PowerPoint and POGIL

Having it both ways
The problem

- We have about 14 to 16 weeks a semester.
- We have about 2.5 hours a week for a 3 credit hour class.
- If we subtract off time for brakes, announcements, tests, quizzes ....
- We are left with about 30 hours to do something called teaching.
Lecture

PowerPoint or chalk talk.

Pros:
• Time efficient
  • Can cover a large amount of content in a short time.
• Expected

Cons:
• Passive
• Low knowledge retention
• Low process skill development
Audience Response (clickers)

Pros:
• Less passive
• Practice
• Real time feedback about learning progression
• Can assign a grade

Cons:
• Clickers are needed
• Unexpected
• Less time efficient
• Questions need to be pre prepared
Audience Response (small dry erase boards)

Pros:
• Less passive
• Practice
• Real time feedback about learning progression
• Spontaneous questions

Cons:
• Small dry erase boards are needed
• Unexpected
• Less time efficient
• No way to grade participation
POGIL
Process Orientated Guided Inquire Learning

Pros:
• Active
• Higher knowledge retention
• Process skill development
• Real time feedback about learning progression
• Group dynamics

Cons:
Next slide
POGIL
Process Orientated Guided Inquire Learning

Cons:
• Group dynamics
• Unexpected
• Higher stress for some students
  • Some students see it as a test or quiz over content not covered.
POGIL

Process Orientated Guided Inquire Learning

Cons:

• Time inefficient
  • One POGIL activity will take 1-2 in class hours.
  • Only 2-4 concepts can be covered normally.
• You may need to wright your own POGIL activities
• Copyrights may prevent you from using published POGILs.
• POGILs may need to be calibrated to your students.
Demonstrations

Pros:
• Builds interest
• Highlights macroscopic realm

Cons:
• Supplies required
• Showmanship required
• Sometimes go awry
Multi media

Videos and simulators.

Pros:
• Show demonstrations that you would be unable to otherwise show
• Non static visual representations

Cons:
• Can be hard to find high quality multi media content
  • YouTube has quite a few good videos, but many gaps.
  • PhET has many good simulators
• May need to be creative with technology.
Exile PowerPoint

Move the lecture to the web
Exiling PowerPoint

What you will need

• MS PowerPoint 2010
• A good microphone
• A streaming video server.
  • YouTube works if needed.
• Class web page (i.e. Blackboard page)
Exiling PowerPoint

Draw backs

• Students are tempted to wait until just before the test to watch the PowerPoints.
  • However, students can re-watch the videos at their own pace.
• More work for the instructor, at least the first few semesters.
  • Creating videos from PowerPoints takes a little longer to do than to deliver the PowerPoints as a lecture.
  • You are not lecturing from your PowerPoints in class; therefore, you need to find something to do.
Exiling PowerPoint

Steps

1. Build the PowerPoint as you would normally.
2. Break up the PowerPoint into about 5 to 15 slide presentations.
3. Add a cover slide and conclusions slide to each small presentation.
4. Record audio
5. Save as Windows Medea Video file
6. Upload to server.
7. Embed link into class page.
Step 4 Record audio

PowerPoint and POGIL

Having it both ways
Step 4 Record audio
Step 4 Record audio

PowerPoint and POGIL

Having it both ways
Step 5 Save as Windows Medea Video file
Kicking it up a notch

Animated sequences
Molecules In Reserve

1 x Xu5P
1 x R5P

Phosphopentose epimerase
Molecules In Reserve

1 x Xu5P
1 x R5P

Phosphopentose epimerase
Ribulose-5-phosphat (Ru5P)

Molecules In Reserve

1 x Xu5P
1 x R5P
2 x Ru5P
Creating animated sequences
Creating animated sequences

**Steps**

1. **Story board**
   - Plan on narration parts separated by animations.
   - If components are excessively stacking on top of each other, brake into more than one slide.

2. **Create slides by copying the previous slide and editing**
   - Components that are not moving need to be in the same spot on all slides.

3. **Record narration**

4. **Set timings**
Exiling PowerPoint

Drawbacks

• A 5 to 10 minute video may take 10 to 20 hours to make depending on complexity.
Thank You