The New Professionalism: Empowering Teachers as Researchers, Accomplices, and Agitators

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Agenda

• Key aspects of professionalism (drawing on Principles to Actions)
• Supporting teachers as:
  • Accomplices
  • Researchers
  • Agitators
• Next steps
Key points from *Principles to Actions*

• Teaching requires career-long professional growth
• Collaboration and the establishment of shared beliefs and values are important
• Teachers and districts must work to combat professional isolation
• Administrative buy-in is important to long-term success
Turn and talk...

• What is one aspect of professionalism that is working well in your school or district?
• What is one aspect that you feel would be most important to change?
### Key ideas from the research

<table>
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<tr>
<th>Teacher growth areas in effective professional development</th>
<th>Features of high-quality professional development</th>
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<tr>
<td>Mathematical knowledge for teaching</td>
<td>Substantial time investment</td>
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<tr>
<td>Capacity to notice, analyze, &amp; respond to student thinking</td>
<td>Systemic support for teacher learning</td>
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<tr>
<td>Beliefs and dispositions related to continued learning</td>
<td>Participation in active learning</td>
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<td>Collegial relationships and learning structures</td>
<td>Focus on the math underlying the curriculum</td>
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Supporting teachers

• …as accomplices for one another in enacting high-quality research-based instruction
• …as researchers in their own classroom who learn from the data generated every day
• …as agitators that will take meaningful steps to disturb outdated and unhelpful structures and processes
Supporting Teachers as Accomplices

Finding your tribe
Finding collaborators

In the dark ages:
• In your building (if they were like-minded and willing)
• Through a graduate program (if there was a good one locally)
• Through NCTM (passive reading or occasional conference attendance)
Finding collaborators

Structured opportunities
• Graduate programs (in-person and online)
• Professional development projects
• Smaller-scale learning (microcredentialing)
The Milwaukee Master Teacher Partnership

• Five-Year Noyce Track 3 project
• 24 high school math and science teachers in Milwaukee Public Schools
• Four action research-based microcredentials “badges” per year
• Anticipating change in:
  • Teacher capacity for action research
  • Instructional practices related to focus of microcredentials
  • Quality of instructional practice overall

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Finding collaborators

In-building opportunities
• Finding like-minded teams with which to collaborate
• Vertical teaming
• Being brave and leading change

Online opportunities
• #MTBoS
• My NCTM
• Direct online interactions
Collaboration examples in #mtbos

Consider the following:

• How does #mtbos help solicit a variety of perspectives?

• How does #mtbos curate and ensure that the feedback/content you receive is of good quality?

• How do you ensure that you get a response?

So volume of a cone. We poured water from cone to cylinder, pyramid to cube, etc etc. we’re good w 1/3 x the vol of the other. Kids desperately want to know why it’s 1/3, not half (beyond just the experimentation). Anyone got something for me? #mtbos
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http://www.fishing4tech.com/mtbos.html
Call to Action

• Share the load
  Don’t reinvent the wheel; plan lessons and units collaboratively

• Leave a trace
  Share and disseminate planning artifacts and invite feedback and further refinement

• Be a proud (and thoughtful) peacock
  Seek out colleagues to share your successes and student work with, and go in depth with that discussion
Supporting Teachers as Researchers

Analyzing your practice
Teachers as researchers

• Classrooms are incredible laboratories for learning
• Ask structured questions about your practice and collect data on student learning
  • This has to go beyond test scores!
  • Make use of audio and video records of discourse
• Use existing tools to analyze your data
  • Questioning categories in Principles to Actions
  • Short transcripts analyzing teacher and student talk
MMTP Theoretical underpinnings

- Practice-based teacher development
  - Action research as a means to develop content and pedagogical knowledge
  - Research-practice-research cycle
- Ensuring teacher voice
  - Choices in areas of inquiry (Years 2-5)
- Development of teacher leaders
  - Position teachers as professional developers within district
  - Develop next-generation district curriculum leaders
The Influence of Feedback and Formative Assessment on Student Engagement and Motivation

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Milwaukee, WI 53220

BIG ISSUE
Does student engagement and motivation improve when a combination of formative assessment strategies and student discourse methods are introduced?

LITERATURE REVIEW HIGHLIGHTS
Formative assessment strategies affect student engagement and motivation.
• Improving formative assessment raises standards.
• Scaffolding promotes autonomy, self-regulation, and ownership.
• Assessment for learning rather than grades.

