

ESSENTIALS OF LEARNER-CENTERED TEACHING

INTRODUCTION



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The Character of this Workshop

- ☐ Focused on planning and delivering classroom instruction
- ☐ A little theory, a lot of practice
- ☐ High challenge, low threat
- ☐ Collaborative
- ☐ Interactive – participation is necessary for maximum benefit
- ☐ Collegial
- ☐ Fun

Why is good teaching important?

- ☐ Worksheet activity #1
- ☐ Teams of 3, recorder woke up earliest.
- ☐ Work with your team to list the reasons that good teaching is important.
- ☐ Be ready to report.

Leaving Engineering

- ☐ Worksheet Activity #2
- ☐ What issues contribute to undergraduate students leaving engineering?
- ☐ With your team, rank the issues in order of concern
 - ☐ 1 = most important
 - ☐ 5 = least important
- ☐ Teams of 3
- ☐ 3 Min – Go!

Inappropriate initial choice
Inadequate preparation
Financial problems
Poor teaching
Curriculum overload, fast pace

Results

Top Rank

Inappropriate initial choice
Inadequate preparation
Financial problems
Poor teaching
Curriculum overload, fast pace

Why Learn to Teach?

- 1990 Seymour & Hewitt study:
 - Why do undergrads leave Science/Math/Eng?
 - Studied 335 students at 7 institutions
- Findings:
 - 40% of engineering undergrads switch to other non-SME disciplines.
 - No significant difference in the intellectual abilities of "switchers" and "non-switchers."
 - Losses are disproportionately higher among women and minorities.

Student Ranking of Issues

Subset of 23 Issues	Switching Students
Inappropriate initial choice	2
Inadequate HS preparation	10
Financial problems	13
Poor teaching	1
Curriculum overload, fast pace	6

Cited as a Concern by Engineering Students

Excerpted from Table 1.8 of Seymour and Hewitt, which contains 23 issues	Switch (%)	Stay (%)
1. Poor teaching	98	86
2. Inappropriate initial choice	94	52
3. Inadequate advising or help	81	53
4. Lost interest in engineering	66	41
6. Curriculum overload, pacing	55	52
8. Rewards not worth the effort	43	18
9. Lost confidence due to grades	40	14
10. Inadequate HS prep/study	38	37
13. Financial problems	32	29

Why Learn to Teach?

- Students perceived that SME faculty:
 - Do not like to teach
 - Do not value teaching as a professional activity
 - Lack any incentive to teach well
- Conclusion:

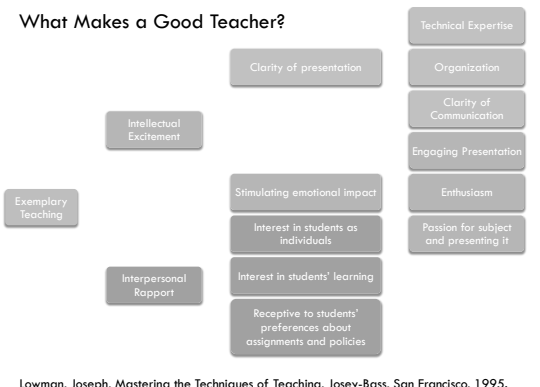
“Switchers and non-switchers were virtually unanimous in their view that no set of problems in S.M.E. majors was more in need of urgent and radical improvement than faculty pedagogy.”

-Seymour and Hewitt

What Makes A Bad Teacher?

- Students cited specifics:
 - Preoccupation with research
 - Inadequate preparation
 - No logical structure
 - Unable to explain ideas coherently
 - Material and tests at too high a level
 - No practical applications
 - Boring presentations
 - No fit between class material, homework, tests
 - Do not understand how people learn
 - Curve-grading

What Makes a Good Teacher?



Descriptors for Lowman's Two Dimensions

- ☐ Worksheet Activity #3
- ☐ What makes a good teacher?
- ☐ List characteristics for each dimension
- ☐ Work in pairs again. Switch recorders
- ☐ 2 min – Go!

Intellectual Excitement

- ☐ _____
- ☐ _____
- ☐ _____

Interpersonal Rapport

- ☐ _____
- ☐ _____
- ☐ _____

Descriptors for Lowman's Two Dimensions

Intellectual Excitement

- ☒ Enthusiastic
- ☒ Knowledgeable
- ☒ Inspiring
- ☒ Organized
- ☒ Humorous
- ☒ Interesting
- ☒ Clear
- ☒ Engaging

Interpersonal Rapport

- ☐ Predictable
- ☐ Helpful
- ☐ Caring
- ☐ Democratic
- ☐ Encouraging
- ☐ Concerned
- ☐ Available
- ☐ Open

Lowman's Two-Dimensional Model of Teaching

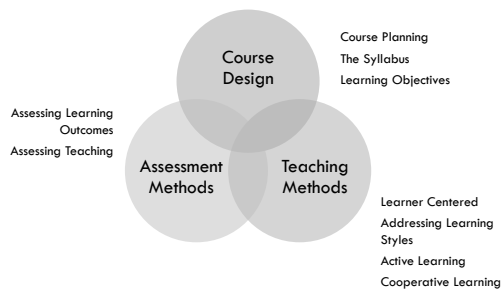
		INTERPERSONAL RAPPORT		
		Low	Moderate	High
INTELLECTUAL EXCITEMENT	High	6. Intellectual Authority	8. Exemplary Lecturer	9. Complete Exemplar
	Moderate	3. Adequate	5. Competent	7. Exemplary Facilitator
	Low	1. Inadequate	2. Marginal	4. Socratic

Learning Activity

- ☐ Worksheet Activity #5
- ☐ Watch the following video clips
- ☐ Rate each teacher according to Lowman's Model



Learner-Centered Teaching



Workshop Learning Objectives

- ☐ **Learner-Centered Teaching Methods**
 - ☐ Design classroom and homework activities to address different learning styles
 - ☐ Introduce a variety of active learning strategies into lectures
 - ☐ Use cooperative learning to enhance learning outcomes
 - ☐ Adopt inductive strategies to increase motivation and enhance learning

Advantages of LCT

- ☐ Improved learning outcomes
- ☐ Increase in student responsibility for learning
- ☐ Development of skills for lifelong learning
- ☐ Higher retention
- ☐ Better prepared graduates

Marlin, M. W. (2002). Cognitive psychology and college-level pedagogy: Two siblings that rarely communicate. In D. F. Halpern, & M. D. Hakel (Eds.), *Applying the science of learning to university teaching and beyond*. (pp. 87-103). San Francisco: Jossey-Bass.

Sternberg, R. J., & Grigorenko, E. L. (2002). The theory of successful intelligence as a basis for instruction and assessment in higher education. In D. F. Halpern, & M. D. Hakel (Eds.), *Applying the science of learning to university teaching and beyond*. (pp. 45-54). San Francisco: Jossey-Bass.
