. To link this to classroom practices, we provided a resource from MindsetKit.org with common scenarios where an educator could reinforce a growth mindset.

We also took care to first understand the alternative education landscape in Minnesota, including the challenges faced by their students, and we often consulted with relevant MDE staff. Finally, the REL Midwest's structure, which allowed us to offer free professional development to these under-resourced schools and districts, was invaluable for this project.

Partnership with the Minnesota Department of Education

The support of MDE was vital throughout the project but critically essential in getting SAAPs to sign on for the NIC. Knowing that MDE staff were up-to-date on NIC activities, attended sessions, and frequently shared the NIC's progress with MDE leadership consistently motivated the NIC participants and us. SAAPs serve the most vulnerable students in Minnesota, often under-resourced and facing stigmatization that their students are bound for failure. Yet our experience with these schools is a testament to how much effort and motivation to implement innovative practices these educators put into ensuring their students' success.

Resources and Further Reading

Networked Improvement Communities
- REL Midwest video: Using Data to Enact Change
  https://ies.ed.gov/ncee/edlabs/regions/midwest/videos/using-data.aspx

- REL Midwest report: Evaluating the Implementation of Networked Improvement Communities in Education: An Applied Research Methods Report
  https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=5676

- REL Midwest blog: Setting goals to stay on track: Using a continuous improvement process to strengthen credit recovery and high school graduation rates
  https://ies.ed.gov/ncee/edlabs/regions/midwest/blogs/setting-goals-graduation-rates.aspx

- American Institutes for Research- Using Networked Improvement Communities to Improve Educational Practice
  https://www.air.org/resource/using-networked-improvement-communities-improve-educational-practice

- REL Midwest Iowa Learning and Technology Networked Improvement Community
  https://ies.ed.gov/ncee/edlabs/regions/midwest/Partnerships/iowa_learning_and_technology_networked_improvement.aspx

- Carnegie Foundation for the Advancement of Teaching.
  https://www.carnegiefoundation.org/

- Presentation at the 2021 Carnegie Foundation Summit on Improvement in Education: Moving the Needle on Graduation Rates: Goal-Setting Lessons From a Minnesota Networked Improvement Community.

Goal-Setting
- What Works Clearinghouse practice guide: Preventing dropout in secondary schools
  https://ies.ed.gov/ncee/wwc/PracticeGuide/24

- CASEL: SEL: What Are the Core Competence Areas and Where are they Promoted?
  https://casel.org/sel-framework/

- Midwest Comprehensive Center: Goal setting: An evidence-based practice.
  https://www.air.org/sites/default/files/MWCC-Student-Goal-Setting-Evidence-Based-Practice-Resource-508.pdf

Competency-Based Education
- American Institutes for Research: Looking Under the Hood of Competency-Based Education: The Relationship Between Competency-Based Education Practices and Students' Learning Skills, Behaviors, and Dispositions
  https://www.air.org/resource/looking-under-hood-competency-based-education-relationship-between-competency-based

- American Institutes for Research: CBE 360 Survey Toolkit
  https://www.air.org/resource/cbe-360-survey-toolkit

- REL Midwest webinar: Implementing Competency-Based Education Strategies: From Research to Practice
  https://ies.ed.gov/ncee/edlabs/regions/midwest/events/2020/may-6.aspx

Growth Mindset

- TEDx Talk: The Power of belief -- mindset and success
  https://www.youtube.com/watch?v=pN34FNbOKXc&t=192s

- MidsetKit.org - Seven Common Growth Mindset Scenarios and Responses
  https://www.mindsetkit.org/practices/EqcTHm9okjCekZJc

- Student Experience Research Network - What we know about growth mindset from scientific research
  https://studentexperiencenetwork.org/research_library/what-we-know-about-growth-mindset-from-scientific-research/

Other

- REL Midwest infographic: The State of Credit Recovery in Minnesota Public High Schools
  https://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/blogs/RELMW-Credit-Recovery-Infographic-508.pdf

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Appendix
State Approved Alternative Programs (SAAPs) Participating in the Minnesota Alternative Learning Center Networked Improvement Community

- *GAP Schools alternative program* (GAP), located in St. Paul, is run by Change Inc. Change Inc.'s mission is to "utilize the power of relationships and community to create educational, training and healing opportunities for children, youth, young adults and families so that they can achieve their highest ambition." GAP is an accredited, comprehensive high school diploma program serving at-risk adolescents in grades 9-12. It emphasizes building skills that prepare students for college and career, leadership development, and community service learning (Change Inc., n.d.b). All GAP teachers participated in the NIC and split into five teacher teams based on their focus area.

