

Uniting districts to see their common aim: A unique NIC formation strategy

Abbey Loehr Research Director Institute for School Partnership at Washington University in St. Louis, Rachel Ruggirello Associate Director Institute for School Partnership at Washington University in St. Louis, Mandy Harvell Instructional Coach Ritenour School District, Briana Trager K-12 Science Director Mehlville School District

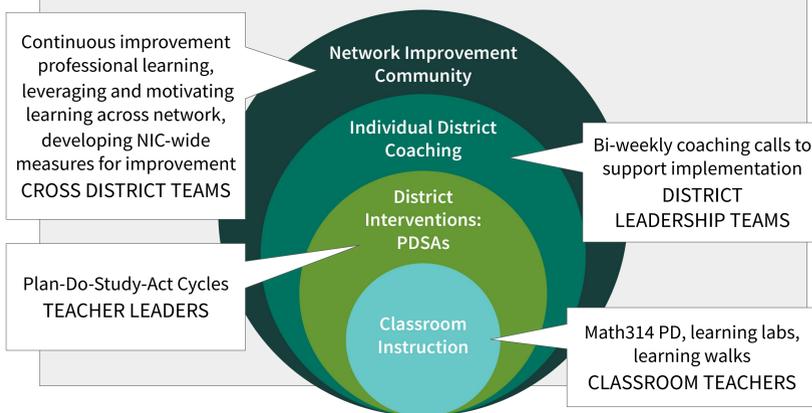
Background / Rational

The Institute for School Partnership (ISP) partners with schools in St. Louis to support change in STEM educational inequities.

In 2020, we united three school districts working to reduce equity gaps in math outcomes for students by improving mathematics instruction.

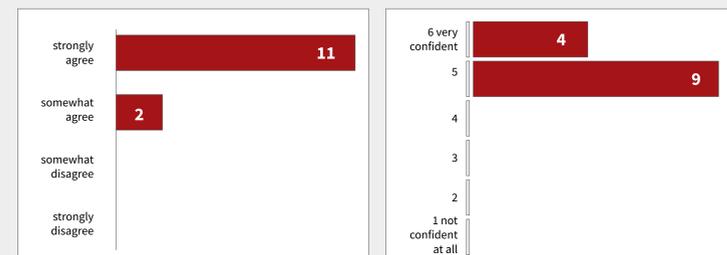
In contrast to the traditional approach of recruiting members of a Networked Improvement Community (NIC) to work towards achieving a pre-existing aim, we formed a STEM District Immersion (STEM DI) NIC by leveraging similarities across improvement work the individual districts were designing.

We describe two activities used during a two-day summer institute in August 2021 to motivate and organize these three districts towards a common, equity-focused aim and shared purpose.



Learnings / Findings

Feedback from 13 of 20 STEM DI NIC participants who attended the Summer Institute reinforced how these (and other) activities pushed teams to focus on equity and motivated districts to work collaboratively towards a shared aim that no individual could achieve on their own.



The Summer Institute helped me and my district team to more explicitly center equity in our work.

How confident are you that collaborating together as a Networked Improvement Community with a shared purpose focused on equitable math outcomes for students will help your district team achieve its aim?

Constructing our STEM DI NIC driver diagram

In Year 1, each district created an individual district aim and theory of improvement.

To increase cross-district collaboration in Year 2, the ISP hub created a partial STEM DI NIC driver diagram with an equity-focused aim and primary drivers shared across the three districts.

The ISP hub team first drafted a broad STEM DI NIC aim based on existing equity gaps in Missouri Assessment Program (MAP) math standardized test proficiency rates.

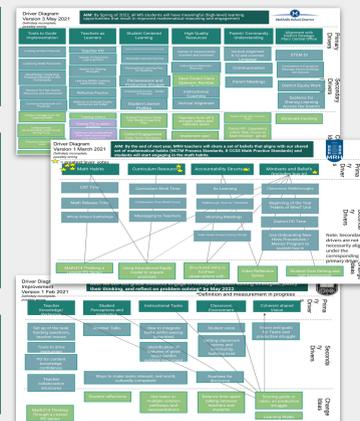
STEM DI NIC District Aims

DISTRICT 1 AIM: By Spring of 2022, all MS students will have meaningful (high-level) learning opportunities that result in improved mathematical reasoning and engagement

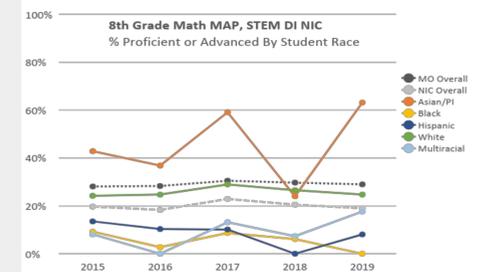
DISTRICT 2 AIM: By the end of next year, MRH teachers will share a set of beliefs that aligns with our shared set of mathematical habits (NCTM Process Standards, 8 CCSS Math Practice Standards) and students will start engaging in the math habits.

