Student Success in Mathematics Partnership Meeting

July 26, 2021

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IES Institute of Education Sciences

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REL Appalachia at SRI International

Welcome

Anna Chiang
Partnership Liaison

Agenda

- Welcome
- Looking back through the partnership
- Developing a resource collection of critical products and practices
- Moving ahead with equitable mathematics teaching and learning
- Next steps

Student Success in Mathematics partnership: REL Appalachia staff

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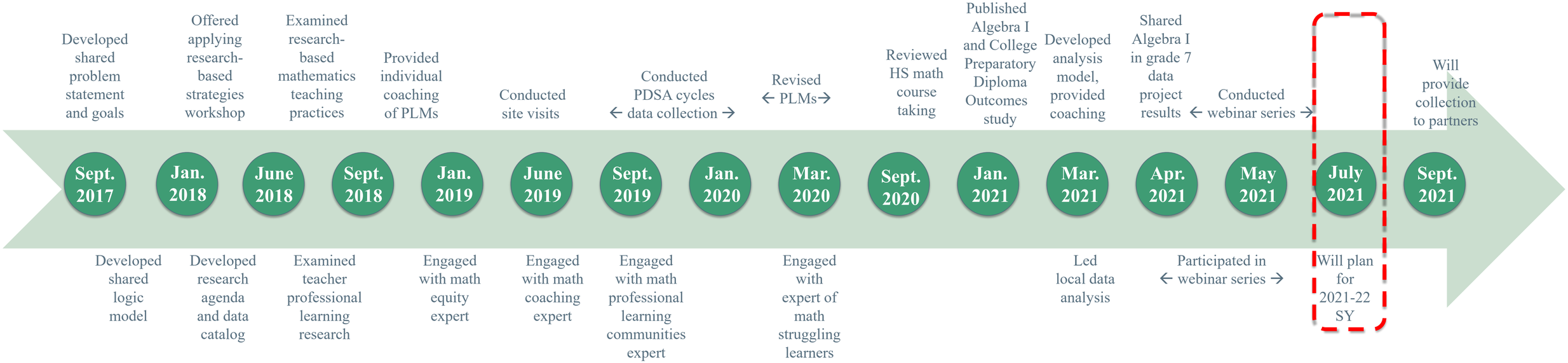
Looking Back through the Partnership

Let's celebrate our progress

Ryoko Yamaguchi
Research Lead

Timeline of major partnership activities



Defining our partnership problem statement and goals

Problem statement

Not all students have the depth of skills, knowledge, and understandings necessary for success in algebra and higher-level mathematics courses.

In particular, there are gaps in algebra readiness for English learner students, students of color, students with disabilities, and economically disadvantaged students.

