

# Leadership Virtual Community of Practice (LVCP)



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**Session 3: Pedagogies of Engagement – Part 1**  
January 29, 2013

# Session 3. January 29, 2013

- Pedagogies of Engagement: Making class sessions more interactive
- Pre-work
  - ▣ Watch the video “Rethinking the way college students are taught”  
<http://americanradioworks.publicradio.org/features/tomorrows-college/lectures/rethinking-teaching.html>
  - ▣ Read and be prepared to discuss the following articles from the ASEE VCP portal
    - Pedagogies of Engagement
    - Idea Paper #53
    - Wieman Science article
    - Haak Science article

# Tentative Agenda



- Welcome and learning objectives ~ 5 minutes
- Review of readings ~ 15 minutes
- Planning ways to incorporate research and evidence-based practice into your own VCP ~ 35 minutes
- Wrap up and plans for Session 4 ~ 5 minutes

# Session 3: Learning Objectives



- Describe key features of pedagogies of engagement (active, interactive & cooperative learning and challenge-based learning) and explain the rationale for using them
- Apply pedagogies of engagement to VCP practice

# Reading Reflection

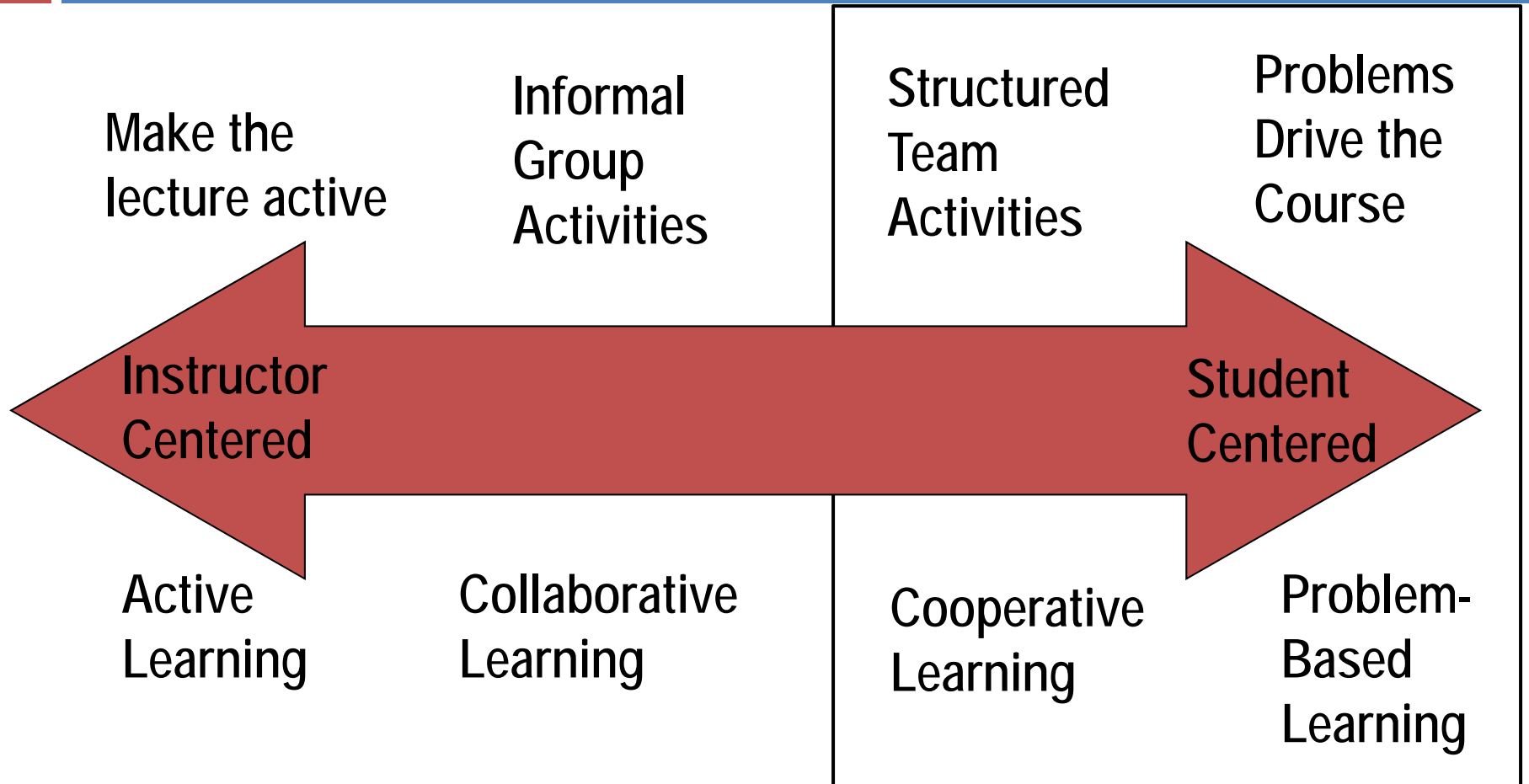


- Focus: Reflecting on today's readings
- Use the whiteboard, divided into five VCP sections, to write (~5 minutes)
  - ▣ Key ideas and insights
  - ▣ Rationale for using pedagogies of engagement
  - ▣ Applications
  - ▣ Questions
- Open discussion (~10 minutes)
  - ▣ Mechanics, FOEE, Circuits, Materials, Thermo

