

FOEE Virtual Community of Practice (FOEE VCP) Session 7 5/16

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Today's agenda

- Focus
 - Project presentations
 - How YOU want the fall to be structured

Presentation Logistics

- Overview
 - 1 slide
 - 3 minute presentations
 - 2 minute conversation
 - Pose a question to the group about your project that you would like their feedback on
- Presentation Order
 - By projects groupings: (1) Pedagogy, (2) Desire for Shared Strategies, (3) Curriculum/Models
 - Have 8 out of 14
 - 5 minute reflection after each group
 - Common threads, things to think about as you move forward

Pedagogy

Victor*

Julie

Rani*

Stephan*^A

Building Partnerships with Skeptical Colleagues



I would like to function as an agent to help interested faculty in my department make a smooth transition to new instructional methods

Quadrants: 1, 2, 4

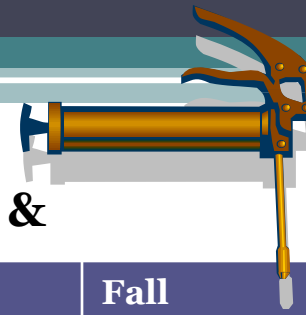
- Departmental mini-workshops, connect faculty with resources (Q1; F13)
- Establish “seed community” of innovation (Q2; F13-Sp14)
- Bring together stakeholders for dialog about our curriculum (Q4; F13-Sp14)

- Partner with TAMU Center for Teaching Excellence (Q1)
- Employ peer review of teaching (Q2)
- Engage industrial advisory board (Q4)

- Third party assessment of teaching effectiveness and impact of these practices on student learning
- Cadre of faculty that function as a grass-roots catalyst to model successful adoption of new instructional practices

Victor M. Ugaz
Texas A&M University
Chemical Engineering

Grease the Wheels



DESCRIPTION

- Creating a shared vision of active learning in the College as the norm rather than the exception.
- Start in Q1, move to Q2 with leverage from Q3, and end up in Q4.

STRATEGIES &

	Summer	Fall
Flipped 052:041	Prepare lessons	Implement course
TILE/active learning module for engineering faculty	Work with Center for Teaching to develop module	Offer module as part of Engineering Lecture series
Active learning engineering faculty support group	Identify facilitator	Start group as part of Engineering Lecture series

OVERCOMING ROADBLOCKS

- Time and learning curve:** work with SITA and flippers
- Student resistance:** prepare them (set stage) for new style of learning
- Faculty resistance:** start with small group of faculty, get outside help (facilitator), get inside help (Dean's Office)

ASSESSMENT

- ABET learning goals
- Who attended module? Who followed through with new techniques?
- How many engineering courses are using TILE classrooms?
- Does support group continue into spring?
- Are new members joining support group?

SUSTAINABILITY

- Maintain and expand support group.
- Revise and reoffer module.

Julie Jessop
University of Iowa
Chemical & Biochemical Engineering



Flipping Vibrations of Aerospace Structures

Description of Project

Develop 2-4 flipped segments for
EM 3413 Vibrations

Quadrant 1

Why? **Students need involvement, discussion and most of all ... practice.**

Strategies/Procedures

Videos (10 minutes)
Video Checks (mini-quizzes)
In-class problem sets
Concept Inventories
Formation of groups/ teams
Assessment/ feedback

Timeline: Develop modules during summer



Rani W. Sullivan
Mississippi State University
Aerospace Engineering

Potential Obstacles/Challenges

Students not watching videos (not prepared)
Increased absenteeism
Not the best learning model for some students
Reduced interactions for some
Internet access
Class physical structure

Strategies

Video checks at beginning of class

Assessment

Student feedback/ test scores/
Concept inventories scores

Plans for sustainability

Based on feedback
Develop more modules
Disseminate to colleagues

A flipping change agent at Tennessee Tech

Description:

Wider implementation of project-based learning facilitated through flipped classroom to support course content and learning goals

- Quadrant. 1-2-4 (pedagogy)

Obstacles (O) and strategies (S):

- 1O) Time commitment of faculty
- 1S) Keep meetings short and focused
- 2O) Lose participation over time
- 2S) Agenda for meetings with clear outcomes
- 3O) Demonstrations are not perfect
- 3S) group identifies improvements

Strategy:

- 1) Identify working demonstration(s) of pedagogy on campus,
- 2) form a small group of likely adopters
- 3) Track course progress during fall with short, regular meetings (2x/month),
- 4) have group serve as advisors on activity, evaluate progress and give recommendations,
- 5) Group plan next steps (Select 1-2 extensions for spring)

Indicators of success:

- 1) Group size
- 2) group continued engagement
- 3) group provides constructive feedback,
- 4) group demonstrates ownership of the process
- 6) Change becomes self-sustaining



• Stephen Canfield
• Tennessee Technological University
• Mechanical Engineering

Reflective Summary

Desire for Shared Strategies

Jill*

Jennifer*

Ipsita*

Building a Culture of Reflective and Innovative Faculty



Build a network of small, active faculty development groups across the college of engineering that meet regularly to encourage and support research-proven instructional change.

Quadrants: II and IV
(and maybe III)

Strategies

- Partner with Center for Teaching Excellence.
- Apply for external funding to legitimize effort.
- Bring Dean's office onboard via ???

Timeline

- Proposals and campus legwork – Summer/Fall 2013
- Start of groups – Spring 2014

Potential Obstacles

- Insufficient incentive for faculty to participate
- Lack of buy-in at college level

Assessment

- Fraction of faculty participating
- Evidence that administration values/rewards participation

Plans for Sustainability

- Make part of college culture, perhaps supported by associate chairs in each department.

Jill Nelson
George Mason University
Electrical and Computer
Engineering

Getting them on the bus and driving it forward



Description

Phase 1: Faculty developing a strategic plan or mission statement for improving education in the department

Phase 2: Providing the support needed for faculty to improve

Quadrants 4 and 2

Strategies

Phase 1: Faculty retreat to develop mission/plan led by outside facilitator (1/2 or 1 day)

Phase 2: Arranging support from Center for Teaching and Learning as well as monthly faculty discussions (1 year)

Obstacles/challenges

How to get ALL faculty to participate without feeling defensive?

Strategy unknown???

Assessment

Phase 1: Mission statement will be evidence of success

Phase 2: Participation in monthly discussions, peer observations of teaching, put goals into annual performance review

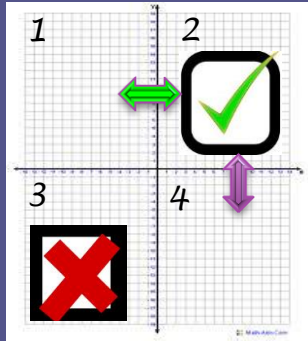
Jennifer Cole
Northwestern University
Department of Chemical and
Biological Engineering

Share Learn Grow



Description

Build a **community** of reflective teachers



Quadrants

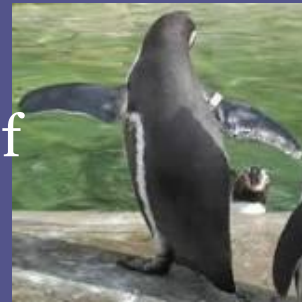


Strategies to Implement

Align efforts with existing initiatives



Start with community of flippers?



Potential Obstacle
commitmen



Concrete Plan



Assessment

Community growth



Ipsita Banerjee
University of Pittsburgh
Chemical Engineering
Bioengineering/ MIRM

Reflective Summary

Curriculum and Models

Jeff*

Amy

Joe *A

Waleed

Kristy

Sahra

Clinical Immersion for Engineers



Jeff Reinbolt
University of Tennessee
Mechanical, Aerospace, &
Biomedical Engineering



Educational innovation description

A 10-week, clinical immersion & planning period in the summer to enhance the future senior capstone design activities in the fall & spring



Quadrants

I Curriculum Pedagogy	
	IV Shared Vision

Strategies to implement

- Extended, 5-year effort (*NIH R25*)
- Identify stakeholders' goals and attend to their needs
- Maintain website with projects/materials
- Evaluate effectiveness (*projects, feedback, usefulness in career*)
- Expose community to a clinically relevant engineering symposium

Timetable

2012	2013 – 2016
Preliminary work	Ongoing...

FUTURE

Furthering University of Tennessee Undergraduate Research Education

for Team-Based
Design in

BME

BioMedical Engineering

Potential challenges

- Administration buy-in
- Faculty and student complacency
- Lack of student interest in lifelong learning
- Sustainability of program

“Just in case” strategies

- Faculty pub nights
- Brown bag lunches
- Industry support



Assessment

- Identify program weaknesses

(strengths) to decrease (increase) in subsequent program years

- Implement suggested improvements
- Monitor expected career paths before and actual ones after
- Determine number of career paths benefiting from skills and experiences offered



Sustainability After 2017?