REL APPALACHIA Project 5.2.12 Footer 5

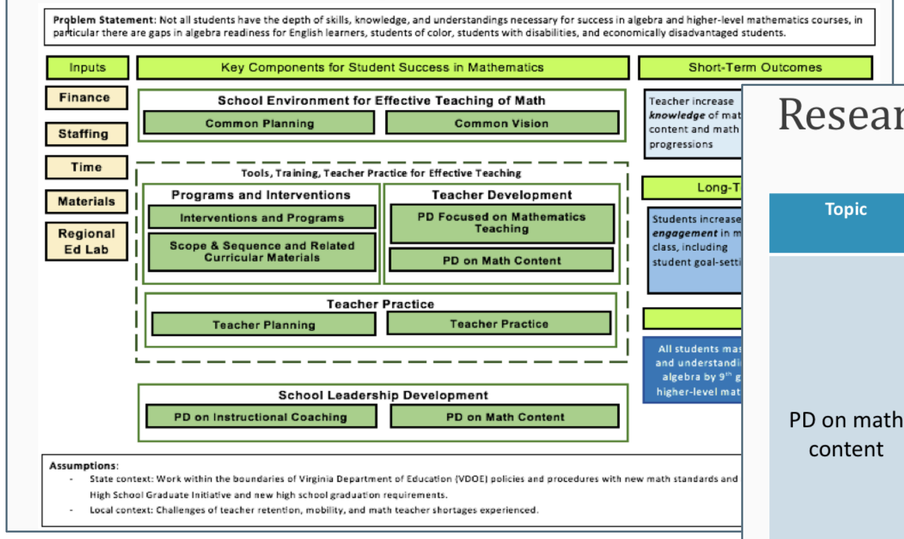
Partnership goal

All students master key skills, practices, and understanding of critical concepts of algebra by grade 9 to be able to take higher-level mathematics in high school.

