shifting the culture of mathematics in your district

Leaders Share What Worked for Them, Their Teachers, and Their Students

Carnegie Learning
Contributors

1. Dr. Almi Abeyta
Deputy Superintendent for Teaching and Learning
Santa Fe Public Schools, NM
Race: 56.9% White, 32.9% Hispanic, 10.2% Other
Low-Income: 28%

2. Donna Ash
Director of Elementary Curriculum and Instruction
Phenix City Schools, AL
Race: 32% White, 60% Black, 8% Other
Free and Reduced Lunch: 67%

3. Dr. Lenisera Barnes-Bodison
K–12 Mathematics Coordinator
DeKalb County School District, GA
Enrollment (2014–2015): 98,700*
Race: 37.4% White, 54.6% Black, 9.5% Hispanic,
6.1% Other, 2.0% Multi-Racial
Free and Reduced Lunch: 68.1%

4. Tim Filipovich
Executive Director of Teaching and Learning
Youngstown City Schools, OH
Race: 65% Black, 15.2% White, 13.8% Hispanic,
5.8% Multi-Racial
Economically Disadvantaged: 98.2%

*Third largest school district in Georgia
“So why is education falling short in preparing students for 21st century work? ... Jobs that require routine manual and thinking skills are giving way to jobs that involved higher levels of knowledge and applied skills like expert thinking and complex communicating.”

Every student can learn math with the right type of instruction. It allows them to build deep conceptual understanding and apply their knowledge to real world scenarios and problem solving. As our students are expected to continue to master these skills for assessments and beyond, the traditional way of teaching needs to change. This is key for preparing them for success in college, careers, and the rest of their lives.

Making the shift to more effective math instruction can be a challenge. Carnegie Learning spoke with instructional leaders who have done this work in districts across the country, and they shared their experiences and advice for success.

“The ‘sage on the stage’ traditional teaching style does not engage students.”

Tim Filipovich
Director of Teaching and Learning
Youngstown City Schools

1 21st Century Skills: Learning for Life in Our Times (Bernie Trilling, Charles Fadel)
Look At Your Data

Shifting the culture of math instruction is a big undertaking, so it’s important to know why you are making this change. Many leaders decide to transition because they want to see improvement in student scores and performance. Dr. Almi Abeyta, Deputy Superintendent of Teaching and Learning at Santa Fe Public Schools, said, “We were looking at our data in combination with doing our walkthroughs and realized that we needed to focus on content and standards, and work on what type of pedagogy would go along with that content.”

Donna Ash, Elementary Curriculum and Instruction Director at Phenix City Public Schools, finds that reviewing the data as a group can help to catalyze change. “The data doesn’t lie to you, it just is what it is. From there we can think about what can be done differently.”

Students today are being required to think critically, problem-solve, and apply their mathematical knowledge. If the data shows that students are unable to demonstrate these skills, shifting the culture of math instruction is critical.

“I was exposed to this type of instruction after my first year of teaching and I was in awe, to say the least. What I was experiencing in that professional development—I wanted that for every child.”

Donna Ash
Elementary Curriculum and Instruction Director
Phenix City Public Schools
Set Goals and Stay Focused

It can be tempting to try to make numerous changes quickly, but Dr. Abeyta found success by starting small and getting it right before scaling. “You can’t do everything at once. You do something well in one area and then you transfer that over.” She decided to start by focusing the first two years on shifting ELA instruction in her district before addressing math. The approach has worked well for them, and students at Santa Fe Public Schools performed better on the PARCC assessment than the rest of the state.

Once the district had spent time addressing goals for ELA, they were able to look at increasing the rigor of their math instruction. “We’ve been training all our leaders—our principals, assistant principals, coaches, and teachers—and just being very purposeful about that. We are really building up our leadership capacity and our teacher capacity as well.”

“When I’m leading change in a district, I take one or two things, do them well, and stay focused on them.”