Informing Change in the Aerospace Curriculum

Description of Project

- Demonstrate and continue to grow flipped courses
- Assess impact
- Use assessment to inform ongoing curricular discussions

Quadrant 4, 2 & 3

Strategies/Procedures

- Continue with flipped class model, with graduate teaching fellows as group mentors / facilitators
- Gather data every semester, from current and past flipped course offerings
- Doggedly disseminate and advocate
- **Find friends on campus**

Potential Obstacles/Challenges

- Poor faculty-student workload with no TA support reduces ability to actively engage with /mentor students in large classes, even during appointed time
- Faculty divided between skeptics and proponents
- Even the proponents are ill-prepared for new pedagogies

Assessment

- Student surveys (SurveyMonkey!)
- Course performance
- Longitudinal studies of performance and student surveys in subsequent courses

Plans for sustainability

Advocate for formal incorporation into UG curriculum, as it is being debated and changed



Amy R Pritchett
Georgia Tech
Aerospace Engineering

Acceptance of New IDEAS Major by Liberal Arts Faculty

Building cross-disciplinary major that includes liberal arts faculty

Quadrant 1 and 4

Tactics:

- 1) All campus info sessions (happening now)
- 2) Engineering faculty participate in LA programs (1 year)
- 3) New faculty line in liberal arts (3 years)



Barriers

- 1) Colleague's Perceptions
- 2) Department Chair Teaching Allocation

Assessment:

- 1) Significant contributions from some liberal arts faculty
- 2) Liberal arts faculty listed as affiliates

Joe Tranquillo
Bucknell University
Biomedical Engineering,
Electrical Engineering,
Neuroscience

How to sustain our efforts?

- Surveys
 - Times and days in the fall
 - What worked and what didn't
 - What would you like to see in the fall

When we will meet!

SAME TIME SAME DAY

Fall FOEE VCP Days and Times



Mon	Tue	Wed	Thu	Fri
9:00 am ⁷	9:00 am ⁷	9:00 am ⁷	9:00 am ⁷	9:00 am ⁷
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What Works

- There were a few glitches, as expected - but I felt that overall organization and other aspects were quite good.
- First of all, I LOVE being a part of this community. This place (like no other on campus) makes me feel like I am with people that think like me and want the same things that I want. I am enjoying this so much! For our weekly meetings, I liked having the breakout rooms to bounce ideas off of others. I respect my colleagues in this group and appreciate their feedback. I wished our sessions were longer.
- The interest and commitment of the participants and organizers has made the sessions very valuable.
- The group size was great and everyone was very friendly and helpful even when the technology sometimes was buggy. I was impressed that this group of really busy people were able to find time and value in meeting each week.
- The readings are great! They have been thought-provoking, and have articulated many things that I have butted heads against.
- On the whole, Adobe Connect worked very well. I liked the small breakouts with reporting back to the entire group. The homework assignments were manageable and interesting. Mary and Jennifer were very organized and kept the group on task. I liked working with this cohort of people.
- I enjoyed the overall format of the meetings. I got a lot out of the discussions (both in the breakouts and as a group)
- All of these aspects worked very well. We may have benefited more from more interactions with the leaders.
- Organization of sessions, regular review of key content, instructor's preparation and summarizing work from previous sessions
- For the first run of the VCP, I was quite impressed. The struggles with Adobe Connect were not a deterrent to me, because I have used it before and appreciate some of the challenges that come with conducting live, online sessions. I thought the amount of time for each session and the structure worked perfectly. I liked that there was a brief review of the readings by Jennifer with time for questions prior to the break-out sessions. I especially appreciated the small breakout rooms, as I thought the discussions were more focused with time devoted to individual projects. Not only was there good feedback, but I appreciated hearing about other programs. I don't think these discussions worked as well in large group because there were not natural tangential conversations as different ideas were offered. I did appreciate seeing the comments and short discussions as a result of all small group sessions