REL APPALACHIA Project 5.2.12 Footer 6

Partnership logic model, research agenda, and data catalog

Partnership logic model



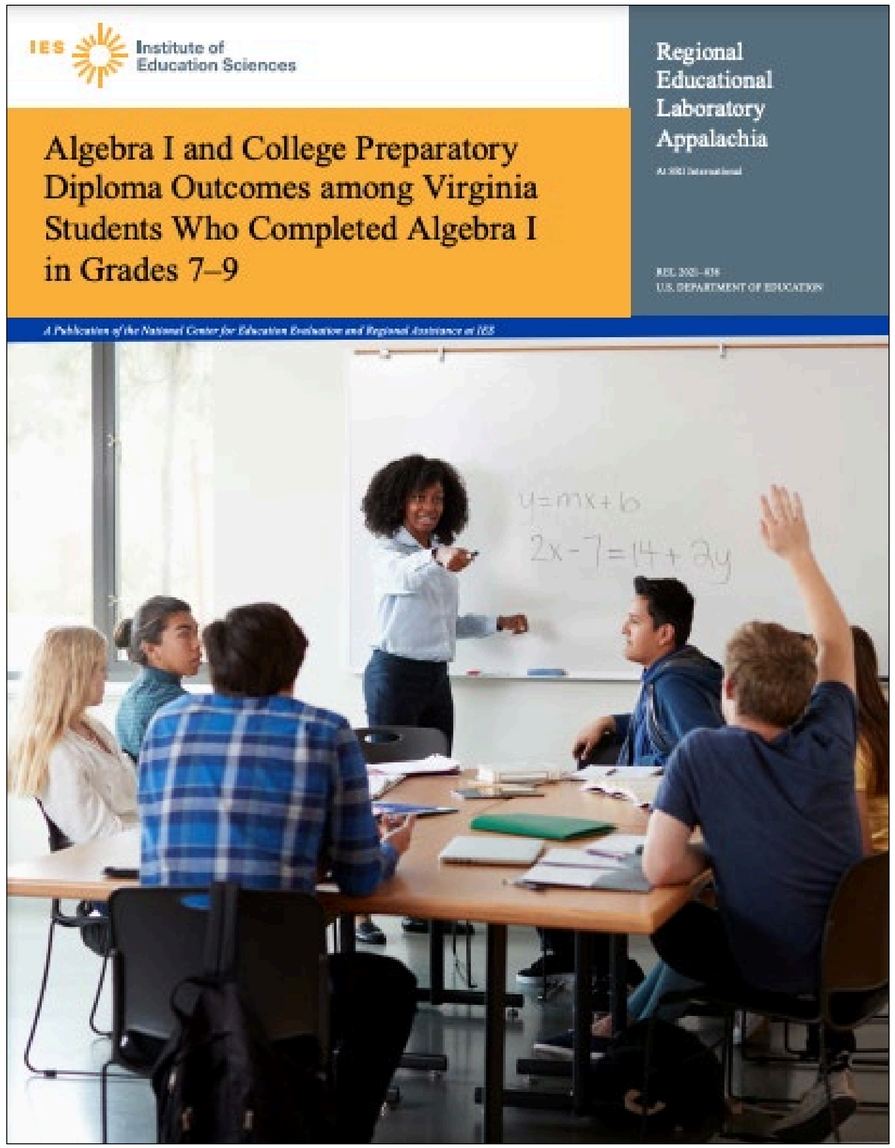
Research agenda: Topics and questions

Topic	Subtopic	Questions
PD on math content	Online math course	Q1. To what degree does participatio math course increase teachers' pe knowledge in the targeted content Q2. To what degree does participatio math course translate to changes i practice?
	Vertical alignment of content	Q1. To what degree does teachers' l content alignment across grades in pedagogical content knowledge in Q2. To what degree does teachers' l content alignment across grades im algebra readiness in the middle sch

