STUDENT-LED LEARNING TAKES WELL-PREPARED EDUCATORS

BY JOE BATTAGLIA

For more than 20 years, the Metropolitan Regional Career and Technical Center (known as the Met) has been personalizing learning to our students' interests and needs.

The Met, which today is a network of six small, public high schools in Providence and Newport, Rhode Island, is the founding school of Big Picture Learning, a network of more than 65 diverse schools that use innovative models to make learning meaningful and tailored to students.

Students at the Met develop agency for their own learning through a combination of strategies that include internships with local businesses and organizations during the school day, intentional connections between their internships and academic skills, and

individual learning plans. Our goal is for all students to become engaged, lifelong learners and responsible citizens.

Learning at the Met is student-led and adult-facilitated. That doesn't mean educators don't have a role to play. Quite the contrary, they play a crucial role. They manage students' individual learning plans (which cover all learning goal areas) and scaffold the students' self-determination in their educational paths.

Relationships between educators and students are a key part of engaging learners and facilitating their personalized learning pathways. For this to work, our educators need to be in constant communication with one another and have ongoing support. Professional learning that is reflective and collaborative is therefore foundational at the Met.

One tool that has been helpful in our professional learning efforts is the method of improvement science — using short cycles of inquiry to continuously iterate on and enhance the programs and supports for educators. We use this method to create more consistency and coherence in how educators review student work and use the results to drive further instruction, especially in math.

ABOUT THE MET

Staffing at the Met looks different than at a traditional school. Each of the six buildings has one principal, eight or nine advisors, one quantitative reasoning teacher (what many would consider a math teacher), one social worker, one special educator, and one learning specialist.

The advisors are teachers or school leaders who meet with students on a regular basis to plan and navigate their learning pathway. Each student has the same advisor for his or her entire high school career. Advisors oversee and facilitate students' learning plans, help them identify their interests, find internships that relate to those interests, and serve as trusted adult mentors.

Students also learn from specialists — teachers who manage specific skill learning. Quantitative reasoning teachers, who teach math skills, are a key part of the team. They, like all educators at the Met, prioritize students' ability to reason and apply knowledge over rote memory of content.

Each year, 30% to 35% of students enter the Met three or more years behind in math (and in reading). And while there are specific skill deficiencies to remediate, we also want to prepare students to be career- and college-ready, rebuild mathematical confidence, excel at the mathematical competencies, and learn to love learning.

The staffing structure, combined with the intensely personalized nature of student learning work at the Met, necessitates frequent meetings among staff (and between staff and the learning team of the parent, student, and mentor).

It also necessitates that these meetings be effective and efficient — and that all our team members are learning and growing together to design, scaffold, and execute student learning plans and ensure that all students have access to high-quality teaching and learning.

For example, in English language arts, we have worked together as a community to assess (and drive improvement in) academic rigor in writing, by using the Six Traits Writing Rubric developed by Education Northwest. This has given us a common way to provide consistent feedback on students' writing skills.

WHY THE WHAT MATTERS NOW NETWORK?

The What Matters Now Network has backstopped our efforts, providing national and state-level elevation of this work for quantitative reasoning specialists, peer accountability among school leadership, and technical assistance support throughout our efforts.

ADDRESSING A NEW CHALLENGE

A few years ago, the Met embarked on a concerted effort to support the quantitative reasoning team to engage in a similar effort. We were, and continue to be, focused on the goal of upholding equity for our diverse student body and ensuring that all of them become competent in key mathematical reasoning skills. We believed a key leverage point was reviewing student work through common assessments.

The quantitative reasoning team had formed a professional learning community (PLC) that engaged in lesson studies and examining student work using structured protocols. But when we began working toward common math assessments, we found that the team didn't have sufficient buy-in to make meaningful progress.

Team members didn't understand the purpose of this work or the value of using common assessments to drive professional learning that would

improve student outcomes. We were grappling with how to move forward.

Then last year, we saw a window of opportunity when we joined the What Matters Now Network, a coalition of educators at the state, district, and school levels working to apply the concepts of improvement science to professional learning. The network is facilitated by Learning Forward and the Center for Public Research and Leadership at Columbia University with support from the Carnegie Corporation.

Rhode Island is one of three states in the network. The state's coalition is a collaboration among the Rhode Island Department of Education, the Governor's Office of Innovation, Smithfield Public Schools, and us. Our coalition is focusing on methods for reviewing student work, using the improvement science approach of testing changes that are small enough to learn from quickly but are foundational to potentially larger solutions.

WHAT IS IMPROVEMENT SCIENCE?