DISTRICT 3 AIM: All 6th-8th grade students engage in multiple problem solving strategies, justify their thinking, and reflect on problem solving* by May 2022

STEM DI NIC District Theories of Improvement



STEM DI NIC Initial Proficiency Rates by Race



PROPOSED STEM DI NIC AIM:

(possibly wrong, definitely incomplete)

By Spring 2023, all three STEM DI districts will demonstrate measurable improvement in equitable math outcomes (e.g., enrollment in Algebra 1, grades or course pass rates, MAP proficient/advanced rates) for target student subgroups while other subgroups stay the same or improve.

STEM DI NIC Narrative

STEM DI NIC Narrative activity focused on uniting districts around a common purpose and shared vision for equitable math outcomes.

We used a modified version of Carnegie's Creating a Team Narrative Activity to identify shared beliefs, values, and motivations and understand how they drive our STEM DI NIC's work.

In mixed-district groups, individuals first shared their personal narrative (e.g., What brings you to your work? What keeps you motivated?) and then created a list of common themes.

The hub team drafted a shared STEM DI NIC narrative using each group's themes, which was shared the next day.



We are a group of St. Louis area educators who are committed to providing high-quality, equitable math instruction to every student and making a positive impact on our communities.

We believe in encouraging **perseverance and productive struggle**, in addition to **nurturing student's natural wonder, curiosity, and excitement about learning**.

In learning math, we value process over product; we meet students where they are; we engage a **growth mindset about ourselves and our students**. We encourage students to **persist through challenge, engage in problem-solving through discourse**, and make connections to the real world in order to take student learning beyond the classroom.

We recognize that as educators we are molded by our personal and collective histories, both good and bad, and we are motivated by those experiences. Ultimately, we recognize that we are stronger together, and we value all stakeholders and what they bring to our community.

In pursuing our goal of **providing every student with high-quality math experiences**, we realize that no one educator can achieve these goals on their own, and thus we seek to build this community around our common vision and **commitment to professional growth**.

Constructing our STEM DI NIC Driver Diagram: Mixed-district groups sorted the primary drivers from all three district driver diagrams and labeled each category of similar drivers.

Each group presented their categories, and participants were surprised to see how quickly they came to consensus on four shared primary drivers.

Districts now have a common language for the primary drivers they are all targeting to achieve their aims (see STEM DI NIC Driver Diagram V1.0 - 2.0; Version 1.0 included primary drivers only).

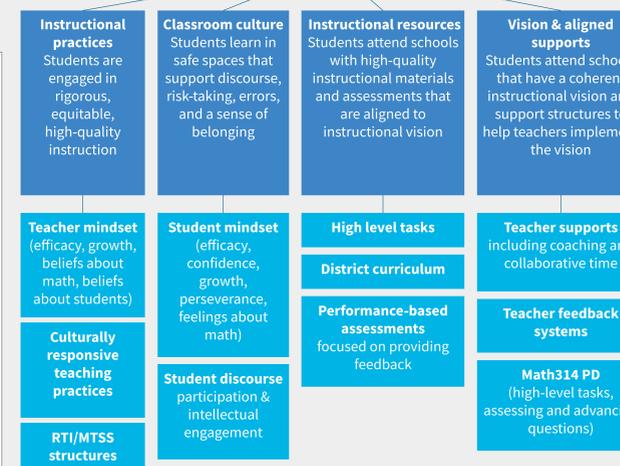
Mixed-District Team Activity

- Categorize similar primary drivers (15 min)
 - Group driver cutouts into 3-5 categories
 - A driver may be put into more than one category (use post-its to add drivers to multiple categories)
 - Discard pile: Some primary drivers may actually be secondary drivers or change ideas
- Agree on a name for each category of primary drivers (10 min)
 - Write the names for each category on chart paper and tape the grouped drivers below



STEM DI NIC Driver Diagram V 1.0 - 2.0

AIM: By Spring 2023, all three STEM DI districts will demonstrate measurable improvement in equitable math outcomes (e.g., enrollment in Algebra 1, grades or course pass rates, MAP proficient/advanced rates) for target student subgroups while other subgroups stay the same or improve.



Instructional practices
Students are engaged in rigorous, equitable, high-quality instruction

Teacher mindset
(efficacy, growth, beliefs about math, beliefs about students)

Culturally responsive teaching practices
RTI/MTSS structures

Classroom culture
Students learn in safe spaces that support discourse, risk-taking, errors, and a sense of belonging

Student mindset
(efficacy, confidence, growth, perseverance, feelings about math)

Student discourse
participation & intellectual engagement

Instructional resources
Students attend schools with high-quality instructional materials and assessments that are aligned to instructional vision

High level tasks
District curriculum

Performance-based assessments
focused on providing feedback

Vision & aligned supports
Students attend schools that have a coherent instructional vision and support structures to help teachers implement the vision

Teacher supports
including coaching and collaborative time

Teacher feedback systems
Math314 PD
(high-level tasks, assessing and advancing questions)