Investing in and Scaling-up Professional Development and other Systems that Support Every Student, Every Day:

Why Math and Science are critical to "critical thinking" and student engagement and how we can build a statewide system of support on the foundation of work we have established in Nebraska
What PROBLEM are we trying to solve?

- Value of "open"
- Quality control
- Silo of thinking, solving important issues faster
- Improving
- Enabling
- Informing
- Educators
- Traditional learning
- Motivation of Open
- Sharing & opportunity to improve
- Sustain openness
- Leaps towards innovative applications
- Rapid level of innovation
- Investigating
- Open
The Problem with Traditional PD

Where you want to be!

PS - Good Luck!

Where you are
NY Times Editorial a year ago:

Nearly 90 percent of high school graduates say they’re not interested in a career or a college major involving science, technology, engineering or math, known collectively as STEM, according to a survey of more than a million students who take the ACT test.

http://www.nytimes.com/2013/12/08/opinion/sunday/who-says-math-has-to-be-boring.html?_r=0
NY Times Editorial Recommendations

• A More Flexible Curriculum
• Very Early Exposure to Numbers
• Better Teacher Preparation
• Experience in the Real World

http://www.nytimes.com/2013/12/08/opinion/sunday/who-says-math-has-to-be-boring.html?_r=0
Student Engagement
In 1989 the National Council of Teachers of Mathematics (NCTM) launched the standards-based education movement in North America with the release of *Curriculum and Evaluation Standards for School Mathematics*, an unprecedented initiative to promote systemic improvement in mathematics education. Now, twenty-five years later, the widespread adoption of college- and career-readiness standards, including adoption of the United States of the Common Core State Standards for Mathematics (CCSSM) by forty-nine of the fifty states, provides an opportunity to reenergize and focus our commitment to significant improvement in mathematics education.

What is different and promising today, however, is the hope that the implementation of common standards, and the new generation of aligned and rigorous assessments, will help to address the continuing challenges and expand the progress already made. The need for coherent standards that promote college and career readiness has been endorsed across all states and provinces, whether or not they have adopted CCSSM. As NCTM publicly declared in the Position Statement Supporting the Common Core State Standards for Mathematics, released in 2013:

The widespread adoption of the Common Core State Standards for Mathematics presents an unprecedented opportunity for systemic improvement in mathematics education in the United States. The Common Core State Standards offer a foundation for the development of more rigorous, focused, and coherent mathematics curricula, instruction, and assessments that promote conceptual understanding and reasoning as well as skill fluency. This foundation will help to ensure that all students are ready for college and the workplace when they graduate from high school and that they are prepared to take their place as productive, full participants in society.

What is the same today is the need to understand that standards do not teach, teachers teach. New standards provide guidance and direction, and help focus and clarify common outcomes. They motivate the development of new instructional resources and assessments. But these standards do not tell teachers, coaches, administrators, parents, or policymakers what to do at the classroom, school, or district level or how to begin making essential changes to implement the standards. Moreover, they do not describe or prescribe the essential conditions required to ensure mathematical success for all students. Thus, the primary purpose of Principles to Actions is to fill this gap between the development and adoption of CCSSM and other standards and the enactment of practices, policies, programs, and actions required for their widespread and successful implementation. Its overarching message is that effective teaching is the cornerstone of change that ensures that all students learn mathematics at high levels and that such teaching requires a range of actions at the state or provincial, district, school, and classroom levels.

Looking back at mathematics education and student achievement in mathematics, we find much to celebrate. As a result of the gradual implementation of a growing body of research on teaching and learning mathematics, and the dedicated efforts of nearly two million teachers of mathematics in North America, student achievement is at historic highs. For example, the percentage of fourth graders scoring “proficient” or above on the National Assessment of Educational Progress (NAEP) rose from 15 percent in 1990 to 45 percent in 2013, and the percentage of eight graders scoring “proficient” or above on the NAEP rose from 15 percent in 1990 to 36 percent in 2013. Between 1990
NCTM Message to Leaders and Policy Makers (Including Commissioners)

- Make **ongoing professional development** that supports the implementation of the eight Mathematics Teaching Practices as a priority;
- **Allocate resources** to ensure that all students are provided with an **appropriate amount of instructional time** to maximize their learning potential;
- Eliminate the tracking of low-achieving students and instead **structure interventions that provide high-quality instruction and other classroom support**, such as math coaches and specialists;
- Understand the devastating impact of professional isolation and **create collaborative structures to maximize professional growth**;
- **Support risk taking** and **encourage new approaches** that advance student learning.
Next Generation Accountability

A System to Support Schools and Empower Students
• A QuESTTT is: Accountability for a Quality Education System, Today and Tomorrow
  ▪ A Framework for a quality education system
  ▪ An opportunity to address “accountability” based on Nebraska’s needs
• “Next Generation Accountability” means:
  – Beyond Assessment and Student Performance as sole measures
  – Focusing on investments that we know matter in student success
  – Establishing a “Theory of Action” rather than a measure in isolation
  – Building a system of supports to help schools and not just point fingers
  – Measuring and including growth and improvement rather than simply status
  – Working together to support/improve the whole system
The Six Tenets of A QuESTT

The framework is designed around the following six tenets:
The State Board of Education believes that every student upon completion of their secondary education shall be prepared for postsecondary educational opportunities and to pursue their career goals.

**Areas of Focus**
- Rigorous College & Career Ready Standards for All Content Areas
- Technological & Digital Readiness
- Support for Career Awareness and Career/College Goals
The State Board believes the results of multiple assessment sources (national, state, and classroom-based) should be used to measure student achievement of college and career ready standards, and be used as an integral part of the instructional process.

**Areas of Focus**
- Individualized/Adaptive
- Classroom Based
- State
- National/International
The State Board believes that students should be surrounded by effective educators throughout their learning experiences such that schools and districts develop effective teachers and leaders that establish a culture of success.

**Areas of Focus**
- Nebraska Teacher & Principal Performance Framework
- Professional Development
- Building Leadership Supports
- Effective Local Policy Makers & Superintendents
The State Board believes that student engagement through positive partnerships and relationships are fundamental to successful schools and districts. The State Board seeks to support schools and districts to implement best practices in student, parent/guardian and community engagement to enhance educational experiences and opportunities.

**Areas of Focus**
- Individualized or Personalized Learning Plans
- Attendance and Participation
- Parent/Guardian Involvement
- Community and support services
The State Board believes that quality educational opportunities focus on supports for students transitioning between grade levels, programs, schools, districts and ultimately college and careers.

**Areas of Focus**
- Early Childhood-Elementary
- Elementary-Middle School
- Middle School-High School
- High School-Post High School
The State Board believes that all students should have access to comprehensive instructional opportunities to be prepared for postsecondary education and career goals.

**Areas of Focus**
- Early Childhood
- Comprehensive Learning Opportunities
- Extended Learning Opportunities
- Blended Learning / Opportunities for credit bearing distance/virtual content