

IMPACT STUDY

LaGrange School District 102, Illinois

CHALLENGE: Only 56% of K–5 students met or exceeded expectations on the PARCC® mathematics assessment in 2015.

SOLUTION: LaGrange School District collaborated with *HMH Professional Services* to support math teachers with ongoing, job-embedded professional learning.

RESULTS: In just one year, student achievement on the PARCC mathematics assessment increased by 9%.

THE CHALLENGE

When the teachers and administrators at LaGrange School District 102 realized that one-and-done professional development wasn't making the long-term impact on teacher capacity and student performance they desired, it was time to make a change.

Looking at the standards under ESSA, the district challenged themselves to provide sustained, collaborative, and data-driven professional learning opportunities for all teachers. They knew they needed to build capacity within the teaching staff to promote the cycle of continuous learning (Calvert, 2016). With this in mind, the district turned its focus to dedicated, ongoing professional development.

THE SOLUTION

LaGrange and HMH formed a partnership during the 2015–2016 school year to support students and teachers. The comprehensive solution consisted of implementing the *Math Expressions* program with a robust three-year professional learning plan for all teachers in Grades K–5.

The collaboration between LaGrange and *HMH Professional Services* designed partnership elements to meet the specific needs of the district, including intensive coaching, building a strong foundation of mathematical knowledge, and collaboration among teachers and with experts.

THE RESULTS

Over a matter of months, LaGrange and the *HMH Professional Services* team worked together to build capacity and achieved a 9% increase in the number of students testing well in mathematics—starting a trend the district believes will continue into the future.

QUICK FACTS



INCREASE
in Mathematics
Student Achievement



K-5
STUDENTS



4
ELEMENTARY
SCHOOLS

PROGRAM: **MATH EXPRESSIONS®**

SCHOOL YEAR: **2015–2016**

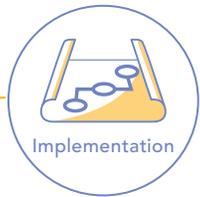
METHOD OF ASSESSMENT: **PARCC** Partnership for Assessment of Readiness for College and Careers

What is Math Expressions?

Math Expressions is a program for students in Grades K–6 that adheres to the five learning strands identified by the National Research Council (NRC, 2001):

- Conceptual understanding
- Procedural fluency
- Strategic competence
- Adaptive reasoning
- Productive disposition

PARTNERSHIP ELEMENTS:



Math Expressions Implementation

LaGrange and HMH worked together to support students and teachers through a sustained implementation of the *Math Expressions* program in all four elementary schools across the district. Each school was assigned an instructional coach to help build capacity in the program. Approximately 15 teachers per grade level were included in the capacity building effort—totaling 100 teachers across the district, including both general education and special education teachers. Building strong relationships between *Math Expressions* coaches, teachers, and students made it possible to significantly build capacity in individual classrooms, in schools, and throughout the district.



Strong Foundation of Mathematical Knowledge

The initial *Program Overview* and *Beyond the Basics* seminars introduced the foundations of the program, taught teachers how to implement *Math Expressions*, and introduced them to interactive workshops that reinforce best practices in math instruction. The *Math Talk* workshop taught teachers about the remarkable benefits of conversation, collaboration, and student knowledge exchange within the mathematics classroom.

The *Math Models* workshop was used to help teachers get a clear picture of the K–6 progression for students acquiring and understanding Math Models and applying them throughout their math education. During the *Problem Solving in Math Expressions* workshop, teachers explored guided and independent learning activities that develop problem-solving skills and encouraged meaningful math talk.



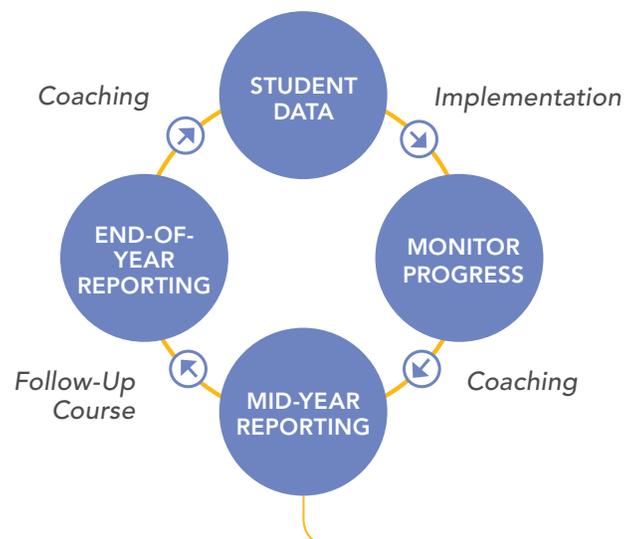
Capacity Building Through Coaching

Through a total of 14 group coaching sessions during the 2015–2016 school year, teachers and administrators learned how *Math Expressions* focuses on certain instructional strategies and how these strategies benefit students. Coaching helped teachers build content knowledge through a job-embedded, side-by-side professional learning experience.

Administrators also worked with the *HMH Professional Services* coaches to identify math teachers at each elementary school to act as instructional facilitators. These facilitators then worked with HMH coaches to learn how to build capacity in their schools.

In the 2016–2017 school year, coaching progressed to focus on conducting demo lessons, engaging teachers in modeling discussions, and collaborating with the teachers on strategies to help students use math drawings and math talk.

FIGURE 1 Model for Continuous Improvement





Dedicated Leadership

The LaGrange leadership team made a commitment to drive instructional improvement across math classrooms throughout the district. They acknowledged that administrators as well as teachers needed to develop a solid understanding of math, so they participated in *Math Expressions Professional Learning* sessions targeted to their specific needs.

