



Facilitating Curriculum Change One Step At a Time

Joanna Mott
James Madison University

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Experience

- Current
 - Institution – comprehensive PUI
 - Department 52 faculty, ~1000 majors (plus ~1/3 course offerings support for pre-health and pre-nursing)
 - B.S./B.A. Biology, M.S. Biology
- External reviewer
- Previous
 - Institution – emerging research
 - Department - ~24 faculty, ~ 1000 majors
 - New B.S., M.S., Ph.D. degrees

Overview

- Introduction
- Challenges/barriers
- Steps
- Unanticipated challenges
- Lessons learned

Introduction

- Change – critical leadership role for department chair
- Need clear vision
- Challenging in a higher education setting
- Culture of institution, department
- Curriculum change unit head role – facilitator, faculty - leaders
- Accept the long term nature of implementation – careful, intentional steps needed to achieve goal

- **FACULTY BUY-IN**

Unit Head motivation/rationale for curriculum change

- Pressure from the administration
- Knowledge of national trends
- Department reputation, resource priorities
- Student experiences and preparation
- Retention and student success
- Admissions, reputation - issue with transfer students

Faculty motivation for change

- Improve **student** experience
- Enhance **student** learning
- Increase **student** retention
- Become national leaders in undergraduate education – scholarship opportunities

- Provide modern biology curriculum
- First year curriculum to align with 2 and 4 year colleges to facilitate effective transfer

Initial challenges 'barriers' ?

- Need for faculty to develop a unified approach and common vision
- Resources – incentives for faculty engagement
 - Faculty and staff time – can the department afford it ?
 - Stipends for summer ?
- Fear – entrenched faculty
- Resistance to change
 - Ownership – curriculum, courses
- Lack of information, awareness of current best practices
- Logistics of implementation (especially for large programs)



Think, pair, share

- Challenges and barriers in your department/institution

Foundations – priming the pump 2011

- College support/facilitation
 - External team for program review included leaders in V&C
 - New department head
 - Building designed for student-centered learning
- Strategic planning
 - Department retreats – mission, vision....
 - Department head vision and end goals
- Active encouragement of individual faculty course re-design initiatives/interest

Unit head: setting the stage 2012-13

- Gather information - meetings (AAC&U V&C 2013), local/regional needs
- Sow seeds in conversations – gauge faculty buy-in, issues to address
- Start to identify potential key players and assemble core group
- Alleviate fears – small steps, acknowledge faculty lead curriculum change
- Be able to articulate rationale for change in faculty terms



Faculty

- Identify, promote, incentivize and support internal and external opportunities to engage, learn
 - Internal courses, Jmudesign, assessment fellow
 - Find external workshops/conferences (backward design workshops, SERP, summer 2014)
 - Faculty who attend bring back positive energy, new ideas for the department
 - Use participants as models
- Critical opportunity for faculty not fully committed to change to get involved

Before moving forward...assess readiness

- Is timing right ?
- Is there enough faculty buy-in ?
- Can other initiatives be deferred ?
- Can resources be garnered to support the group spending the time and effort involved ?

***Identify a 'leader' in the faculty

- Sometimes referred to as a 'change agent', to spearhead the re-design
- Respected by the faculty, non-controversial, balanced outlook
- Removed from the curriculum area of re-design if possible
- Willing to take risks, guide and sometimes more assertive
- Skills to move process forward, mobilize faculty
- Knowledgeable in curriculum design – external experiences

- Empower the person – demonstrate your support of his/her efforts
- Meet regularly with the person and help guide throughout

Exploratory committee – core group

- Composition is critical – broad membership from across the curriculum
- External and internal scan –
 - Collect data re other schools, national scene, current curriculum, best practices
 - Internal broad assessment of current curricula compared with national models
 - Curriculum mapping to identify overlap and missing critical skills
- Integration of individual initiatives to create a unified vision for the re-design
- For us this took a full fall semester(2014)

***Full faculty report-out (Dec 2014)

- Led by leader and exploratory committee:
 - Share summary of data findings and identify re-design needs
 - Clearly articulate rationale for change in curriculum
- CRITICAL STEP FOR FACULTY BUY-IN
- RISK STEP:
- Vote for re-design – needed for buy-in and to proceed but has to be carefully presented



Unit head role

- Maintain the culture of faculty-led curriculum
- Listen to concerns of individuals during the process
- Appreciate past efforts (and voice this) in developing curriculum
- Generate buy-in and find different ways in which faculty can participate based on their strengths and interests.

