

Flipping the classroom

Julie and Mike

Why?

- Is this going to be on the test?
- Zoning out during lectures: facebook, texting, sleeping, reading the newspaper
- Can we alter the classroom paradigm and get students to be more active participants in their learning? Can we get them to share in learning new concepts and help them apply these concepts?

What is it?

- Students are responsible for picking up new ideas outside of class
- Effectiveness of this outside learning is assessed
- Class time is used for higher levels on Bloom's taxonomy – application through problem solving rather than data mining for review at later date

Our Experience so far

Julie has tried some aspects of flipping the class in her mass and energy balance course at McNeese

- Reading assignments before class
- Online quizzes over (some) reading assignments
- Beginning of class: questions, brief discussion of key concepts, 5-10 min lecture when needed
- Most of class spent working problems
 - Work through an example together on the board
 - Students work together in small groups while Julie walks around room and answers questions
- End of class: wrap-up discussion, questions

What's in the literature/best practices?

- Explain to students your rationale for using active learning
- Reading assignments should directly relate to what will be done in class
- Pre-class quizzes over reading should count for part of the grade
- Don't re-teach what was in the reading

What's in the literature/best practices?

Before class period begins:

- Students tend to respond well to short, online lectures (10-15 min) that introduce new topics
- Often presented in conjunction with reading and/or notes with blanks
- Online quizzes can be used to assess how well new ideas were grasped

Benefits of “before class” work

- Students can learn at their own pace (watch a video more than once)
- Students can learn at their peak time of day
- Educators are forced to make very efficient lectures (teach a tough concept in 10-15 min)
- Educators and students around the country can share ideas (why re-invent the wheel? If you are really good at teaching a concept I can copy you)
- Before class work appeals to students that learn best through the lecture format

What about class time?

- Any questions? Yes → Mini lecture
No → let's get to application
- “You learn this stuff by practicing” – we say this but then we ask students to practice on their own with little written feedback
- Problems applying newly learned concepts worked in class – relies on student/instructor interaction
- This is when misconceptions are cleared up
- Works great for experiential learners

Common problems/concerns

- Do I need to record a bunch of lectures?
- Can I use other lectures found on web?
- Logistics can be problematic in large classes – how can I interact with 125 students?
- Class layout can be an impedance – desks v. tables
- Do I use the same groups each class or just a neighbor?
- How do I assess the effectiveness of flipping the class?
- Departmental resistance

What have instructors said?

- Students were more motivated – had to take ownership
- Students felt more responsible for their own learning
- Students kept up to ensure good grades
- Helped to be upfront with the students in case some wanted to change sections

“Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment” Lage, Platt, and Treglia

What have students said?

- I prefer this to traditional formats
- I learn more with this format
- I enjoyed working in groups
- I liked the informal setting – I felt more comfortable asking questions

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Mike's ideas for fall 2013

- Short videos like we saw last time and assigned reading
- Short multiple choice quizzes (conceptests) administered and graded by Moodle. Must be taken before class
- Questions: yes or no at the beginning of lecture
- In class problems in groups of two with Mike mingling
- 5-10 minute wrap-up to clarify common misconceptions