Tulsa Regional STEM Alliance

Exponential Growth Math Institute

Overview

Exponential Growth Math Professional Development is a year-long, cohort-based program that transforms how K-8 educators teach mathematics across the Tulsa Region.

Established in 2018 and led by nationally recognized educator Dr. Martha Parrott of Northeastern State University, the program operates on a three-year curriculum rotation that builds instructional capacity through discovery-based, hands-on learning.

By creating supportive cohorts, the program not only develops individual teacher expertise but also fosters collaborative professional communities that drive sustained instructional improvement, increase teacher confidence, and positively impact student learning outcomes.

Structure

- **Summer Institute:** 2 days (16 hours)
- **Fall Follow-Up:** 1 day (3 hours)
- **Spring Follow-Up:** 1 day (3 hours)
- **Total Annual PD Hours:** 18 hours
- **Cohorts:** K-2, 3-5, and 6-8 grade bands

Investment

- **Total Annual Investment:** $60,000
- **Per-Teacher Investment:** $1,000
- **Materials Provided:** $240+ in hands-on resources per teacher
- **Teacher Stipends:** Provided for all sessions

Why This Project Matters

Oklahoma faces a significant mathematics proficiency crisis. According to the 2024 Oklahoma State Report Card, only 31% of students assessed were proficient or above in mathematics, with even lower rates among female students, BIPOC students, and English learners.

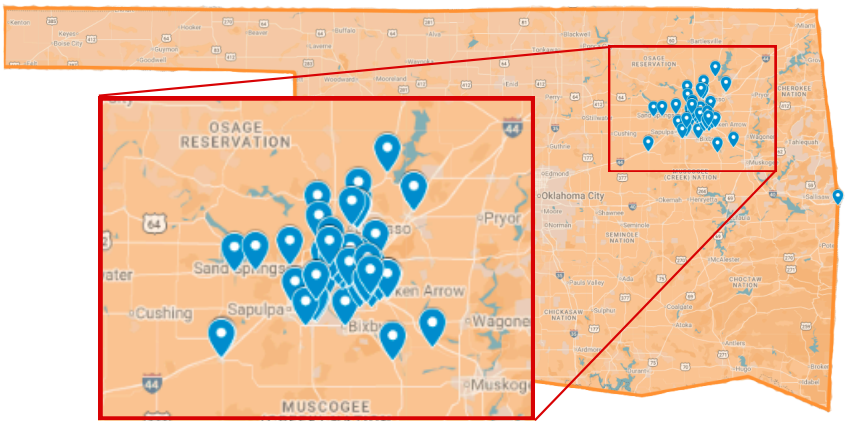
This professional development directly addresses this challenge by equipping teachers to implement tasks that promote reasoning, problem solving, and deep conceptual understanding. Through strategies that provide multiple entry points, encourage diverse solution pathways, and spark meaningful classroom discussion, educators are empowered to engage all students in mathematics learning, build confidence, and foster long-term achievement.

Metrics

The 2025 cohort brought together 60 educators from across Northeast Oklahoma, with participants traveling from as far as Moffett and many teaching in the Tulsa region.

Representing a wide range of racial backgrounds, teaching experiences, and grade levels, most serve at Title I schools and average just over 10 years in the classroom. For 42%, this was their first TRSA professional development experience.

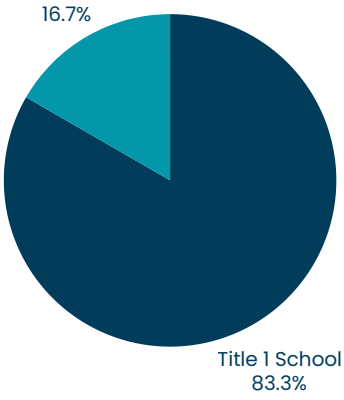
Collectively, these educators will return to their schools equipped to impact 3,597 students this year.



