

DOINGWHATWORKS



Audio

FULL DETAILS AND TRANSCRIPT

Professional Development in Secondary Mathematics

Castle View High School and Legend High School, Colorado
November 2008

Topic: National Math Panel: Major Topics of School Algebra

Practice: Multiple Paths

Highlights

- Embracing the professional learning community (PLC) concept
- Using PLCs to focus on what is essential in algebra
- Individualized performance plans for teachers
- Role of learning center in district for staff development
- Peer observation as embedded staff development
- High school and middle school collaborative meetings
- Structure for planning by math teachers (and others) within the academy structure
- Learning from teachers who are outside the subject and level

About the Sites

Castle View High School

Castle Rock, CO

Demographics

85% White

9% Hispanic
2% Black
2% Asian
1% Native American
7% Free or Reduced-Price Lunch
2% English Language Learners
9% Special Education

Castle View High School operates on a rigorous academy model designed to provide smaller learning communities within the high school. The Math, Science, and Engineering Academy offers innovative courses in science, technology, engineering, and mathematics with a supportive staff helping all students achieve their potential while acknowledging each individual's learning style. Features of mathematics instruction at Castle View are:

- Integration of mathematics content within mathematics and across other subjects;
- Implementation of technology into instruction;
- Incorporation of problem solving into each level of mathematics; and
- Accessibility of algebra to every student.

Legend High School

Parker, CO

Demographics

2008-09 data, for 9th grade only:

90% White
5% Hispanic
3% Asian
2% Black
3% Free or Reduced-Price Lunch

Legend High School is in its first year of operation in Douglas County School District (Colorado). The mathematics staff has developed mathematics curriculum, instruction, and assessments that emphasize 21st Century skills and learning. Mathematics content is made interesting, motivating, and meaningful through relevance. Features of mathematics instruction at Legend High School are:

- Academic rigor and relationships are emphasized;
- Technology accelerates deeper understanding of algebra topics; and
- Integrated curriculum applies mathematics knowledge to other courses and out-of-classroom experiences.

Full Transcript

My name is Lisle Gates, Principal of Castle View High School. Castle View High School is located in Castle Rock, Colorado and is part of the Douglas County School System.

My name is Corey Wise, Principal of Legend High School here in Parker, Colorado in Douglas County School District.

Gates: Our math program aligns with the standards within the district. We do a good job of matching those benchmarks and those standards and those at-course/end-of-course assessments.

Our district embraced professional learning community concept five, six, seven years ago. And so all schools in Douglas County have a professional learning, or PLC, design, so we can meet professionally and work on the issues—curricular issues and other issues—that impact instruction within the building.

Wise: Within algebra itself, we've asked our teachers to use PLC time all during the planning year and now, within our time during the school year, to really focus on what's essential.

You have to set up systems or mechanisms always to look at staff development, professional development, individual development. I think one of the things we do to look at our teacher professional development is you start with the individual. Individualized performance plans, or their goal plans, is key. So, I think you sit down—no matter whether or not it's a first-year teacher, a third-year, or a 20-year veteran—to say where we are at and where do you want to get to? And you set up the key plan for themselves. Within our district, we have the learning center opportunities, which have staff development. We really tap into strengths not only in our building, but also within the entire district to go and learn from other great teachers. As a school, we embed staff development time or professional learning community time within our PLCs where our departments are coming together. They're using the same sort of observation forms, which focus on student learning, understanding by design, rigor and relevance. So when they are in each other's classrooms, they are having the same dialog as what they are having within any administrator or evaluator. We challenge them to not only get out and see other math teachers, but then also different subject areas. I think one of the best ways in which we build relevance into math is ask a non-math teacher what's really important. Too often within our subject area, we take ourselves way too seriously, and you can't get past letting certain things go. Ask another person outside of your area what's really important in math, and you get a better idea of, "Well, maybe this isn't as important as what I thought," to really narrow down on essential learning.

Gates: Our math teachers are working really closely with the middle school math teachers in summer workshops, meeting as often as we can meet during the school year, to address those issues about how we meet the needs of kids that are different levels of math success and understanding the math.

We're really proud of what we are doing at Castle View High School because of our different schedule. We also have a different structure here. We're organized around learning academies rather than on content

areas, and so, I don't have a math department, per se, in the school. What we've got is math teachers that are working in each of our five school-within-a-schools. We also know that we need to get all of those teachers together, math teachers together, so they can talk about the issue of math instruction and how we can make kids successful no matter which academy that they happen to be in.

Three days a week, Tuesday, Wednesday and Thursday, we give our teachers 40 minutes time to work together in content areas—so, that's all the math teachers getting together—or in academy, PLC. Our teachers are spending one and a half to two hours every week working together professionally in a PLC setting. So we're using that time for teachers to have an opportunity of getting together professionally. Within our academy model, it's not an area where all math teachers come and talk about math. It is an office where every discipline is represented, and so we've got teachers that are science teachers that are having better conversations with math teachers around how we can improve math instruction and how we can tie that better into the real world.

Wise: There is a clear focus that we wanted to create a 7-12 program in the Legend feeder area. I think the relationships we build with the elementary schools is key. That life line of building that K-12 model is more than just talk; it's getting out and being in those classrooms, connecting with those kids, letting elementary teachers come up here and see what the high school is about so they can see what a high school classroom is. And honestly, I think sometimes getting high school teachers down to those elementary classrooms where every wall is an instructional wall, where you have first graders breaking apart and actually working independently or in groups and collaborating within their learning, to remember to get back to our level, that is not just about content. It's about using content, sharing content, thinking about content and also the skills within that content.

Gates: There is more talk in this building by more staff members about math than in any school I have been in in my 41 years of education. The reason for that is we have got math teachers that are mixing with all kinds of other content area teachers in the building.

Wise: I think that's a number one model within our 7-12 alignment, making sure we take the time out when we have professional learning communities to build-in middle school teachers with high school teachers. Whether or not you'd ever look at looping teachers, we are on the same campus. If students want to take a high school class in seventh or eighth grade, can you pass the barrier of, "This is our school; they are middle school student," and having them come up to the high school and take those classes. I think that's a key thing: that we need to get past grade level and look at student learning level and place them appropriately so they are challenged and connected and excited about their different subject areas, and especially math.