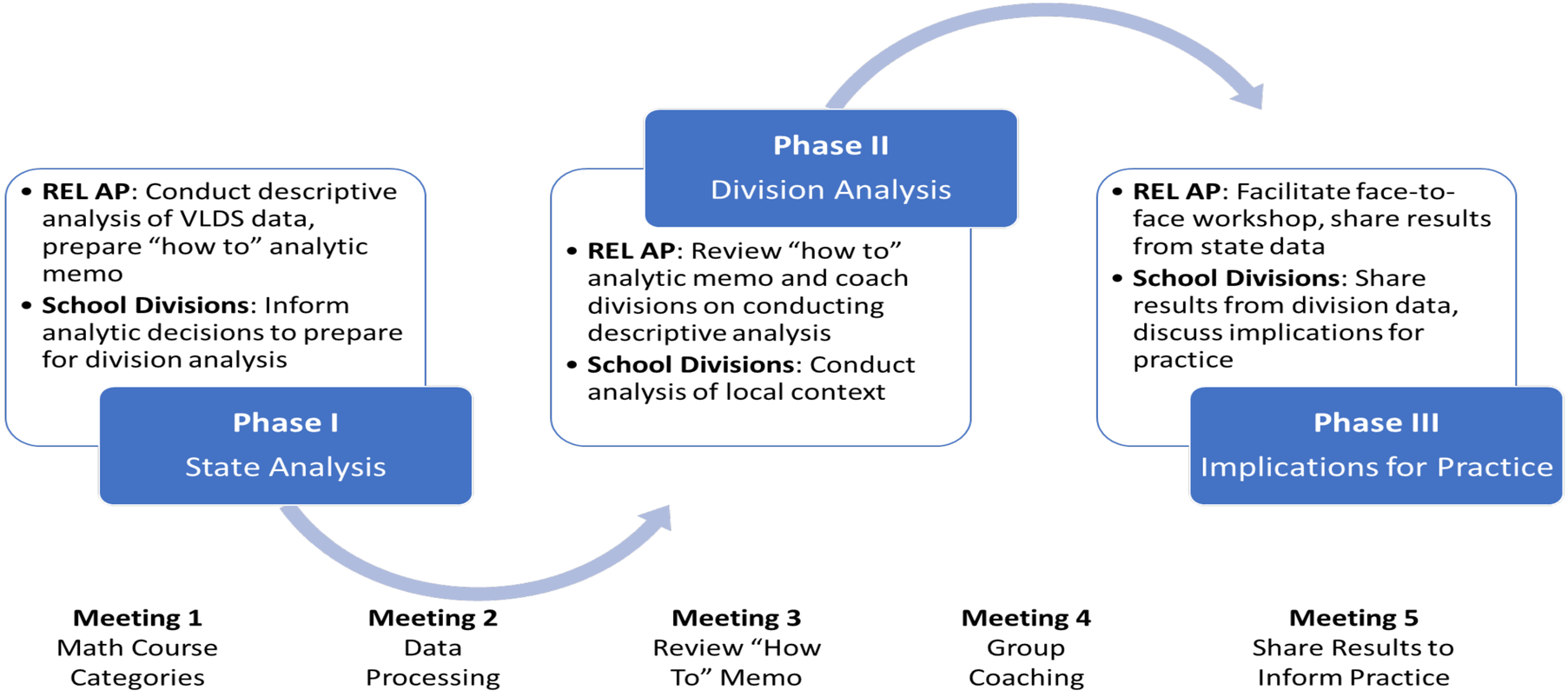
Data catalog

Subtopic	Domain	Variables	Variable characteristics
PD on math content	Online math course	Attendance of course	Percentage attendance (range 0–100%)
		Course assessment (final grade)	Score (0–100 score)
	Vertical alignment of content	Attendance of class/ workshop	Yes = Attended class; No = Did not attend
		Course assessment (final grade)	Score (0–100 score)
		PLC attendance	Yes = Attended class; No = Did not attend
		Multigrade co-plan	Yes = Attended class; No = Did not attend

Algebra I and College Preparatory Diploma Outcomes among Virginia Students Who Completed Algebra I in Grades 7-9



Building capacity of school divisions to use their data: Coaching project on data analysis and implications to practice



Learnings in the Student Success in Mathematics partnership

Reflect – Post – Share

How have the data you collect related to teacher professional learning changed since our conversations about the data catalog in the first year?

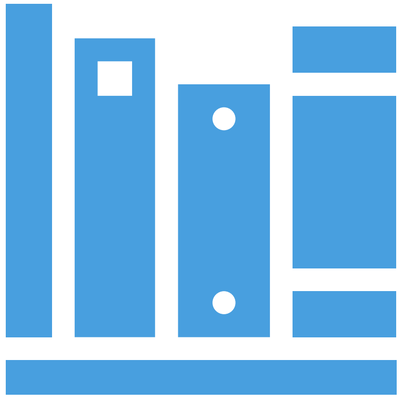
Developing a Resource Collection

Critical products and practices

Jill Neumayer DePiper
Partnership Staff

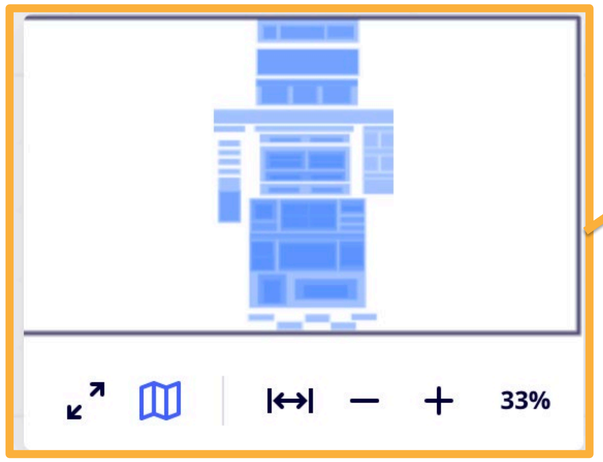
What is a resource collection?