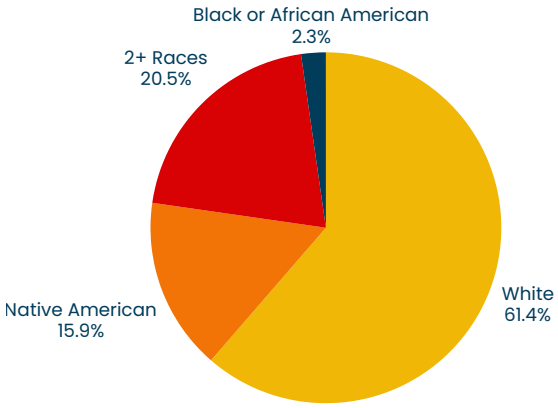
Participation

- **Teachers Served:** 60 (across three grade-band cohorts)
- **Waitlist:** 57 teachers
- **Retention Rate:** 90% year-over-year
- **Geographic Reach:** Northeast Oklahoma

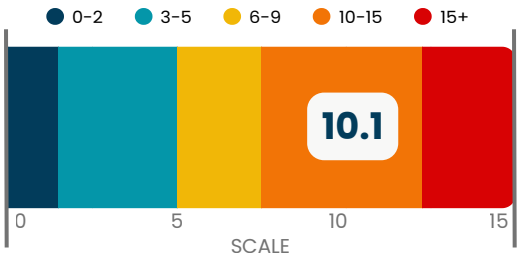
Title 1 Status



Race



Years of Experience



Average years of experience teaching is 10.1 years across all educators.

For 25 of the 60 teachers, this was their first TRSA professional development experience.

Survey Data

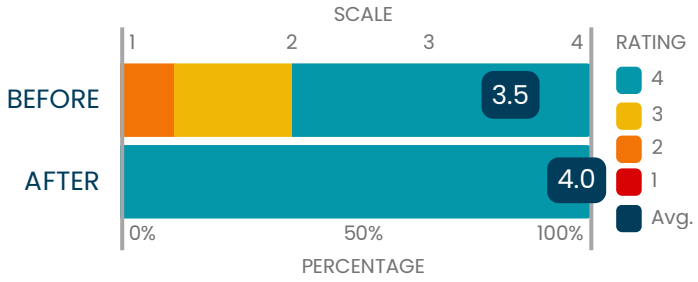
Following the summer institute, participants were asked to complete a reflective survey assessing their perceptions both before and after the professional development. Using a scale of 1 to 4—with 1 indicating low agreement and 4 indicating high agreement—educators rated their confidence, skills, and readiness across multiple dimensions. Of the 60 participants, 44 educators (73%) responded to the survey.

Reactions | Participant Satisfaction & Perceived Value

Educator reactions to the professional development were highly positive. When asked whether the PD was a valuable use of their time, participants reported an average rating of 3.5 prior to the session. Following the PD, this measure increased to a perfect 4.0, indicating unanimous agreement on its value.

Additionally, 100% of respondents reported that they are likely to attend future TRSA professional development opportunities, reflecting both satisfaction with the experience and a strong interest in continued engagement.

Question: This PD is a valuable use of my time.



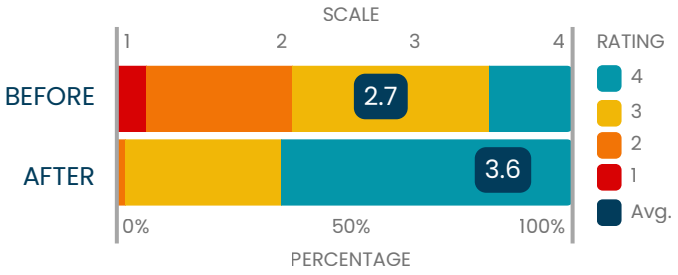
Learning | Knowledge, Skills, Attitudes

Survey results demonstrate significant growth in educator knowledge, skills, and attitudes. Prior to the PD, participants rated their competence in teaching STEM at an average of 2.7; following the session, this increased to 3.6, reflecting notable gains in self-reported skills.

