

# Teaching and Learning STEM Online: *Highlights & Hurdles*

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John Beyers, Ph.D.





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# My Family



# Brief Introduction...

Serving the needs of over 200 faculty and 20,000 students globally in Mathematics & Statistics Division (70% Online)

Managing growth and scale of Mathematics & Statistics Department (+93% Growth Spring 2019 to Spring 2020)

New program development

Curriculum & Assessment planning

Faculty Engagement

Evaluation of programs and faculty

# STEM @ MC



Mathematics



Statistics



Data Science



Computer Science



Biological Sciences



Chemistry



Engineering

Teaching and Learning STEM  
Online @ MC: *Highlights*

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# Teaching and Learning STEM @ MC: *Highlights*

Strong Leadership

Resilient Faculty & Students

Corona Advisory Team, Emergency Remote Teaching, Continuation of Instruction Plan

Achieving the Promise Academy (Providing Remote Services)

MC Initiatives (4-5 years): Launching Online Degrees, OERs, Online Extended Winter Sessions

MC Infrastructure: Learning Center (2009), LMS Updated, Bb Collaborate, Zoom Video Conferencing

MC Elite: Centralized Distance Education, Instructional Technology, Faculty Professional Development



Teaching and Learning STEM  
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# Teaching & Learning STEM @ MC: *Hurdles*

Accelerated Timeline

Faculty Development

Program / Course Core Development

Synchronous vs Asynchronous

Academic Integrity

Student Orientation

Communication Plan (College)

Communicating Online (Course)

Resources & Capacity (Scaling)

Teaching and Learning STEM  
Online: *Lessons Learned*

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# Teaching and Learning STEM Online: *Questions & Lesson Learned*

**Question 1:** What is the problem that we're trying to solve?

**Question 2:** How is face-to-face pedagogy different from online pedagogy? Best practices?

**Question 3:** What does faculty professional development look like? (Training A, Training B, and Training C). Could there be one faculty PD?

**Question 4:** What do model classrooms look like? (What is common; what is unique?)

**Question 5:** What resources can be integrated into an online classroom to support *faculty*? (Institution- and Department-wide)

**Question 6:** What resources can be integrated in an online classroom to support *students*? (Institution- and Department-wide)

# Teaching and Learning STEM Online: *Questions & Lesson Learned*

Paradigm shift: F2F → Online (Accelerated Timeline)

Good teaching is good teaching... Engagement, Timely Communication & Feedback, Discussions, Problem Solving, Critical Thinking, Effective Communication

Faculty Professional Development:

Training, Discipline Specific Mentorship, & Shadowing

Creating Model Classrooms (analogous to adopting a common text): Faculty Committee, Author, Peer Reviewer, Instructional Designer, UI, Programmer\*

Faculty Resources: LMS, Collaborate, Zoom, Quizzing Tool, OERs, eTexts, PPTs, Video Libraries, Technology (free)

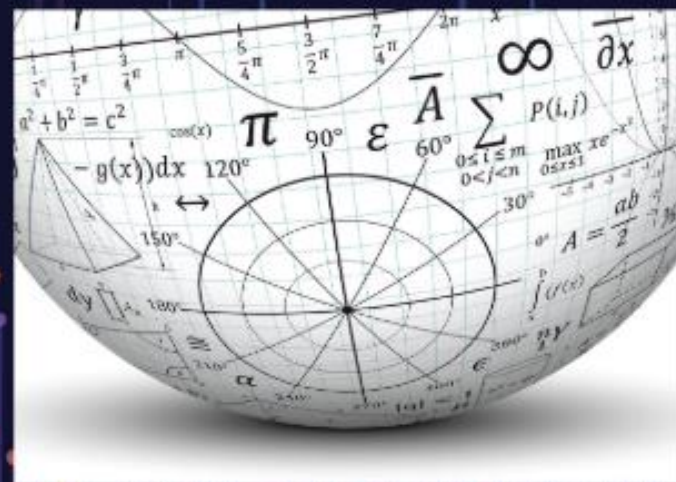
Student Resources: Instructor, LMS, Course Resources, eTutoring, OERs, Video Libraries, Technology (free)

Thank you...

[jbeyersphd@gmail.com](mailto:jbeyersphd@gmail.com)

TLMO

# Teaching and Learning Mathematics Online



Edited by  
James P. Howard, II  
John F. Beyers

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