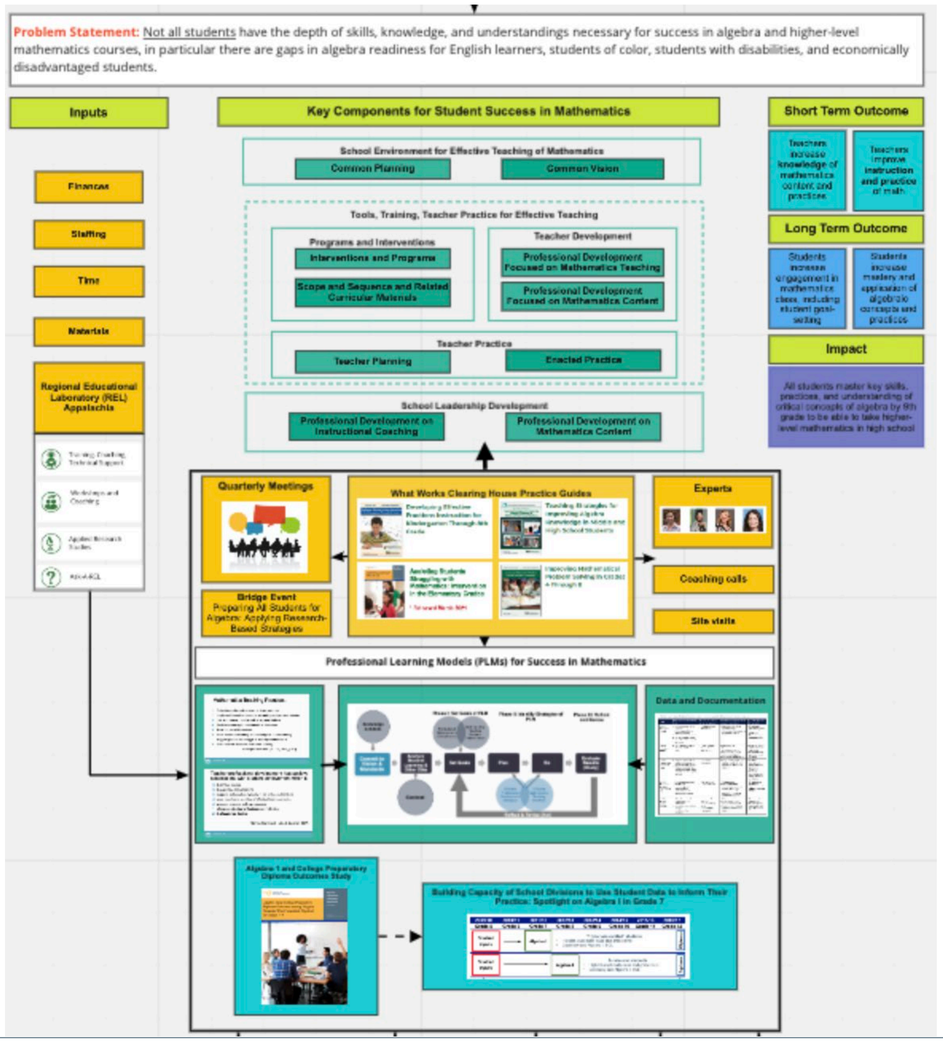
A set of products and practices that supported your work throughout this partnership and could inform others as they set division-wide goals for mathematics achievement.



Review process and practices of the SSMP, 2017–2021

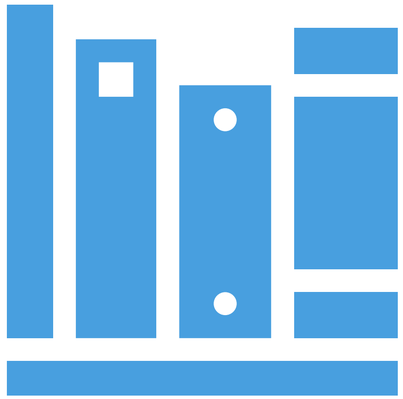
Visual tour in [Miro]





Developing the resource collection

- Which practices or aspects of this work would you want to highlight to leadership and policymakers?
- How will these resources help to support continued improvement of mathematics instruction, student academic achievement, and equitable opportunities to learn?



Learnings in the Student Success in Mathematics partnership

Reflect – Post – Share

What evidence-based practices for mathematics teaching and learning and professional development are included in your division-level programs?

Moving Ahead with Equitable Mathematics Teaching and Learning

Pam Buffington
Partnership Lead

Continuing the pursuit for access and equity in mathematics learning and teaching

Guiding Principles for School Mathematics: Access and Equity

"An excellent mathematics program requires that all students have access to high-quality mathematics curriculum, effective teaching and learning, high expectations, and the support and resources needed to maximize their learning potential."