Faculty articulated: priorities and vision

- Increase course-embedded research activities, both introductory and upper level
- Implement metacognition in first year and core experiences
- Vision
Student-centered, engaged faculty with a research-embedded curriculum based on core competencies and metacognition

Low-hanging fruit



- Opportunities presented by timing - hire of professional academic advisor
 - New freshman advising seminar developed 2015, taught fall 2015, 2016
Integrated metacognition, career planning, strategies for success in the major
 - New transfer student orientation

Next steps (2015)

- Decision to focus first on first year experience
- Form working groups – full faculty solicited for volunteers
- Groups worked through spring semester and summer
- Regular open meetings for faculty at which updates on progress provided, summer live streaming of meeting for faculty not on campus
- Full faculty retreat Aug 2015 – all teams presented and solicited feedback (Half day dedicated for this)



Next steps - unit head role

- Regularly meet with faculty leader –
 - For support - morale, venting, guidance on issues
 - Updates on progress to ensure staying on track and moving forward
 - Timeline and outcomes expected (can relate to stipends)
 - Show interest and support but not interference (faculty leadership)
- Open door for faculty with concerns, questions



Next steps

- Identify resources – summer stipends, release time
- Ensure transparency – assist in scheduling open, well advertised faculty meetings for updates, questions
- Recognition of/reward for those involved

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Implementation (2015-16)

- Course proposals developed and submitted for approval (fall 2015)
- First Year courses rollout
 - Spring 2016 pilot lab for first course taught
 - Fall 2016 full implementation of first course with lab - 576 enrollment in 5 lecture sections, 24 sections of labs
 - Concurrent pilot of second course lab
 - Spring 2017 both courses taught – total 35 lab sections,

Unit head role - implementation

- Facilitate logistics:
 - Course approvals through faculty C&I committee – open – head to be present for support
 - Course budgets examined/adjusted for new labs
 - Effects on other programs across campus communicated i.e. pre-requisite course number changes, pre-professional advising etc.
- Sequencing issues – roll out timing
- Transitioning from old courses to new – graduation requirements etc.

Overarching

- Transparency
- Respect for all
- Inclusiveness
- Empowerment of the faculty leaders (guide and support throughout as needed)

Plan vs reality



- Overly ambitious plans
- Over-expectations of faculty willingness to change
 - Introspective - unwilling to travel to other sites
 - Lack of motivation to apply for external grants, workshops, REU community college
- Timeline – unit head to keep on track through update reports
- Compromise – first step: focus on first year experience
 - Less individual ownership



Unanticipated ? issues and challenges

- Faculty not involved had misconceptions and raised roadblocks despite multiple open meetings
- Dominant faculty effect on groups
- Extent of repercussions on other programs, pre-requisites, student advising and work involved to disseminate information across campus
- Logistics in transition with new sequence, course numbers etc.
- Second year course repercussions – more ownership and less willingness to change content
- Scaling to large enrollments – pilot lab to 25 sections
- Change in format to student-centered learning: skills vs. knowledge concerns

Lessons learned

- Don't take your eye off the process, keep close communication with the faculty leader – very easy for de-railing to occur
- Open door policy so faculty concerns can be addressed quickly
- Have a timeline and keep to it within reason
- Critical to provide incentives – stipends/release time
- Need for ongoing support and acknowledgement of working groups at faculty meetings, retreat 'pats on the back'
- Articulate acknowledgement of efforts of previous curriculum leaders, but include reason for changes now needed
- We did not, but should have, included students in the process

Evaluation – in process

- Pre- and post- Assessment surveys of students - research experiences, curriculum and outcomes
- Continue with curriculum mapping to assess alignment with national best practice (V&C)
- Review of faculty activity re efforts – workshops, presentations, publications
- Next APR – outside perspective and feedback on re-design

Impacts on faculty and students

- Increased engagement in research
- Broader attendance and engagement in curriculum meetings
- Initial assessment on student learning in courses using student-centered practices in progress shows improvement
- Anticipated impacts: re-energized faculty engaged in curriculum, students excited about their program, experiences in authentic research, prepared for future career paths

Dissemination

- department visibility, faculty scholarship/teaching/service
 - Internal and external workshops before and during
 - **Course Redesign 2012**
 - 4-VA Biology Vision and Change conference JMU – July, 2012
 - Biology faculty, department heads, 30 institutions; CISCO Systems, VDOE
 - Secretary of Education, Deputy Secretary, Opening remarks by our Governor
 - Regional backward design workshop – 4 faculty attended and then offered locally 2014

- External presentations throughout the process –
 - SouthEast Regional PULSE Institute 2014, 2016
 - American Society for Biology (SE) presentations 2015, 2016, 2017
 - Gordon Undergraduate Biology Research Conference 2015
 - International Plant and Animal Genome conference 2017 –
 - invited presentation on lab – authentic research experience

<http://madisonscholar.tumblr.com/post/154561189370/new-class-unleashes-600-budding-researchers>



Unit head – key considerations

- Continual ‘eye’ on the initiative throughout
- Care to ‘facilitate’, be patient, not drive the process
- Faculty buy-in – how to develop and support
- Resources - \$\$ and information
- Faculty leader - trusted and with the necessary skills
- Realistic timeline



Summarize



- The foundation set the stage for implementation of a strategy...
-based on multiple incremental steps....
-to build momentum for change in the curriculum.
- This approach alleviated faculty concerns for change leading to successful initiative.