# Designing and Supporting Teacher Learning

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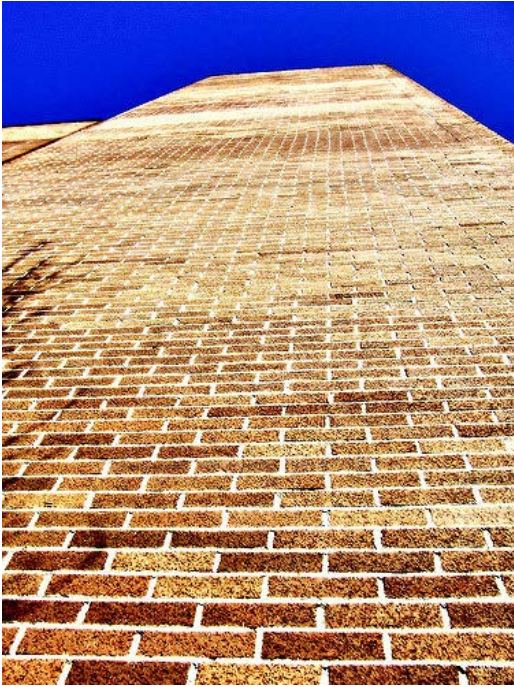Jenny Sagrillo, UW-Milwaukee (sagrillo@uwm.edu)

# Best Practices in Professional Learning

"In an excellent mathematics program, educators hold themselves and their colleagues accountable for the mathematical success of every student and for personal and collective professional growth toward effective teaching and learning of mathematics."

*Principles to Actions, p. 99*

# Best Practices in Professional Learning

"The current structure of professional development often stands as an obstacle to the development of a culture of professionalism. Teachers frequently feel as though professional development is something done to them, instead of something done for them, involving them as active partners in their own professional growth"

*Principles to Actions*, p. 101

# Learning Forward Standards for Professional Learning



## STANDARDS FOR PROFESSIONAL LEARNING

*Professional learning that increases educator effectiveness and results for all students ...*

**LEARNING COMMUNITIES:** Professional learning that increases educator effectiveness and results for all students occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.

**LEADERSHIP:** Professional learning that increases educator effectiveness and results for all students requires skillful leaders who develop capacity, advocate, and create support systems for professional learning.

**RESOURCES:** Professional learning that increases educator effectiveness and results for all students requires prioritizing, monitoring, and coordinating resources for educator learning.

**DATA:** Professional learning that increases educator effectiveness and results for all students uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.

**LEARNING DESIGNS:** Professional learning that increases educator effectiveness and results for all students integrates theories, research, and models of human learning to achieve its intended outcomes.

**IMPLEMENTATION:** Professional learning that increases educator effectiveness and results for all students applies research on change and sustains support for implementation of professional learning for long-term change.

**OUTCOMES:** Professional learning that increases educator effectiveness and results for all students aligns its outcomes with educator performance and student curriculum standards.

# Best Practices in Professional Learning

"Effective professional development programs promote the growth of mathematics teachers in four major areas:

- Teachers' mathematical knowledge and their capacity to use it in practice
- Teachers' capacity to notice, analyze, and respond to students' thinking
- Teachers' beliefs and dispositions that foster their continued learning
- Teachers' collegial relationships and learning structures that can support and sustain teacher learning"

*Principles to Actions*, p101
(See Doerr, Goldsmith, and Lewis (2010) for additional details)

# Best Practices in Professional Learning

Additional features of high quality professional development and programs that support these goals:

- Substantial time investment over a sustained period
- Systemic support for teachers' learning
- Opportunities for teachers to participate in active learning
- Opportunities for teachers to study the mathematics underlying the curriculum that they teach

  *Principles to Actions*, p. 101-2

# AMTE Standards for Preparing Teachers of Mathematics

ASSUMPTION 1 Ensuring the success of every learner demands a deep, integrated focus on equity in every program that prepares teachers of mathematics.

ASSUMPTION 2 Teaching mathematics effectively requires career-long learning about teaching mathematics.

ASSUMPTION 3 Learning to teach mathematics requires a central focus on mathematics.

ASSUMPTION 4 Multiple stakeholders should be responsible for and invested in preparing teachers of mathematics.

ASSUMPTION 5 Those involved in mathematics teacher preparation must be committed to improving their effectiveness in preparing future mathematics teachers.

# Professional Learning in KUSD - Taking Action

- 3 day face-to-face professional learning focused on Effective Mathematics Teaching Practices

- Three cohorts:
  - 5th & 6th grade teachers
  - 8th & HS Algebra 1 teachers
  - 7th grade and SPED/ELL teachers

- Administrators & Instructional Coaches

- Culminating ½ day Learning Labs

# **Structure of Face-to-Face PD**



- Doing Mathematics

- Watching classroom video

- Look-fors and Ask-mes

- Taking Action "homework" between sessions

# Peer Learning Labs

- Volunteer Host
- 3-5 participants per lab
- External facilitator
- On Lab Day
  - 1 hr "Pre-brief" with host and participants
  - 1 hr classroom observation
  - 1 hr debrief

Some things we want you to remember as a peer learning lab host are:
- Hosts aren't experts, they are learners trying to apply strategies and skills with the support of and feedback from their colleagues
- The host classroom observation creates a shared experience from which all participants can learn and reflect
- We are not observing for the purpose of "learning from the master." We are observing to expand our thinking, generate questions, and develop a view of what the instructional practice looks like in our schools
- Peer learning labs are authentic. *Everything shouldn't be picture perfect because we are trying something new.* Significant learning comes from the dialogue about the challenges that were experienced.