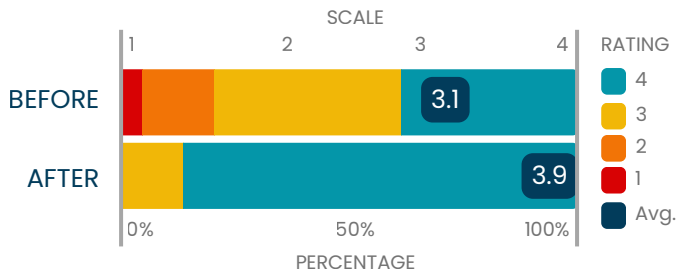
Similarly, their understanding of what constitutes high-quality STEM education rose from an average of 3.1 before the PD to 3.9 after.

In addition, educators nearly unanimously agreed (3.95 out of 4) that the PD provided them with new knowledge and strategies they could immediately implement with students, underscoring both the relevance and applicability of the learning experience.

Question: I feel competent teaching STEM (knowledge and skills).



Question: I understand what high-quality STEM education looks like.

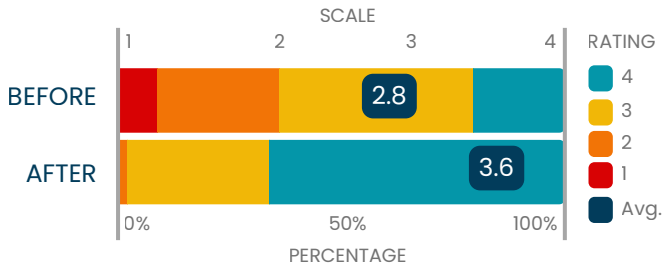


Behavior | Application of Learning

Educators reported substantial growth in confidence and readiness to apply their learning. Self-reported confidence in teaching STEM increased from an average of 2.8 before the PD to 3.6 afterward, indicating meaningful gains in perceived ability.

Additionally, 100% of participants indicated they are likely to use what they learned in their classrooms and feel supported and prepared to share their experiences and knowledge with other educators, demonstrating strong intentions to translate the PD into practice and contribute to peer learning.

Question: I feel confident teaching STEM (comfort and practice).

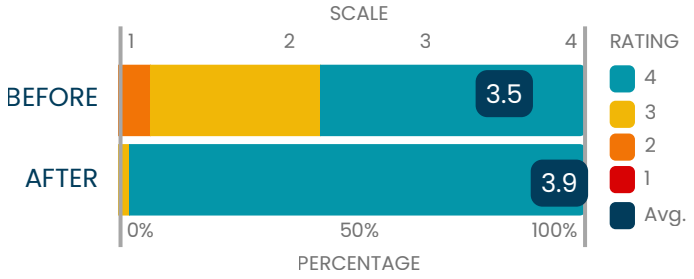


Results | Broader Impact on Students/Systems

Educators' perceptions of the broader impact of professional development on students and systems improved following the PD. When asked whether student achievement can be influenced by professional development experiences, participants' average rating increased from 3.5 before the PD to 3.9 afterward.

This shift indicates a stronger recognition among educators of the connection between their own professional growth and potential positive outcomes for students, highlighting the systemic value of TRSA PD experiences.

Question: Student achievement can be influenced by professional development experiences.



Quotes

What is one "take-away" you're leaving with after attending this PD?

"The importance of providing high-quality math tasks to encourage students to start thinking, not just mimicking. I also learned what quality math tasks actually look like, so I can begin implementing this."

1st Grade Teacher, Mayo Demonstration Academy

"The need for me to change my teaching style. Less direct instruction and more hands-on/discovery learning. This PD gave me many resources to start this transition."

6th Grade Teacher, Jenks West Intermediate

"That high-quality math instruction is absolutely imperative to me, the needs of our unique and diverse learners!!"

3rd-5th Grade Teacher, Dove Science Academy

"How to let my students engage more effectively in purposeful struggle, and I will be changing how I present material and problem-solving to my students."

3rd Grade Teacher, Garfield STEAM Academy