Dr. Almi Abeyta
Deputy Superintendent for Teaching and Learning
Santa Fe Public Schools
Build a Winning Team

Getting the right people involved in your initiative is also key for success. Dr. Lenisera Barnes-Bodison, K-12 Mathematics Coordinator at DeKalb County Schools, put together an advisory group that consisted of stakeholders at all levels. “I looked at people who were in the trenches because we could do more job-embedded clinical conversations—looking at student work, looking at scenarios from the classroom—so the advisory group consisted of teachers and department chairs. We also welcomed principals, assistant principals, and district leaders.” This representation provided the group with a wide variety of perspectives and expertise.

Dr. Abeyta took a similar approach. Rather than simply rolling out professional development to teachers, she included the math department heads in the planning. “We would finish a session with teachers, then do conference calls with two lead teachers from each school to plan next steps and what the PD should look like. So we had the lead math teachers on board and they could communicate to the math department what was going on.”

When choosing who to help lead the effort, it’s important to consider both their level of interest in the shift and their level of influence over others. Those with a high level of both interest and influence can be excellent advocates who motivate others. Ms. Ash experienced this firsthand: “Early on, I began to see who the leaders were in the room. Sometimes people think it’s the negative people you need to stay away from, but if they’re coachable, they are the first people you need to get to. A lot of people shy away from those people because they don’t want to have the discussion, but I worked hard with them.”

![Figure 1: Power versus interest (Price, 2009) Source: Saylor.org](image-url)
Create a Common Vision

Once your group is in place, it’s important to give them a voice and a sense of ownership in the work. Dr. Bodison spent the first year laying the foundation by sharing articles and best practices with her group. She says, “I wasn’t trying to push change, I was trying to grow understanding. When you try to make change happen, it doesn’t. There’s so much resentment. But if you just put it out there, read and explore, and say, ‘I found this interesting. What are your thoughts?’ That makes people reflect on their current practice.” Giving teachers this opportunity to reflect helped them to see the value in trying a new approach.

Dr. Abeyta used a similar strategy, personally attending the professional development sessions to help teachers understand the importance of the work and provide a platform to share their thoughts and concerns. “If you have a group that’s a little resistant, have someone in authority in that group to answer their questions. What I realized was that they found a place where they could vent and be heard. We listened to them and heard where they were coming from. Once we got past that, we moved on and didn’t let it consume the meeting.”

“Everything was about reflecting on your current practice. ‘What would happen if ... ?’ ‘What could you do differently?’ And it just grew.”

Dr. Lenisera Barnes-Bodison
K–12 Mathematics Coordinator
DeKalb County Schools
Provide Necessary Support

Ongoing support for teachers and coaches is critical to making the shift and seeing it through to success. Tim Filipovich, Director of Teaching and Learning at Youngstown City Schools, says, “Professional development support offered throughout the year is critical. There will be times when teachers are going to struggle and they are going to need immediate feedback so that they can move forward and not return to comfortable practices. To me, if this is not something you’re used to doing, you’re going to go back to the way you did things before. If you don’t have that immediate support and answers to questions, then chances for successful implementation is going to falter.”

Dr. Bodison shared the importance of critically evaluating the support that will come with new curricula or product adoption. “What happens after you purchase? How do you build and sustain? Most training is based on product use, but you need more than use. You need content development, strategy development and processes. What professional development is embedded?” She cautions leaders to look beyond the “flash and glam” of products to make sure that the support and training you receive are content- and pedagogy-driven, not product-driven. “They should be able to share their framework for learning, not just tell you features.”

Dr. Abeyta believes teachers must be given support before they can be held accountable for change. “It’s that whole reciprocity of accountability that Dr. Richard Elmore talked about. For every ounce of support that I give you, there is an ounce of accountability. So I teach first, provide support, and then I hold accountable.”

Professional development support should also be customized and tailored to your district’s specific needs. Dr. Abeyta worked with her Carnegie Learning Manager of School Partnerships to identify exactly what to focus on to help students overcome their unique issues. “Our Manager of School Partnerships is a thought partner with me as I lead this district. We’re small, and I have limited resources. I don’t have a math department here or a math person in the curriculum office. I send her our data and we partner and plan together as if she were a coach and I were a principal, but I’m principal for the entire district.”