(National Council of Teachers of Mathematics, 2014)

Continuing the pursuit for access and equity in mathematics learning and teaching

- Review leading mathematics education associations' equity and access statements
  - National Council of Teachers of Mathematics access and equity in mathematics education position statement (link)
  - National Council of Supervisors of Mathematics (NCSM) and TODOS: Mathematics for ALL joint position statement (link)
  - Association of Mathematics Teacher Educators (AMTE) Equity in Mathematics Teacher Education position statement (link)
- Choose one or more of these documents to discuss more fully with teacher leaders and administrators to establish and/or affirm a shared vision for mathematics learning equity and access.

Continuing the pursuit for access and equity in mathematics learning and teaching

- Establish or join a professional learning community to deepen and extend your knowledge and professional toolset.
  - Continue networking with SSMP members.
  - Join local and national mathematics leadership organizations (NCTM, NCSM, TODOS).
- Think big, start small.
  - Set ambitious goals but realistic timelines for your own professional learning.
  - Manage the scope by choosing a particular grade span, topic, or group of underserved learners to focus your equity improvement efforts.
  - Integrate new learning and approaches into your Professional Learning Model.

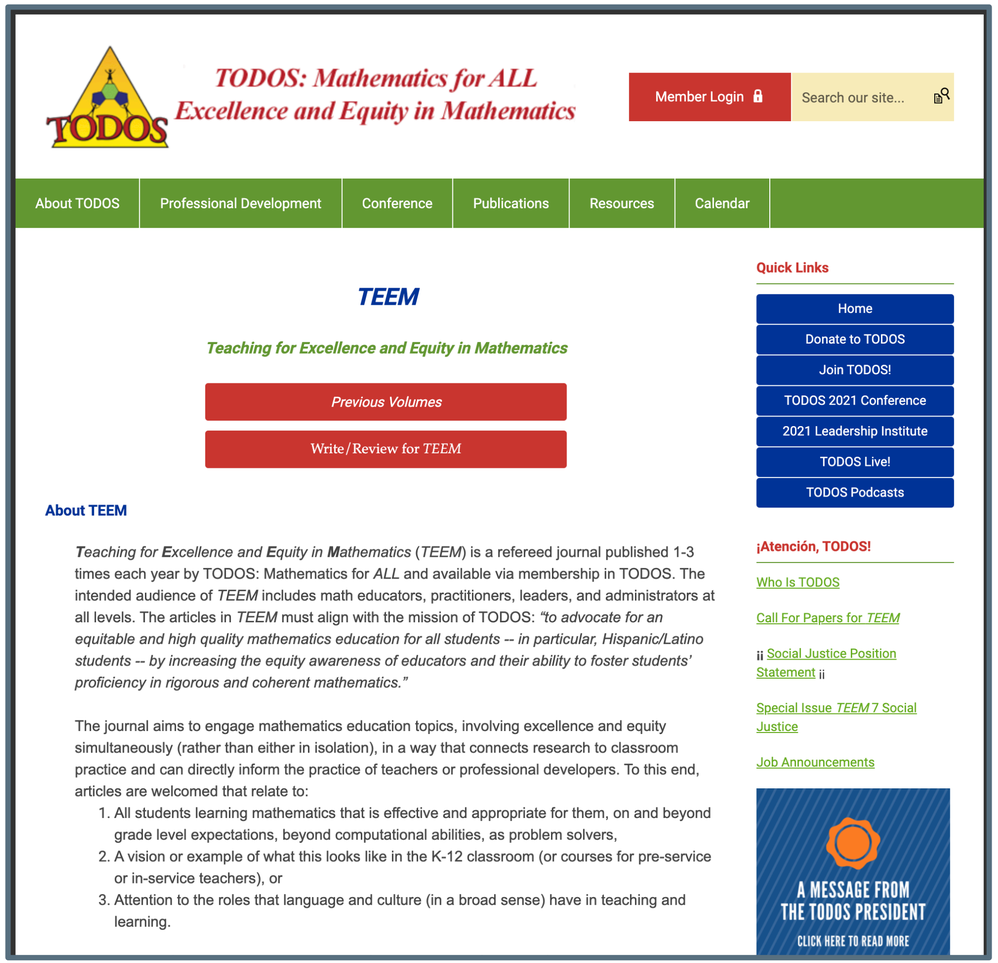
Continuing the pursuit for access and equity in mathematics learning and teaching