- *Robbinsdale Academy – Highview* (Robbinsdale), located in Golden Valley, is part of the Robbinsdale Area Schools school district. Robbinsdale's mission is "to prepare our diverse student community for success as thoughtful, contributing members of society in career, college, and life" (Robbinsdale Academy – Highview, 2020). Students at Robbinsdale prefer a smaller setting and are provided with a more personalized environment than a traditional high school (e.g., self-paced work, flexibility, and choices in learning opportunities; Robbinsdale Academy – Highview, n.d.). Robbinsdale is an accredited, comprehensive high school diploma program serving students in grades 9-12, ages 14 to 21. Robbinsdale had one teacher team in the NIC composed of teachers representing various subject areas.

- *PYC Arts and Technology High School* (PYC), located in Minneapolis, is run by Plymouth Christian Youth Center (PCYC), a 501(c)3 not-for-profit organization. PCYC's mission is "to enrich the skills, prospects and spirit of North Minneapolis area youth and adults, in partnership with families and communities" (PCYC, 2015a). PYC provides students with various ways to earn credits toward graduation, including online and seat-based options (PCYC, 2015b). PYC is an accredited, comprehensive high school diploma program serving students in grades 9-12. PYC had one teacher team in the NIC composed of teachers representing various subject areas.

- *Anoka-Hennepin Regional High School and Anoka-Hennepin Technical High School* (Anoka), located in Coon Rapids, are part of the Anoka-Hennepin school district. Anoka-Hennepin Regional High School serves students in grades 9-12 who are "off-track" in the traditional school setting. Anoka-Hennepin Technical High School serves students ages 18-21 who are past their graduation date but want to complete their graduation requirements (Anoka-Hennepin Regional High School, n.d.; Anoka-Hennepin Technical High School, n.d.). Both are accredited comprehensive high school diploma programs. Anoka had one teacher team in the NIC composed of a teacher from each high school.

About the Authors

Dominique Bradley is a researcher at the American Institutes for Research (AIR) and partnership facilitator for the Regional Educational Laboratory Midwest (REL Midwest). Dr. Bradley serves as a partnership facilitator, researcher, and technical assistance trainer for the REL Midwest. In this role she serves as a project lead and provides technical assistance to help stakeholders better understand and use data and research methods, use of improvement science and research-practice partnerships to improve educational practice, and conduct research to share policy and practice. In her role as partnership facilitator she has supported the development of NICs and provides training for school administrators on the use of improvement science methods. She serves as the qualitative research lead for evaluations of the Community Schools Initiative and Sustainable Community Schools for Chicago Public Schools and the Community Partnership Schools Initiative with the University of Central Florida. Dr. Bradley's research in the community school initiatives focuses on the implementation practices of schools and how implementation of these initiatives can support better outcomes for students, families, and schools. She also serves as lead researcher and project director on several federally and privately funded grants. Dr. Bradley serves as the co-lead for a qualitative methods resource group internal to AIR. She has over 12 years experience in education research and project management. Her areas of expertise are in implementation evaluations; qualitative research methods; developing and supporting networked improvement communities; supporting and evaluating research-practice partnerships; implementation science; and teacher retention, preparation, and support. Dr. Bradley holds a bachelor's in Sociology from Southern Oregon University, and a masters in Sociology and doctorate in Educational Leadership and Policy Analysis from the University of Wisconsin-Madison.

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Case Keywords

K-12 | urban | alternative education | program improvement | networked improvement communities | school | teachers | school administrators | state government agency | external evaluator | attendance