Assessment Focused Flipped Classroom

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...AND WE TOLD THEM IT WAS CALLED THE “THAYER” METHOD!
Flipped Classroom Made Easy

Traditional Classroom

- Happens FIRST:
  - Lecture
  - Assign Homework

- Happens SECOND:
  - Complete Homework

Flipped Classroom

- Happens FIRST:
  - View Instructional videos at home OR
  - Listen to teacher podcasts
  - Complete quick assessments so teachers can gauge understanding before tomorrow’s class

- Happens SECOND:
  - Do schoolwork (what used to be assigned for homework) together with teacher and peers
  - Teachers can offer one-on-one help

Image credit: http://edtechenergy.blogspot.com/
Reasons to “flip” the classroom

• Many students don’t have the attention span for a traditional lecture.
• “Passive” listening does not engage the mind like “active” doing.
• “Content delivery” is not the best use of time together.
  – Get the students interacting with each other while they are together.
  – Let the professor interact with student individually while they are together.
Challenges of “Flipped”

• Some students will not do pre-class work and come unprepared (Is this just GGC?)
• Students do not get to see their professor “teaching”
• Student buy-in
  – Most students hate “flipped classroom” learning
  – They complain that “the teacher doesn’t teach”
A balanced approach.
A balanced approach.

• Micro Lectures:
  – 10 – 15 minutes
  – Focused on a single topic

• Example Problems:
  – Directly Related to Homework

• Student Group Work
  – Student work on “homework” during class
  – Anything they don’t finish is taken home

• Lab
  – Labs are directly tied to the day’s topic
  – Lecture/Lab are combined
What else?

• Textbook optional; not referenced in class or homework.
• Weekly quizzes replace unit tests
• Planning my week
  – Write the quiz first: what is most important.
  – Write the homework next
    • Not from a book
    • Designed to directly prepare student for the quiz
    • LOTS of homework: physics requires practice!
  – Plan mini-lectures last
What do students think?

<table>
<thead>
<tr>
<th>Question</th>
<th>Week 2 Answer (N=41)</th>
<th>Week 9 Answer (N=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>We need a book.</td>
<td>41%</td>
<td>14%</td>
</tr>
<tr>
<td>Professor should lecture more.</td>
<td>51%</td>
<td>44%</td>
</tr>
<tr>
<td>Homework helps on the quiz.</td>
<td>98%</td>
<td>97%</td>
</tr>
<tr>
<td>Tests are better than quizzes.</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>Labs relate to the quiz.</td>
<td>95%</td>
<td>97%</td>
</tr>
</tbody>
</table>
### What do students think?

<table>
<thead>
<tr>
<th>Question</th>
<th>Week 2 Answer</th>
<th>Week 9 Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework a waste of time.</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>I do all the homework.</td>
<td>98%</td>
<td>83%</td>
</tr>
<tr>
<td>Lectures do not related to quiz/homework.</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>I spend ____ hours working on homework at home.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5+  5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3-5  30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-3  60%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0-1  5%</td>
<td></td>
</tr>
<tr>
<td>The professor doesn’t “teach.”</td>
<td>0%</td>
<td>3%</td>
</tr>
</tbody>
</table>
What do students think?

• Positive
  – One of the most helpful ways of teaching I have had.
  – Well balanced
  – Perfect example of how courses should be.
  – I enjoy this method of teaching.
  – Continuity between lectures and out-of-class work

• Negative
  – Spend more time explaining
  – We need more example problems
  – Professor goes to fast
  – I would like a book to read to supplement class and get background
  – Quizzes don’t provide a sufficient challenge - students should have the additional challenge of serious examinations.
Comments and Questions

- What am I doing wrong?
- What great things are you doing that I could learn from?