New For Fall

- Longer times in the break-out groups.
- I feel like adobe connect has limited is a little. With technical glitches, microphone problems, and time to set things up and get them to go smoothly we lose valuable time discussing our ideas for projects. I would also like to see more participants blogging. Maybe the blogs could be answering specific questions? Something needs to get more people blogging. I liked reading all the blogs from the first two weeks.
- The goals and mission of the VOEE VCP are right on target. We really need this type of community. I did find communication to be difficult. I was part of several breakout sessions where one or more people didn't get a chance to participate. It's tough to use technology as a substitute for face to face meetings. But you're doing an admirable job of trying to make it work. I also found it hard, within the amount of time I had allocated for the tasks, to both figure out what work we were supposed to be doing between sessions and actually doing the work. I suggest trying to find an easier way to communicate the schedule and homework. I did notice that most people seemed to be following without any trouble. I think the quadrant approach is interesting and I'm glad to have learned about it. But I think it has its limits. and I would happy to continue discussions within some other framework.
- I don't know if I would change anything about the sessions. I hope that I can make more of them next time around!
- It's been really hard to reliably make the sessions. One problem has been technical with the Connect tool - the other has been difficulty in staking out 1&1/2 hours every week. Perhaps of the sessions were shorter and tighter, so that there is less chance that it will conflict wit, say, the only time the rest of the thesis committee was free for a defense?
- It will be good to get the session scheduled asap so that I can protect my calendar. It was difficult to clear my calendar in the middle of a semester. I liked it when our breakout groups had their own whiteboard - the shared whiteboard got distracting, and it was difficult to find space to write or see what our group had written. I didn't think the ASEE VCP website was easy to navigate - I had to poke around a lot to find what I needed, and it was difficult to follow through the blog. It would be nice if there were a feature in Adobe Connect that popped up a picture of the person talking so that I could better associate names and faces (I don't need the video feature active though). I think it would be helpful to start talking more about assessment and writing up our results. It would be exciting to add our experiences to the literature (in such a way that our articles would end up in the category of papers with good supporting evidence of change success/failure).
- Some technology glitches slowed things down at times. In the breakouts, I found that when there was some uncertainty about when the session would end it created an awkward time where people were reluctant to begin speaking because the session could end at any time and we didn't want to get cut off. Having a fixed ending time for the breakouts would help.
- In the breakout sessions it maybe of advantage to cluster participants based on the quadrants in which our project interest falls. This helps in addressing some of the breakout questions, for e.g.: how will this quadrant help in your project.
- more details / examples of specific applications
- I would like a few more readings, though you did give us a list that I will likely view for quadrent specific info. I like the suggestion of fewer meetings during the fall. I would still like us to break into small groups to discuss successes and challenges of our implementation.

Interests

#	Item	No Interest	Some Interest	High Interest	Total Responses
1	Guest Speakers (e.g., Charles Henderson, successful projects that have been written about)	0	4	6	10
2	Journal Club on Quadrant 1	2	6	2	10
3	Journal Club on Quadrant 2	1	5	3	9
4	Journal Club on Quadrant 3	2	5	2	9
5	Journal Club on Quadrant 4	1	4	5	10
6	I'm Stuck and Need Advice From My Fellow FOEE VCP Fellows!	1	2	7	10
7	Discuss New Projects and Ideas	1	1	8	10

How Often

#	Item	1 session	2 or 3 sessions	4 or 5 sessions	Total Responses
1	Guest Speakers (e.g., Charles Henderson, successful projects that have been written about)	5	4	1	10
2	Journal Club on Quadrant 1	8	0	0	8
3	Journal Club on Quadrant 2	6	1	0	7
4	Journal Club on Quadrant 3	5	1	0	6
5	Journal Club on Quadrant 4	5	2	1	8
6	I'm Stuck and Need Advice From My Fellow FOEE VCP Fellows!	6	2	2	10
7	Discuss New Projects and Ideas	5	4	1	10

Other Ideas

- **Within the small groups that are working on similar projects we could read each other's project plan and give feedback. (Though we could also do this offline). A session on how to approach a Dean or Provost in order to get support for your project plan.**
- **You're doing a great job. Thanks for supporting our educational activities.**
- **Hearing from and reading some other models for institutional change would be helpful. Perhaps hearing from a practitioner (someone at a high level who has created some real change at their university) who can give advice and answer some questions.**
- **Writing up our experiences in a rigorous manner. Assessment techniques. One thought on organizing the Journal Club times would be to have each person read and summarize a different article so that we could all expand our knowledge in the area quickly.**
- **Thank you for your hard work in putting this together.**
- **Keep doing what you are doing - you are great! Thanks for coordinating the effort this spring.**