Leading Curricular Change: A Case Study in Re-envisioning the Calculus Sequence

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A Framework for Leading Change

John P. Kotter is the Konosuke Matsushita Professor of Leadership, Emeritus, at Harvard Business School and is cofounder of Kotter International.
Stage 1: Establishing Urgency

Constructive Restlessness – “Wilson’s Principle”

“If how we are teaching MAT XXX is perfect, then we are justified in preserving the status quo. If not, then we are compelled to think and reflect – to envision ways in which what we do might be better. And, when we find some idea, to thoughtfully act. – John Wilson, Centre College
Stage 1: Establishing Urgency

THE STATUS QUO IS UNACCEPTABLE!!!

- Update curricula
- Articulate clear pathways
- Scale up use of evidence-based pedagogical methods
- Remove barriers facing students at critical transition points and encourage persistence
- Establish stronger connections with other disciplines
Stage 1: Establishing Urgency

PERCENT OF U.S. BACHELOR’S DEGREES IN MATH/STATISTICS EARNED BY MEMBERS OF CERTAIN UNDERREPRESENTED GROUPS

- Women
- LatinX
- Af-Am
Stage 2: Create a Guiding Coalition

The math faculty of Southwestern University and Centre College

Chad Topaz
Williams College
Stage 3: Develop a Vision and Strategy

Keeping in mind why we need to change:

- Constructive Restlessness
- Shifting toward “student-ready” courses
- The students in our classroom have changed
- We, the instructors, have changed
Stage 3: Develop a Vision and Strategy

Five of our guiding principles:

- Organize every course in a way that engages all students and promotes educational equity.
- Make every course a good entry point into the calculus sequence, based on student background.
- Make every courses a good exit point from the calculus sequence, based on student interest.
- Make sure there is a smooth increase in difficulty across the three courses in the sequence.
- Intentionally layers some concepts and applications throughout the sequence.
Thanks!!

Questions?

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