Navigating Upside Down: Teaching in a Flipped Classroom Environment

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Flipping the Classroom: Promoting Active Learning

- Principles of Active Learning and Flipped Classrooms
- Best practices
- Breakout groups to discuss active learning in your teaching
Why the Traditional Lecture?

• The Good:
  – Knowledge transfer (although reading is better)
  – Easiest for faculty and students
  – Most economically feasible for the school

• The Bad:
  – Passive learning
  – Poor long-term retention
  – Inferior for skill development
  – Inferior for changing attitudes

Bligh, 2000
Why change?

"Mr. Osborne, may I be excused? My brain is full."
Attention Span

High attention

Low attention

Time in minutes

10  20  30  40  50

RESET  RESET  RESET  RESET
• Standard 6.3: The faculty of a medical school ensure that the medical curriculum includes **self-directed learning** experiences and time for independent study to allow medical students to develop the skills of **lifelong learning**. Self-directed learning involves medical students’ self-assessment of learning needs; independent identification, analysis, and synthesis of relevant information; and appraisal of the credibility of information sources.
WHAT IS THE FLIPPED CLASSROOM?

The flipped classroom inverts traditional teaching methods, delivering instruction online outside of class and moving “homework” into the classroom.

THE INVERSION

The Traditional Classroom
Teacher’s Role: Sage on the Stage

LECTURE TODAY
Homework
Reading and questions due tomorrow
WHAT IS THE FLIPPED CLASSROOM?

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THE INVERSION

Medical education reimagined: a call to action.
Prober CG, Khan S.
Benefits of the flipped classroom model

More one on one time with teacher

The teacher can spend their class time working one-on-one with the students who require extra help. More one-on-one time also translates into better student-teacher relationships.
Benefits of the flipped classroom model

**Students learn at own pace**

The ability to pause, rewind, and rewatch videos allows students to spend more time learning about concepts they find challenging. Meanwhile, students who have mastered a concept need not waste time reviewing with the rest of the class.
Benefits of the flipped classroom model

Excellent Diagnostic Tool

With the help of computer software, teachers can quickly identify areas where students are excelling and areas where students are struggling.

Gobry 2012
Benefits of the flipped classroom model

Time is precious!

Medical school curricula allocate a fixed amount of time to each subject, yet we are learning more clinically-relevant science every day. This method saves class time for higher-order application exercises.
What are the benefits of Active Learning?

- Engages students in their own learning process
- Individuals learn more (about the content and about working in teams) when they learn together
- Instructors can identify areas where students are struggling & address misconceptions
- Increase attendance
- Use class time for higher-order application exercises
Best Practices in Flipped Classroom Design

• Before class
• In class
• After class
Before class best practices

• Faculty preparation
  – Clearly define learning goals
  – Convey expectations and rationale to students
  – Conduct teaching faculty prep sessions

• Student prep assignment
  – Topic may be familiar to some but not all
  – Incentivize completion (e.g. quiz on material before class)
  – Strive for time neutrality
  – If a video, keep it brief
What is different between a lecture and a short video?

• Length – shorter (~10 minutes)
• Focus – 1-2 topics
• Organization – less filler, content is denser
• Accessible on demand from anywhere
• Students cannot ask questions in real-time
• Sources for student materials
  – YouTube/Khan Academy
  – Coursera
  – Ted Talks
  – Screencasts (voice over powerpoint, screen capture)
  – New video vignettes
  – Edited recorded lectures
  – Readings
Godley Digital Media Studio

• Faculty workstation**
• Production space
• Editing room

Currently *(temporarily)* free for curriculum applications
Reserve 3-7 days in advance here:
http://www.bumc.bu.edu/bumc-emc/godleydms/
Formats of video content for learners

- PowerPoint slides with narration
- Hand drawn e-ink text and images with narration
- Video recording of hand drawn text and images on paper
Creating video content for learners

- Speak directly to listener
  - Explain how you think about a topic
- Provide clear introduction and summary
- Use pictures and diagrams
- Don’t be afraid to rehearse – a lot
  - Can record short takes and edit together

Jon Bernstein, Stanford Med
Tools for screen capture

- Powerpoint
  - PPT → slide show → record slide show → export as video
- Camtasia (Mac or PC)
- Adobe captivate (Mac or PC)
- Quicktime (Mac version only) – Free

• Sessions should be active
  – Can be conducted in large and small group settings
  – Do not allow sessions to revert to review of material you expected students to prepare
  – Consider requiring attendance if promoting small group work

• Level of exercise should be challenging
  – If too simple, students will feel they could have been more efficient on their own
After class best practices

• Equalizing experiences across rooms
  – Consider releasing an answer key

• Pre- and post-tests can help you understand the value of each session component

• Consider what you would like to learn from course evaluations
  – Don’t be discouraged if they are negative at first
Challenges to implementing flipped classroom exercises

- Change is hard.
- Instructors need to learn new technology.
- Time required to create polished videos or new class activities.
- Curriculum, teaching space, and faculty time are structured in favor of lecture delivery.
Overcoming barriers to educational change

• Identify readily available resources to avoid reinventing the wheel.
• Involve a medical student or medical education fellow (i.e. a digital native).
• Use accessible tools with a simple learning curve, e.g. PPT screencast.
• Plan ahead so that you can advocate for changed needs in space or curriculum time.
Flipping the Classroom: Using Active Learning Techniques to Elevate Learning in the Classroom
1. What is a topic in your educational practice that would lend itself to being introduced outside of class?

2. What higher order activity would that allow you to do in class time that you are unable to do at the moment?

3. What resources and skills do you need to accomplish this?

4. Who do you need to engage to make this happen? (e.g. curriculum dean, clerkship director, etc.)

5. Commit to three action items that will help move this forward.