

PROFILES IN SUCCESS

Metropolitan School District of Warren Township INDIANA

Transforming All Students into Mathematical Problem Solvers

Educators at the large, urban Metropolitan School District of Warren Township in Indiana wanted to overhaul their approach to education in order to better serve their 13,000 students—mostly from low income backgrounds.

They strove to tackle math understanding and problem solving, which were falling short of desired state standards. Educators noticed that many students were disengaged and merely skimming the surface of conceptual understanding. “Students were learning math concepts but not mastering them—recalling them, but not committing them to long-term memory,” says Warren Township’s Director of Professional Learning, Kate Schwartz. Without fully understanding mathematical concepts, students were having trouble applying class examples and formulas to new and novel math problems—like the ones on state tests.

Spreading a Culture of Innovation for Students and Teachers

Warren Township teachers needed the right tools and technology to help all students engage in mathematical problem solving. The district introduced a blended learning program that mixed traditional classroom instruction with technology, small group instruction and data reports to track individual student needs.

A Race to the Top grant provided 1:1 access to devices for all students, and opened the gates for innovative and personalized education technology, including the ST Math® game-based learning program.

“ST Math allowed all students to access conceptual learning and supported them at their own individual level,” says Schwartz. “Students could access the curriculum at their own pace.” After piloting ST Math at two schools, Warren Township expanded district wide.



90% of Warren Township teachers surveyed agree that ST Math helps improve student perseverance when facing challenging problems

Because the program allows students to solve math problems by manipulating visual models, it is accessible and engaging to all students, regardless of ability or language proficiency. Mercedes Moore, Instructional Specialist for Sunny Heights Elementary, saw this feature impact the most hard-to-reach students at her school: “ST Math helps our students with language barriers—the English learners (EL)s and kids below grade level in language—because it separates math achievement from the ability to read.”

Some teachers had anxiety about integrating a new program, but were quickly won over by their students’ enthusiasm. “I had kids come to me begging to play ST Math every day. They’d even choose it over recess,” says Amy Abbey, a Kindergarten teacher at Sunny Heights.

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District Facts

School Grade Levels: PreK-12
School Enrollment: 12,250
District Type: Large, public, urban
Number of Schools in District: 19



Demographic Breakdown

African American: 52%
Caucasian: 35%
Hispanic: 12%
Asian: 1%
FRL: 72%
Diverse Learners (SPED): 16%



ST Math Implementation

Grades using ST Math: K-6, MSS
Type of ST Math instruction:
Classroom

90%

of Warren Township teachers surveyed agree that ST Math:



Has a positive impact on student attitudes about math and learning



Has helped them in reaching the hardest-to-engage students this year



Has improved student perseverance when facing challenging problems



Positively impacts students' depth of understanding about how math works

Productive Struggle, A Lasting Measure of Success

The initial student excitement for math in response to the innovative changes taking place in classrooms across Warren Township was not simply a fleeting spark of interest; it has proven to be a lasting change in the way their students learn.

Instead of being intimidated by difficult tasks and problems, students and teachers have adopted a growth mindset—challenges and failures are now opportunities. "ST Math has taught our students and teachers that it's okay to have productive struggle," says Moore.

Because students are learning while playing games, they are motivated to problem solve in different ways—no hints needed. On any given day you can see a kindergartener think through one of the digital challenges using blocks at his desk, says Abbey, or a fourth grader drawing on her piece of paper to visualize complex multiplication. "These kids are not fazed by

momentary failure; they just keep trying."

At Warren Township teachers also have a growth mindset and continue to adapt their instructional practices. For instance, they have learned to facilitate the struggle that takes place during an ST Math session without rushing to help with the answer. "Sometimes my students get frustrated—those games are hard!" says Abbey, "but I constantly ask them questions: What did you do? How did you do it? What can you do differently? Most of the time they figure it out on their own."

In Amy Abbey's classroom of kindergarteners, one student began the year at very low levels of reading and math. "He's a kid that really had to work hard at it, but when it clicked—it really clicked for him," says Abbey. "He's caught up to the other students and is begging to play ST Math every day."

