Facilitating Active Learning in Large Lecture Courses: The Flipped Method
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Session Outline
• Brief introduction to the flipped method.
• Personal experience with flipping a large lecture course.
  ▫ Video lecture considerations
  ▫ Impact on students and instructor
• Tools to facilitate flipping a large lecture course.
  ▫ Video production tools
  ▫ Case resources
• Discussion/Questions

The Flipped Method

www.knewton.com/flipped-classroom
Tackling the Flipped Method in a Large Lecture Course

- Introductory Biology I for majors
- Two sections: 200 students and 250 students
- Large auditorium lecture hall

Strategy:
- Record lecture for the students to view prior to coming to class.
- Do case study during class using PowerPoint and classroom response system (clickers).

Tools for Video Production

- Lecture Capture Software
  - Echo360
  - Panopto

Echo360 Student Interface
Tools for Video Production

• Lecture Capture Software
  ▫ Echo360
  ▫ Panopto

• Presentation Apps for iPad
  ▫ Doceri
  ▫ Explain Everything

A good video....

• is engaging.
• is tied to specific learning objective.
• can be easily accessed and viewed by students.
• doesn’t necessarily have to be made by you!
• is short.

Write and draw with Explain Everything
Case Study Resources

Impact on Students

<table>
<thead>
<tr>
<th>Response Rate: 412/446</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This case study helped me to better understand the concepts of enzyme function and inhibition.</td>
<td>47%</td>
<td>39%</td>
<td>10%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>I enjoyed learning about biology concepts through a case study.</td>
<td>90%</td>
<td>5%</td>
<td>1%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>I would like to do more clicker cases in this course.</td>
<td>64%</td>
<td>21%</td>
<td>9%</td>
<td>3%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Impact on Students

“The case study portion of the class was wonderful.”

“I really enjoyed the case studies. I liked them because it allowed me to apply the information I learned in class and understand it on a deeper level.”

“The case studies were fun!”

“Case studies are an excellent idea to further engage the students in the course.”

“I really enjoyed the case studies because it gave a different medium to learn the material throughout the course.”
Final Remarks

- Start small
- Get student buy-in
- Manage time
- Seek and offer support

- Questions? Comments?
Sources for Case Studies

<table>
<thead>
<tr>
<th>Source</th>
<th>Link</th>
<th>Disciplines</th>
<th>Peer-Reviewed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Center for Case Study Teaching in Science</td>
<td><a href="http://sciencecases.lib.buffalo.edu/cs/collection/">http://sciencecases.lib.buffalo.edu/cs/collection/</a></td>
<td>All science disciplines including graduate/clinical - many cases also have social science, behavioral &amp; humanities perspectives</td>
<td>Yes</td>
</tr>
<tr>
<td>Centers for Disease Control Epidemiologic Case Studies</td>
<td><a href="http://www.cdc.gov/epicasesstudies/">http://www.cdc.gov/epicasesstudies/</a></td>
<td>Epidemiology/Public Health</td>
<td></td>
</tr>
<tr>
<td>University of Pittsburg - Dept. of Pathology</td>
<td><a href="http://path.upmc.edu/cases.html">http://path.upmc.edu/cases.html</a></td>
<td>Pathology</td>
<td></td>
</tr>
<tr>
<td>UCLA Statistics Case studies</td>
<td><a href="http://www.stat.ucla.edu/cases/">http://www.stat.ucla.edu/cases/</a></td>
<td>Statistics</td>
<td></td>
</tr>
<tr>
<td>University of Washington School of Public Affairs</td>
<td><a href="http://hallway.evans.washington.edu/">http://hallway.evans.washington.edu/</a></td>
<td>Public Policy (including health/healthcare)</td>
<td>Yes</td>
</tr>
<tr>
<td>ShiPS Resource Center at University of Minnesota</td>
<td><a href="http://www1.umn.edu/ships/modules/index.htm">http://www1.umn.edu/ships/modules/index.htm</a></td>
<td>Sociology, History and Philosophy of Science</td>
<td></td>
</tr>
<tr>
<td>National League for Nursing</td>
<td><a href="http://www.nln.org/facultyprograms/facultyresources/aces/unfolding_cases.htm">http://www.nln.org/facultyprograms/facultyresources/aces/unfolding_cases.htm</a></td>
<td>Nursing Cases</td>
<td></td>
</tr>
<tr>
<td>American Sociological Association</td>
<td><a href="http://www.asanet.org/ethics/detail.cfm?id=all">http://www.asanet.org/ethics/detail.cfm?id=all</a></td>
<td>Sociology/Ethics</td>
<td></td>
</tr>
<tr>
<td>Rutgers Resources-Master Educator’s Guild</td>
<td><a href="http://meg.rbhs.rutgers.edu/cte/active_learning/active_case_based_learning.html">http://meg.rbhs.rutgers.edu/cte/active_learning/active_case_based_learning.html</a></td>
<td>Several links to case study sites/repositories- variety of disciplines</td>
<td></td>
</tr>
<tr>
<td>University of Missouri School of Health Professions</td>
<td><a href="http://shp.missouri.edu/vhtc/studies.htm">http://shp.missouri.edu/vhtc/studies.htm</a></td>
<td>Medical cases in diverse specialties/disease areas</td>
<td></td>
</tr>
</tbody>
</table>
**Assorted Literature on Case Studies**

1. Rutgers Biomedical and Health Sciences Center for Teaching Excellence: [http://meg.rbhs.rutgers.edu/cte/active_learning/active_case_based_learning.html](http://meg.rbhs.rutgers.edu/cte/active_learning/active_case_based_learning.html)
   In addition to linking to case studies, also links to articles on writing, teaching, and evaluating case studies.

   (A comprehensive collection of articles on teaching, writing, assessment, etc.)


**Assorted Literature on the Flipped Method**


• Interactive whiteboard useful for creating instructional videos, tutorials, and lectures.
• Add powerpoint slides, pictures, videos, and documents. Narrate and annotate to create a multidimensional presentation.
• Export movie files to Dropbox, YouTube, Google Drive, iTunes, and more for sharing.
To Start

To Control

- What you see
  - Start a new file
  - record video
  - page mark
- What students see
  - page mark
  - stop mark
  - undo and redo
  - colors and shapes
  - insert pictures
  - check mark
  - add/remove page mark
  - go to previous/next stroke
  - go to previous/next page
  - go to next stop mark
  - go to previous stop mark
- also can
  - play/pause
  - press and hold to select/cut/copy/paste
  - share/upload