The MAA IP Guide in the Context of Partner Organizations and Departmental Initiatives

Liz Arnold & Beth Burroughs
Montana State University

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Aspirational Intention of the Guide

• What can mathematicians do to address inequity?
Aspirational Intention of the Guide

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• Focus on our teaching
  – Use what is known about ambitious teaching practice
  – Resist the urge to rely on habits
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• Focus on our teaching
  – Use what is known about ambitious teaching practice
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• CBMS statement on active learning
Challenge

• It is hard to change practice that is embedded in culture.
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  - Mathematicians don’t shy away from what is hard
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• View of mathematics as accessible to all
Challenge

• It is hard to change practice that is embedded in culture.
  – Mathematicians don’t shy away from what is hard

• View of mathematics as accessible to all
  – Hard when our own identity has been formed in a culture of mathematics-as-identifier-of-exclusive
Context

• Conference Board of the Mathematical Sciences (CBMS) statement on active learning
Context

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• MAA’s Committee on the Undergraduate Program in Mathematics (CUPM) Curriculum Guide to Majors in the Mathematical Sciences
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• MAA’s Committee on the Undergraduate Program in Mathematics (CUPM) Curriculum Guide to Majors in the Mathematical Sciences
• ASA’s Guidelines for Assessment and Instruction in Statistics Education (GAISE) Framework
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• MAA’s Committee on the Undergraduate Program in Mathematics (CUPM) Curriculum Guide to Majors in the Mathematical Sciences
• ASA’s Guidelines for Assessment and Instruction in Statistics Education (GAISE) Framework
• National Council of Teachers of Mathematics (NCTM) *Principles to Action*
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• MAA’s Committee on the Undergraduate Program in Mathematics (CUPM) Curriculum Guide to Majors in the Mathematical Sciences
• ASA’s Guidelines for Assessment and Instruction in Statistics Education (GAISE) Framework
• National Council of Teachers of Mathematics (NCTM) Principles to Action
• Association of Mathematics Teacher Educators (AMTE) Standards for Preparing Teachers of Mathematics
Questions We Asked During Review

• Is the guide written in such a way that the typical user will find it readable and informative?

• Is it accessible and usable?
DEPARTMENTAL INITIATIVES

• Excellence in Teaching Symposium
• IP Book Club
Context

• Dept. of Mathematical Sciences

• ~60 Faculty and Teaching Faculty

• ~60 GTAs
  – 20 new GTAs in 2017-2018 AY
  – Sole instructors of courses

• Course Supervisors and Student Success Coordinators
Excellence in Teaching Symposium

• For GTAs
  – Week-long Orientation Training Session (pre-Fall)
    • Prepare for teaching responsibilities
  – Weekly Teaching Seminars and Workshops (Fall)
    • Teaching methods, strategies, and tools
  – Monthly Teaching Seminars and Workshops (Spring)
    • Advanced topics

• Leadership Team
  – Dr. Jenny Green
  – Elijah Meyer
Excellence in Teaching Symposium

- IP Guide Influence
  - Refined previous seminars and designed new ones
    - Vignettes, practical tips, and research were very useful
  - Primarily used the *Classroom Practices* chapter
    - *Fostering Student Engagement*
  - Dabbled in the *Assessment Practices* chapter
    - *Formative Assessment Strategies*
Excellence in Teaching Symposium

• **Building a Classroom Community**
  • Included references and provided articles – “connections between student success and student engagement”
  • Establishing norms on the first day of class
    – vignettes (videos) and discussion
  • Extends over multiple workshops
Excellence in Teaching Symposium

• **Collaborative Learning Strategies**
  - Group work has a large role in our courses
  
  • Facilitating group work is challenging
    - Grouping students
    - Using the whiteboards
    - Strategies to get all students involved (e.g., think-pair-share, paired board work)
    - What they should be doing as students work in groups

• Provided strategies and practical tips
Excellence in Teaching Symposium

• **Responding to Student Contributions**
  • How do you listen and respond to students questions in the
    – **classroom?**
      » Vignettes (discourse transcripts)
      » Focus: response strategies and how they open or close a discussion with a student
    – **office?**
      » Vignettes (live role play in small groups)
      » Focus: grading, group work, non verbal and verbal cues
Excellence in Teaching Symposium

- What worked well?
  - Providing research-based evidence \( \rightarrow \) Trust

**Past GTA Mindset**

“These kinds of teaching / ice breaking / positivity workshops are not useful for making good teachers.”

**Current GTA Mindset**

“I would say I’ve learned quite a bit about what it means to be an effective teacher. I didn’t know so much research had been done.”
Excellence in Teaching Symposium

• What worked well?
  • Evolving conceptualizations of active learning

<table>
<thead>
<tr>
<th>GTAs’ Pre-Symposium Thoughts</th>
</tr>
</thead>
<tbody>
<tr>
<td>“This is where someone engages in an activity.”</td>
</tr>
<tr>
<td>“I’m not sure.”</td>
</tr>
<tr>
<td>“Engagement with the material, which leads me to believe that this is a student choice rather than something the instructor can mandate.”</td>
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<tr>
<td>“Active learning is learning through guided activities.”</td>
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</tbody>
</table>
Excellence in Teaching Symposium

- What worked well?
  - Evolving conceptualizations of active learning.

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<th>GTAs’ Current Thoughts</th>
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<td>“I assumed it had to do with physically engaging students in a lecture but I have learnt that it involves the process of actively engaging the mind.”</td>
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<tr>
<td>“It encompasses a lot more than I thought; e.g. I thought it implied working with other students, by definition.”</td>
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<tr>
<td>“It does not have to be doing activities.”</td>
</tr>
<tr>
<td>“To me, it’s student engagement.”</td>
</tr>
</tbody>
</table>
IP Book Club

• Spring 2018 Semester
  – Open to all members of the department
  – Meet monthly
  – Read a section of the IP guide
  – Implement strategies
  – Group discussions
Concluding Thoughts

• IP Guide is useful for improving teaching
  – Provides a variety of strategies to use and practical tips to consider

  – Can adapt ideas/discussion prompts from the IP Guide to align with your audience (e.g., vignettes/transcripts/videos)

  – Encourages instructors to think about their teaching
Thank You

Questions?
References