# Reading Reflection

<p><b>Mechanics</b></p> <p>&gt;2 effect size is huge collaborative vs cooperative</p> <p>experience of instructor doesn't matter (paper with TA doing AL) will this research really convince the non-believers?</p> <p>many of the traditional AL techniques discussed - didn't get much new</p> <p>how to engage those students who don't "engage" in AL</p> <p>exact comparison of Project vs</p>	<p><b>FOEE</b></p> <p><b>Active learning works if the</b> activity is meaningful. This is an important feature with engineering.</p> <p>There are some techniques that I have not tried yet, but am interested in.</p> <p>Reflection is very important, perhaps more so than the active part</p>	<p><b>Circuits</b></p> <p>Students learn better from peers than us. No one has anything to say about labs.</p> <p>activities do not need to be elaborate to be effective</p>
<p><b>Materials</b></p> <p>The features of active learning are "doing" and "reflecting". Often we focus on the "doing" part and forget about the "reflecting" part.</p> <p>Interesting observation that the method had more impact than the instructor</p> <p>(example of trained grad student vs. tenured professor).</p> <p>Students need to take responsibility for their</p>	<p><b>Thermo</b></p> <p>Students respond positively to these</p> <p>Downside: requires significant/great change by instructors...</p> <p>When students are actively involved in making meaning through applying concepts in novel ways they learn more than when they are told</p> <p>It helps to have activities that students can talk through with their peers</p> <p>Instructors can guide discussion over don't know rather than what they think students should learn</p> <p>All the pedagogies require action and thought and reflection (most important)</p>	<p><b>Leadership</b></p> <p>What role if any do you think research evidence will play in your VCP?</p> <p>How important/useful are videos for your VCPs?</p>

# The Active Learning Continuum



Strong Evidence Base – Cooperative Learning & Challenge-Based Learning

# Pedagogy in the Classroom, 2005 & 2008

Methods Used in “All” or “Most”	All faculty 2005	All faculty 2008	Asst Prof 2008
Cooperative learning	48%	59%	66%
Group projects	33%	36%	61%
Grading on a curve	19%	17%	14%
Extensive lecturing	55%	46%	43%

\*The American College Teacher. National Norms for the 2004-2005 and 2007-2008 HERI Faculty Survey, [www.heri.ucla.edu/index.php](http://www.heri.ucla.edu/index.php)



# Pedagogy in the Classroom, 2011

Methods Used in “All” or “Most”	STEM women	STEM men	All other women	All other men
Cooperative learning	60%	41%	72%	53%
Group projects	36%	27%	38%	29%
Grading on a curve	17%	31%	10%	16%
Student inquiry	43%	33%	54%	47%
Extensive lecturing	50%	70%	29%	44%

\*Undergraduate Teaching Faculty. National Norms for the 2010-2011 HERI Faculty Survey, [www.heri.ucla.edu/index.php](http://www.heri.ucla.edu/index.php)

# Pedagogy in the Classroom, U-Michigan



- Identified a stratified (by class size and course level) random sample comprising 15% of all undergraduate engineering classes
- Observed 26 of the resulting 30 classes using “Teaching Dimensions Observation Protocol” and trained observers
- Studied degree of faculty and student Q+A and use of active learning

Finelli, C. J., & Daly, S. R. (2011). Teaching practices of engineering faculty: Perceptions and actual behavior. *Proceedings of the Research in Engineering Education Symposium*.

# Pedagogy in the Classroom, U-Michigan

- Degree of faculty and student Q+A varies
  - ▣ Some faculty asked multiple questions, one asked no questions
  - ▣ Many faculty questions were “non-productive” (no student responded)
  - ▣ Students asked questions in most classes (but not in three classes)
- Use of active learning techniques is minimal
  - ▣ A few faculty used active learning
  - ▣ 60% of the classes used no active learning

Finelli, C. J., & Daly, S. R. (2011). Teaching practices of engineering faculty: Perceptions and actual behavior. *Proceedings of the Research in Engineering Education Symposium*.

# Using the Research for your VCP

- Focus: Framing the research so your faculty VCP participants see it as credible
- Individually write & reflect on these questions (~5 minutes)
  - ▣ Do you think the research presented in the readings will be convincing/credible to faculty?
  - ▣ What might be some criticisms about using active learning from traditional faculty members?
  - ▣ How might you overcome faculty resistance to using them?
- Share (~25 minutes)
  - ▣ Jennifer, Brian, Ken, John, Dick, Lisa H., Ed, Mary, Milo, Lisa B. (~2 minutes each)

# Session 4. February 5, 2013

- Pedagogies of Engagement - Part 2
  - Review “Recommendations for making active learning work” [www1.umn.edu/ohr/teachlearn/tutorials/active/recommendations/index.html](http://www1.umn.edu/ohr/teachlearn/tutorials/active/recommendations/index.html) and other pages at the site
  - With your VCP partner, create an activity for your faculty VCP participants. Consider the following examples:
    - Items from the HERI Faculty Surveys at [www.heri.ucla.edu/index.php](http://www.heri.ucla.edu/index.php)
    - “Planning an Active Learning Exercise” (LVCP portal)
    - “A Survey of Classroom Teaching Methods” (LVCP portal)
  - Post the activity to the portal **by noon on February 4**, and be prepared to discuss