For example, the sessions provided principals with a toolkit of resources to help them support teachers and understand what instructional practices to look for during classroom observations. Administrators soon realized that there was no “silver bullet” for improving the mathematical proficiency of their students, so the district and *HMH Professional Services* co-developed a three-year professional learning plan to achieve effective math instruction. The plan allows LaGrange to implement personalized professional learning and build capacity for effective math education to improve their students’ math skills over time.



Family Engagement

Engaging families is critical to learning more about individual students’ understanding of math. At a Parent Night co-led by *HMH* consultants and *Math Expressions* teachers, families were encouraged to communicate with their children about learning math in a positive and supportive way. Consultants and teachers explained the outcomes of the *Math Expressions* program and encouraged parents to help their children develop discovery and problem-solving skills. After the event, both teachers and parents reported increased engagement in their students’ mathematical learning.



Collaboration Among Teachers and with Experts

The LaGrange leadership team emphasized the importance of collaboration among teachers. To this end, *HMH* encouraged teachers to conduct “Gallery Walks” where the teaching teams from each school presented to the other teams something they had learned from the *Math Expressions* training. This approach was aided by training materials written in a “learn while teaching” style that encouraged teachers to learn by doing and then share new ways of teaching.

The teachers also maintained a shared Google®Doc to discuss the teaching tips and tricks they were learning. This approach empowered teachers to try new things and collaborate in and outside of the classroom. The *HMH* coaches used questions submitted through *AskHMH™*, a personalized support service staffed by *Math Expressions* experts, to pinpoint issues important to teachers and identify areas of focus for coaching sessions.

“After forty-eight years as a public school educator in 8 states and 12 districts, *HMH* provided the **best ongoing professional learning opportunities** I have ever experienced. Their staff modeled best practices in customized professional learning. **I was in awe of the process: lucky staff, lucky students, and lucky families.** *HMH* understands and implements the concept of personalized learning to support ongoing professional **development and builds staff capacity** in ways that most companies are still searching to discover.”
To the future of math education! —DALE TRUDING, Former Assistant Superintendent

THE RESULTS

In partnership with *HMH Professional Services*, LaGrange School District 102 worked to create more time for professional learning and sustainability for *Math Expressions* teachers throughout the district.

The *Getting Started Courses*, teacher collaboration, and in-classroom coaching developed habits and procedures to help move students toward mathematical proficiency. The student achievement results presented in Table 1 are preliminary evidence of an effective professional development plan within the district.

TABLE 1 LaGrange School District 102

Percentage of students who achieved a "Meets or Exceeds Expectations" on PARCC 2015 and 2016 by grade level		
MATHEMATICS		
	2015	2016
Grade 3	60%	66%
Grade 4	60%	67%
Grade 5	52%	69%

PARCC

All students in Grades 3–8 across the district completed the *Partnership for Assessment of Readiness for College and Careers* (PARCC) Assessment during the spring of 2015 and the spring of 2016.

Overall the percentage of students in Grades 3–8 who "Met" or "Exceeded" Expectations on the Mathematics assessment increased by 9% between spring 2015 and spring 2016.

As shown in the chart to the left, students in Grades 3–5 who were using the *Math Expressions* program and whose teachers received ongoing coaching from *HMH Professional Services* made strong gains in one year, averaging a 10% increase on the PARCC Mathematics assessment.

CONCLUSION

During the 2015–2016 school year, the LaGrange school district implemented the *Math Expressions* program and provided sustained, intensive professional development for their teachers. *HMH Professional Services* worked with the district to design a professional development program that:

- Builds a strong foundation of mathematical knowledge
- Employs intensive in-person coaching to encourage the use of best practices
- Encourages teachers to collaborate with each other and with math experts
- Helps teachers engage families to support their students' math learning

LaGrange district teachers and administrators are convinced that HMH's consistent coaching and support was key to the results achieved in just a matter of months using *Math Expressions*. After the first year of collaboration between LaGrange and HMH the district had achieved a 9% increase in the percentage of students who "Met" or "Exceeded" Expectations on the PARCC Mathematics assessment. And that is just the start of the improvement foreseen.

REFERENCES

Calvert, L. (2016). Moving from compliance to agency: What teachers need to make professional learning work. Oxford, OH: Learning Forward and NCTAF.

APPENDIX

District Characteristics

LaGrange School District 102 includes four elementary schools and one junior high school, serving 3,154 students. The schools in the district have an average class size of 23 students, with a 16:1 student-teacher ratio, and 77.5% of teachers have earned a Master's degree or higher. The district set four goals for the 2015–2016 school year:

- 1. Student Learning:** LaGrange School District 102 will develop and support the whole student through equitable access to a Common-Core-aligned curriculum, programs, and services that have demonstrated success in promoting student achievement, student growth, and social/emotional development.
- 2. Personnel:** LaGrange School District 102 will develop best practice processes to support the hiring and retention of effective and competent staff while monitoring job satisfaction within a collaborative working environment.
- 3. Finance:** LaGrange School District 102 will demonstrate fiscal responsibility through a transparent process of budget development that strives for no structural deficit and effective and efficient delivery of services for students.
- 4. Community Engagement:** LaGrange School District 102 will demonstrate leadership in communication to a variety of constituents through a variety of media in order to increase the visibility of the district, transparency of processes, and engagement of parents and the community.

THE HMH RESEARCH MISSION STATEMENT

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