Example 1:

TODOS Teaching for Excellence and Equity in Mathematics (TEEM) journal

- Discussion and Reflection Enhancement (DARE). Pre-Reading and Post-Reading Questions
- 13 TEEM Volumes freely available for viewing and download in PDF
- Table of contents and abstracts available to assist with selection

Civil, M. (2020).

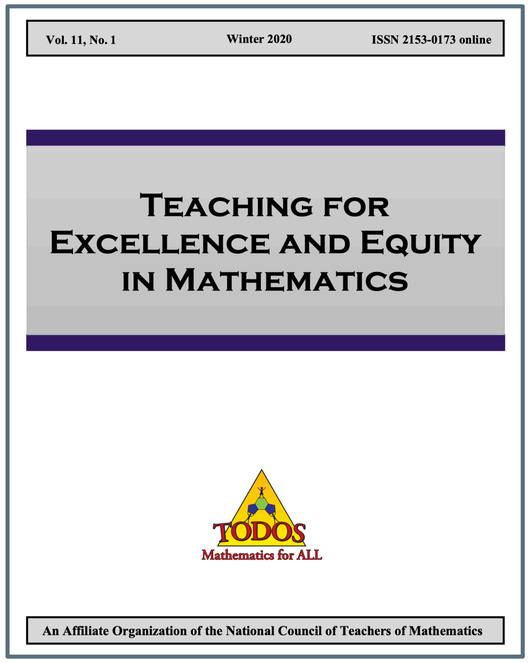


Teaching for Excellence and Equity in Mathematics, Vol. 12, No. 2

Teachers' Grouping Strategies: Implications for Equity (link)

Discussion And Reflection Enhancement (DARE) Pre-Reading Questions

1. What are your strategies for organizing students for small-group work?
2. In what ways, if at all, do you consider each of those strategies as a means for working toward equity in your classroom?
3. Do you talk with colleagues and/or instructional leaders about strategies for grouping students? Explain.



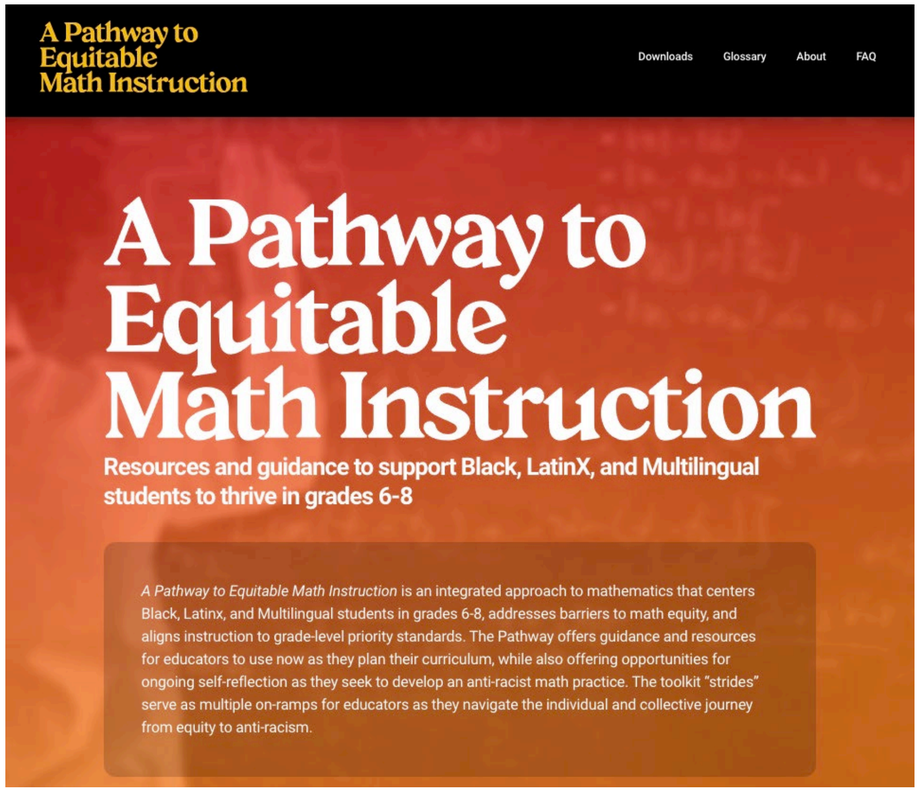
Haines, C., & C. Munter (2020)