# Debriefing the Learning Lab

- **Round One:** Student Evidence

  What specific evidence can you provide to the teacher regarding the focus question and look fors? Start with stems, "I heard…," "I saw…," or "I noticed…"

- **Round Two:** Implications

  What are the broader implications of what you observed? What does this mean for your own teaching and learning? Start with stem, "Because…., then…"

- **Round Three:** Wonders and Response from the Host

  What questions do you have as it relates to what you observed? What new thinking do you have? Use the stem, "I wonder…."

  *The host teacher responds by thinking aloud about what was shared during the first three rounds. How has the host's thinking changed? What is a future goal for instruction? How will student learning be assessed?

- **Round Four:** Next Steps for Instruction

  Each participant shares a next step for their instruction that evolved from the observation.

  *The host teacher silently takes notes on first three rounds while participants engage in dialogue.

# Milwaukee Master Teacher Partnership

- Five-year NSF-funded professional development project (Noyce Track 3)
- 24 experienced high school teachers in Milwaukee Public Schools
  - 16 science, 7 math, 1 computer science
  - All teachers have masters degrees
  - Facilitation team: 4 UWM faculty, 1 UWM assistant, 3 MPS coaches/specialists
  - Collaboration with UWM Letters & Sciences faculty
- Meet as a whole group six times per schoolyear and as needed for small groups
- Based on "microcredentialling"

# What are microcredentials?

- "a representation of an accomplishment, interest or affiliation that is visual, available online, and contains… links that help explain the context, meaning, process and result of an activity" (Gibson, Ostashewski, Flintoff, Grant & Knight, 2013, p. 2).
- Smaller, shorter-term opportunities for teachers to learn about a topic and demonstrate competency with that topic
- Teachers are able choose areas of interest or need and work with a small group to complete their learning
- Teachers use action research to implement what they've learned in the classroom and examine the impact on student learning

# Our Microcredentials

- Action research based
- Three focus areas
  - Math/science content
  - Math/science pedagogy
  - Leadership
- Incorporate student learning and student voice
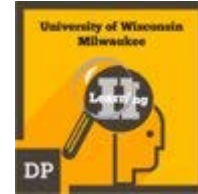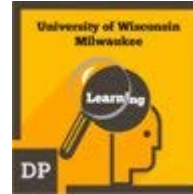
# Our Microcredentials: Year 1

Foundational work:

- Action Research 1 & 2

Content Focused

- NGSS & CCSSM in Action
- Models and Modeling (part 1)

# Our Microcredentials: Year 2
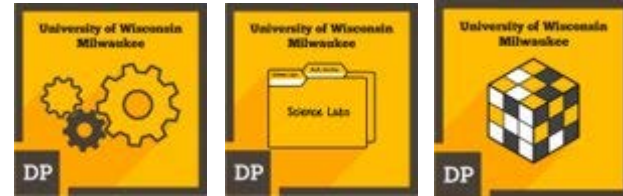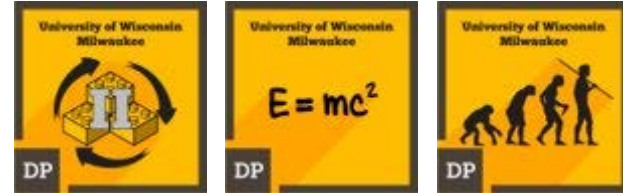
Content Focused

- Models and Modeling (part 2)
- Matter and Energy in NGSS and Evolution in NGSS

Pedagogy Focused

- Student Engagement and Motivation
- Developing Conceptual Understanding through Task Selection
- Supporting Productive Struggle
- Questioning and Discourse

Leadership

- Designing & Supporting Teacher Learning 1 & 2
- Curriculum Design 1 & 2

# Our Microcredentials: Years 3-5

- Continue to focus on content, pedagogy, and leadership

- Teachers will have the opportunity to propose and write their own microcredentials for the rest of the group

- Continue to develop teachers' leadership capacity to fulfill an existing need for school-based content leaders in MPS

- Continue to develop partnerships with content area specialists from UWM and other local universities

# MMTP Showcase Invitation

- For an example of two teachers' work please attend the session on Improving Student Engagement and Motivation through Practices of Assessment with Joan Masek, Erin McReynolds, and Mary Zietlow at 11:30 am (Kern-Boehr)

- All of our teachers will each be presenting one of their four projects from this year

  - Saturday, May 19, 10 am - 12 pm

  - UWM Northwest Quadrant, room 1871

# Taking Action

- Provide appropriate and ongoing opportunities for professional growth and development for teachers, including coaching and collaborative planning opportunities that build teacher capacity

- Allocate time for teachers to collaborate

- Maintain a culture of continual improvement, learning, and collaboration

- Support the staffing of mathematics coaches, specialists, instructional leaders

# Taking Action

- Support sustained professional development that engages teachers in continual growth of their mathematical knowledge for teaching, pedagogical content knowledge, and knowledge of students as learners of mathematics

- Empower teachers as agents of their own learning

- Promote "non-traditional" forms of professional learning (e.g. Math Teacher Circles, Twitter Chats & #MTBoS, EdCamps)