“If you’re going to have a high expectation for your teachers to implement with fidelity, you’ve got to have a safety net.”

Tim Filipovich
Director of Teaching and Learning
Youngstown City Schools
Ensure Sustainability

Leadership is essential for supporting the shift long-term. Donna Ash says, “You need a leader who believes in the best practices and pedagogy, otherwise they may work counter to where you’re trying to go, and that’s hard. Get people in leadership positions who understand that, and then you have sustainability.”

As the work progresses in your district, evaluate areas you would like to focus on and adjust your plan accordingly. “I think it’s so important to have internal coherence while you’re doing this work,” Dr. Abeyta says. “You see what’s happening in the schools and make adjustments to your professional development based on your qualitative and quantitative assessment.”

It’s also important to realize that this work does not happen overnight. Your plan should account for the support that will be needed beyond Year 1 to make sure that staff can continue driving the shift and not revert to previous instruction methods. Dr. Abeyta carefully considered how to follow up on the professional development that was provided to high school math teachers in her district. “This year, I asked our Manager of School Partnerships to do on-site follow-up PD for them so they can work at their own schools in a collaborative coaching model,” she says. “We have a long way to go in math, so I’m not looking at a relationship with Carnegie Learning for just one or two years.”
Why It’s Worth It: Helping Students Achieve

Ultimately, all the work we do to shift instruction is for the benefit of our students. As Dr. Bodison says, “It’s not just about our state assessments. We’re talking about the SAT, PSAT, or any type of exam to be placed at a job. That’s what we really tried to get teachers to understand, and that’s how we laid that foundation.”

Aside from increased performance on assessments, Dr. Abeyta has also seen a very real improvement when she goes on classroom walkthroughs. “I see the work that students are doing and I see improvement in our schools. It’s so worth it. I’m proud of the fact that in ELA we performed better than the state, and I know it’s because of our focus and accountability. I know that we had success in one area and now we’re doing the same thing in math, and we’re going to see growth in math too. That’s what gets me excited.”

Ms. Ash has seen dramatic results in the districts she worked with as well. “When the stars aligned and you had someone who believed in it and was implementing it, those students were outperforming others in the district. Socioeconomic status didn’t matter, background didn’t matter, and ethnicity didn’t matter.”

She remembers a conversation she once had with a mother who expressed that her adult daughter was unable to follow her dream of attending pharmacy school because of her math scores. Ms. Ash shared with her that there was nothing wrong with her daughter, but the way she had been taught. As she demonstrated how math should be taught—through making connections and building real understanding—the woman began to cry. “Why didn’t somebody teach me like that?” she asked. “My daughter could have had better opportunities.”

This moment illustrates why Ms. Ash believes the shift is so important. “If the teacher is the most important factor of student success, then the most important thing for me as Curriculum Director is to make sure teachers have the knowledge, understanding, support and resources they need to be successful. We’re saving students one teacher at a time.”
Look at Your Data
Are your students demonstrating mastery of critical math skills? If not, it’s time for an instructional shift.

Set Goals
Trying to tackle multiple things at once can be challenging. Choose one or two goals to begin with, do them well, and then scale to other areas.

Build a Winning Team
Get the right people involved in the effort and have a variety of people contribute, including teachers, principals, and district leaders.

Create a Common Vision
Give your group a voice and a sense of ownership in the work. Reflect together on what could change and what the impact might be. Allow people to share concerns and be heard so that you can move forward.

Provide Necessary Support
Professional learning support is critical for making the shift. You cannot hold teachers accountable unless you give them the right support.

Ensure Long Term Success
Make sure that the work you’ve done is sustainable with people in place who are committed to driving it forward. Assess what is happening in your district and where you can make changes for maximum success. Continue learning, adjusting, and carrying the work forward.