Continuing the pursuit of access and equity in mathematics learning and teaching

Example 2: *A Pathway to Equitable Math Instruction: Resources and guidance to support Black, LatinX, and Multilingual students to thrive in grades 6-8*

- 5 Strides on the Path to Equity
- Downloadable workbooks and tools for teachers, leaders, and coaches
- Series of "Deep Dive" webinars
- Exercises for educators to reflect on their own instructional practice

Trust-West, E. (2020)



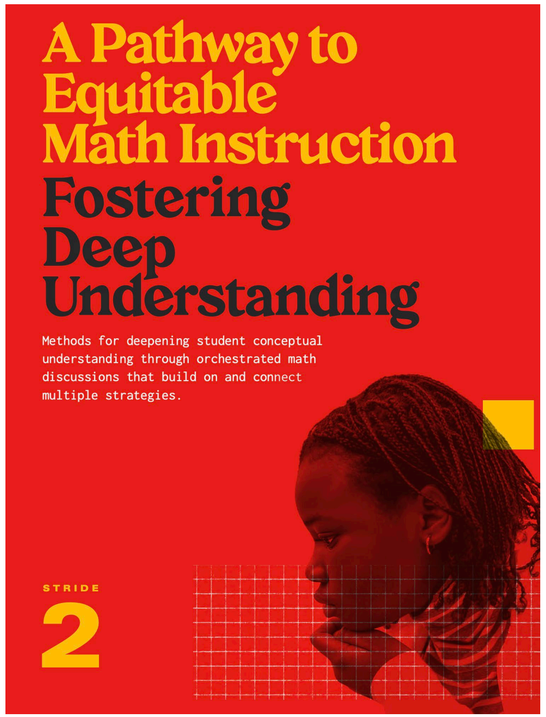
Continuing the pursuit of access and equity in mathematics learning and teaching

A Pathway to Equitable Math Instruction

Fostering Deep Understanding Tool (link)

"The purpose of this tool is to highlight the diversity of student thinking, misconceptions, alternate solutions, and connections so any student, regardless of level, can contribute in meaningful discussion and gain agency and deep conceptual understanding."

(Trust-West, 2020)



Learnings in the Student Success in Mathematics partnership

Reflect – Post – Share

What equity-oriented practices are you currently engaged in as a result of our partnership work?

Next Steps

Pam Buffington
Partnership Lead

Next steps

- Questions, concerns, things you are still wondering about
- Next meeting September 2021
- Complete the partnership SFS (Link)

Thank you!

https://ies.ed.gov/ncee/edlabs/regions/appalachia

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Loucks-Horsley, S., Stiles, K. E., Mundry, S., Love, N, & Hewson, P. W. (2010). *Designing professional development for teachers of science and mathematics.* Corwin.

National Council of Teachers of Mathematics (NCTM). (2014). *Principles to action: Ensuring mathematical success for all*. NCTM

Trust-West, E. (2020). *A pathway to equitable math instruction: Resources and guidance to support Black, LatinX, and Multilingual students to thrive in grades 6-8*. https://equitablemath.org/