RESEARCH QUESTION
• Can a change from traditional methods of assessment impact student engagement and motivation?
• Can the consistent use of varied strategies of formative assessment provide both teachers and students with information about student understanding?
• What are the effects of peer assessment and self-assessment strategies on student engagement and motivation in a 9th grade algebra class?

METHOD
• Administer the MSLQ to assess the motivational orientation of my students.
• Introduce Restorative Circles to build classroom culture.
• Talk about community and autonomy.
• Identify formative assessment strategies:
  • Student self-assessment form
  • Stop light discs
  • Thumbs up/down
  • Think – pair – share
  • Partners
  • Exit tickets
• Implement assessment strategies and analyze results.

RESULT SUMMARY
The action research project is ongoing.

NEXT STEPS
• Expand use of content standards in formative assessments
• Continue to collect and analyze data from the self-assessment form to explore the connection between motivation and learning of content.
• Increase the use of restorative circles for community building and student learning.
• Introduce another formative assessment strategy — the use of CABS and written feedback.

REFERENCES
How many papers?

At Mass this am one T was recognized and P said “can you imagine the number of papers she’s corrected?” Went on to call me a math ninja who could figure it out. So what’s a math ninja to do? Naturally, give it to my @Estimation180 wiz kids and get to work...#mtbos
How many papers?
How many papers?
How many papers?

\[ \text{9 papers/day} \times 32 \text{ days} = 288 \text{ papers/day} \]
\[ \text{150 days/year} \times \text{Fridays/year} = 150 \text{ days/year} \]
\[ 150 \times 288 = 44,928 \text{ papers/yr} \]
\[ \frac{44,928 \text{ papers/yr}}{1 \text{ yr}} \times 30 \text{ yrs} = 1,347,840 \text{ papers} \]
\[ 285,120 \]
...but what did that have to do with research?
Call to Action

• Develop systems to collect data
  Lesson plans, pictures of student work, video and audio records

• Annotate and analyze
  Time spent looking at student thinking will save time in planning down the road

• Get up here
  Give a talk at an NCTM conference (state, regional, national)
  People will care about the work you’re doing with kids
Supporting Teachers as Agitators

Do not just accept the way things are
Hard truths

• Mathematics teaching and learning is far from equitable for each and every student
• Our systems of management rest on outdated and discriminatory structures rooted in behaviorist and segregationist stances
• Teaching as a profession is being vilified in public spaces
• Nobody is going to fight for us if we do not fight for ourselves
Collecting Data

Simple, straightforward data collection and analysis can be a huge asset

• Holt (MI) High School was concerned about an administrative push to focus on ACT preparation at high school
• The teaching staff believed their current assessment practices were authentically measuring student learning
• They did not believe in the ACT as a tool for measuring conceptual understanding
Collecting Data

$r^2 = 0.3$

Other steps to take

• Convincing other adults in the building
• Sharing and discussing current research in mathematics education
• Proactively messaging to parents and community members

Casey’s Context
Stage 1: Honoring Work

I wanted to tell you that I am very proud of the work you are doing and your positive, joyous love for your work and students.
Stage 2: Airing Grievances

It has been frustrating over the years to feel like there’s an ever changing plan at the Diocesan level, so we have tried to do what’s best for our students at our school site. We also have a wonderful cluster group, although a few of them are very resistant to change.
Stage 3: Identifying What’s Possible

I want to share how much I have learned in following you and many from the #mtbos group.

Despite teaching for so long, I am proud to believe that I can always improve and learn. I really try to meet the needs of all of my students and I have been excited to implement so many things since we crossed paths. (Desmos, would you rather, which one doesn’t belong, folded paper click ball ornaments, and fractal Christmas trees, just to name a few.)
I want to support you in your meetings this week. In fact, I had been thinking about contacting XXXXXXX to suggest that your knowledge and approaches would be awesome PD before I even read your blog post.
Stage 5: Affirming Solidarity

I want to encourage you to be true to who you are and know that I am a better teacher because of all of the resources and people that I have come across since the conference where we met.
Five Stages of Recruiting Agitators

1. Honoring Work
2. Airing Grievances
3. Identifying What's Possible
4. Organizing Action
5. Affirming Solidarity
Call to Action

• Get the facts
  Analyze data related to assessments, tracking practices, and student achievement across the district

• Cause a problem
  Initiate conversations that challenge beliefs and dispositions based on research and open up hard conversations

• Evangelize
  Don’t wait for parent or community complaints; engage them in dialogue about what you’re going to do and why

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Questions and discussion
We are here to help!

@mdsteele47 • @cmmteach • and the whole #MTBoS