In education, improvement science is a disciplined approach to educational inquiry: Through it, teams of educators engage in rapid PDSA (plan, do, study, act) cycles in order to test hypotheses and use data to inform smart and real-time decision-making.

As a part of and with support from the network, our team at the Met designed a plan to institute short cycles of inquiry (see "What is improvement science?" above) about how to assess the impact of math instruction, beginning with geometry skills and competencies.

To do this, the quantitative reasoning team reviewed its scope and sequence to identify the eight to 10 most foundational skills or competencies for the year and developed a short exit ticket common assessment for each of them. The topics ranged from segment addition to multistep volume problems, and they were created in a way to allow for open interpretation of the problem and provide various ways to communicate the thinking and solution process.

Before administering each assessment, the team reviewed and discussed all of the different ways students might provide and communicate a solution, how students might miss the solution, or how they might miscommunicate the solution.

Doing this not only promotes our goal to preserve an equitable education for each student, but it also allowed us to engage more deeply through an improvement science lens: By first

predicting student successes and areas of potential struggle, our quantitative reasoning specialists were then able to engage in Plan-Do-Study-Act (PDSA) cycles to test the efficacy of various teaching, learning, and intervention strategies to ensure all students mastered all 10 of the identified foundational skills and competencies.

Tangibly, this means that the team looks at various and individual ways of approaching a problem, categorizes them, and then zooms out to aggregate instructional interventions. Could an English learner misread a math term? What intervention would mitigate that? Is the term necessary to know in English? If not, how could the question be rewritten or the work introduced before the exit ticket?

PLAN-DO-STUDY-ACT

As part of each of the PDSA cycles, the team first planned and engaged in its teaching strategies, administered the common assessment, then reconvened to review student work. This reconvening, or the "study" section of improvement science's PDSA cycles, was grounded in the use of a Looking at Student Work protocol developed at the What Matters Now Network convening.

Using this protocol, team members scored the work, grouped students in their classes depending on the type and level of needed teaching intervention, and identified those next instructional steps that they would implement in their group.

Engaging in these next instructional steps started the next round of the PDSA cycles for the What Matters Now Network, helping to ensure fluid and continued improvement on instructional strategies to reach full proficiency across all identified core competencies.

At the beginning of this process, the team, while invested, moved cautiously and asked many questions: What would this data be used for? Are our circumstances similar across buildings? What can we really tell from these data? Still, with all these questions, the team followed the written Looking At Student Work protocol and the prompting of the team facilitator.

Given this caution, the first PDSA cycle through the What Matters Now Network focused most deeply on engagement and ownership of the process by quantitative reasoning specialists. Looking back, this was the right move: As the first cycle closed, the team was more comfortable in preparing, reviewing, and sharing its work and commitments. Team mindset shifted notably to a more open, solutions-focused approach.

This gave space to test a new hypothesis (or "change idea" in the language of improvement science) through the second cycle of inquiry. During the second PDSA, the quantitative reasoning team added one additional question to the Looking at Student Work protocol, asking teachers not just what instructional approach they chose but how teachers implemented their instructional next steps.

To gather — and be able to reflect on — the data for these questions, we created a tracking tool so that staff could document these post-assessment interventions. Now, in addition to reviewing the assessments, we are reviewing how the interventions identified by these formative assessments influence learning.

By the end of the year, any of the team could and would create a common assessment or lead the protocol. Team members owned the process and distributed leadership among themselves.

LOOKING AHEAD

As we look to engage in next steps in the What Matters Now Network, we will take learnings from our improvement science efforts this year. We know that team buy-in is paramount and that we need to provide time for inquiry and reflection and, ultimately, ownership before we roll out new instructional efforts with our teams.

To that end, one of the school's next steps is to co-create a tool that better categorizes and tracks the interventions by quantitative reasoning teachers, allowing educators to own the process.

Additional insights from our efforts in improvement science — especially around the need for explicit and specific data — will inform our work to disaggregate data collected to have a better look at where our interventions are working and where they may not be showing an effect.

Finally, we plan to expand this project to our algebra curriculum and classes. This will open up our conversations and research into best practices that promote equity in mathematical education — an important undertaking because all students need to be supported in a way that maximizes their learning outcomes.

This is a process that can happen in any school. While sometimes the terminology about improvement science and short cycles of inquiry can seem exclusive and technical, the process is simple and powerful. As we engage in this process, we become better educators, more able to observe what needs to be done.

Overall, this process of short cycles of inquiry isn't just the ability to reflect, plan, and implement well. It also stokes a larger conversation about what goals should be and remain the key targets and why. It causes us to question and challenge assumptions that may need to be clarified, understood better, or eschewed and replaced. It creates fertile space for deeper, broader, and more fulfilling professional learning that enables us to better serve students and families.

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