Rotating ~~Flipping~~ the Classroom

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Postulates

-Active learning is more effective than passive learning.

-Instructor access is a scarce and valuable resource.

Assumption

-This discussion is limited to methodologies where students are introduced to concepts and then are asked to apply those concepts to new and different problems.

How the Traditional Classroom is Suppose to Function

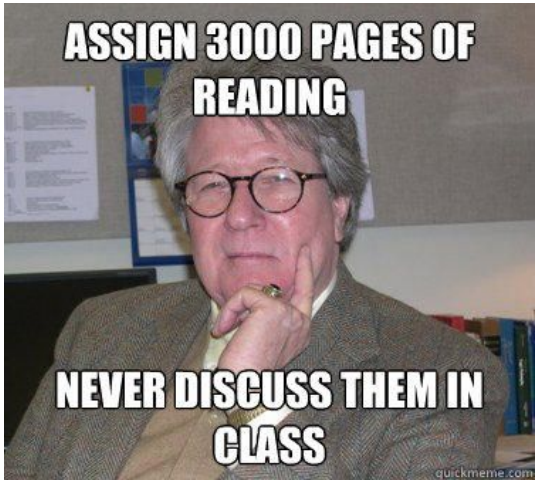
Before Meeting X		During Meeting X		After Meeting X	
Problem set on topics from meeting X-1	Reading for meeting X	Introduction to concepts via lecture and **instructor lead examples**	**Example problems solved by groups or individuals**	**Problem set on topics from meeting X**	Reading for meeting X+1

=Active

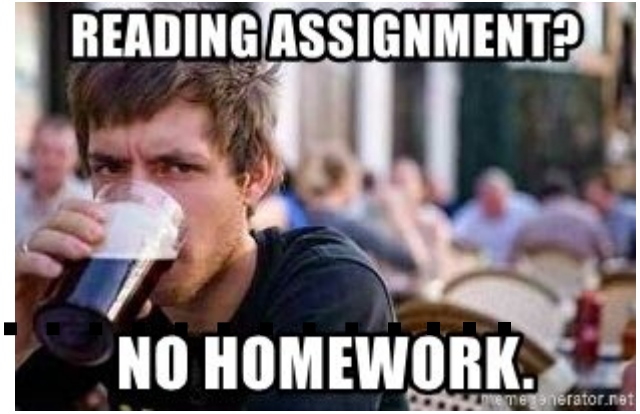
=Passive

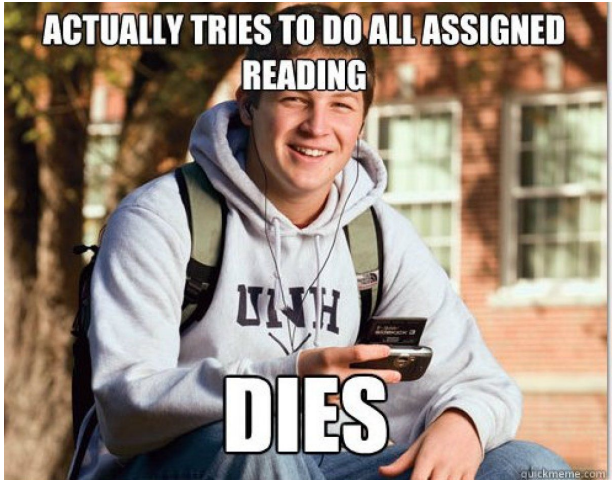
Non-Bold=Conceptual Introduction

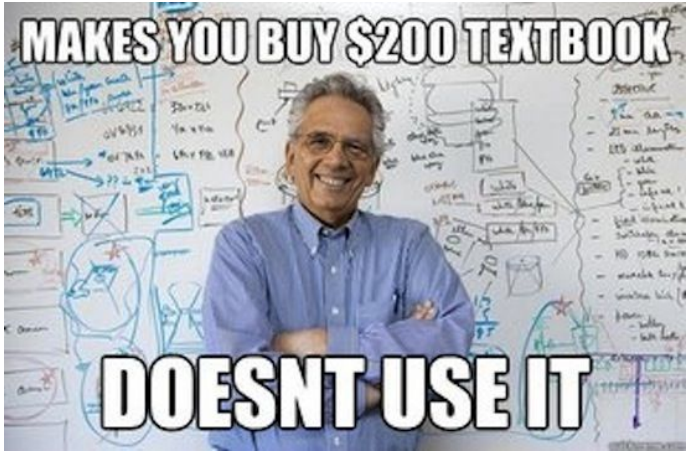
Bold=Application


ASSIGN 3000 PAGES OF READING
NEVER DISCUSS THEM IN CLASS
quickmeme.com

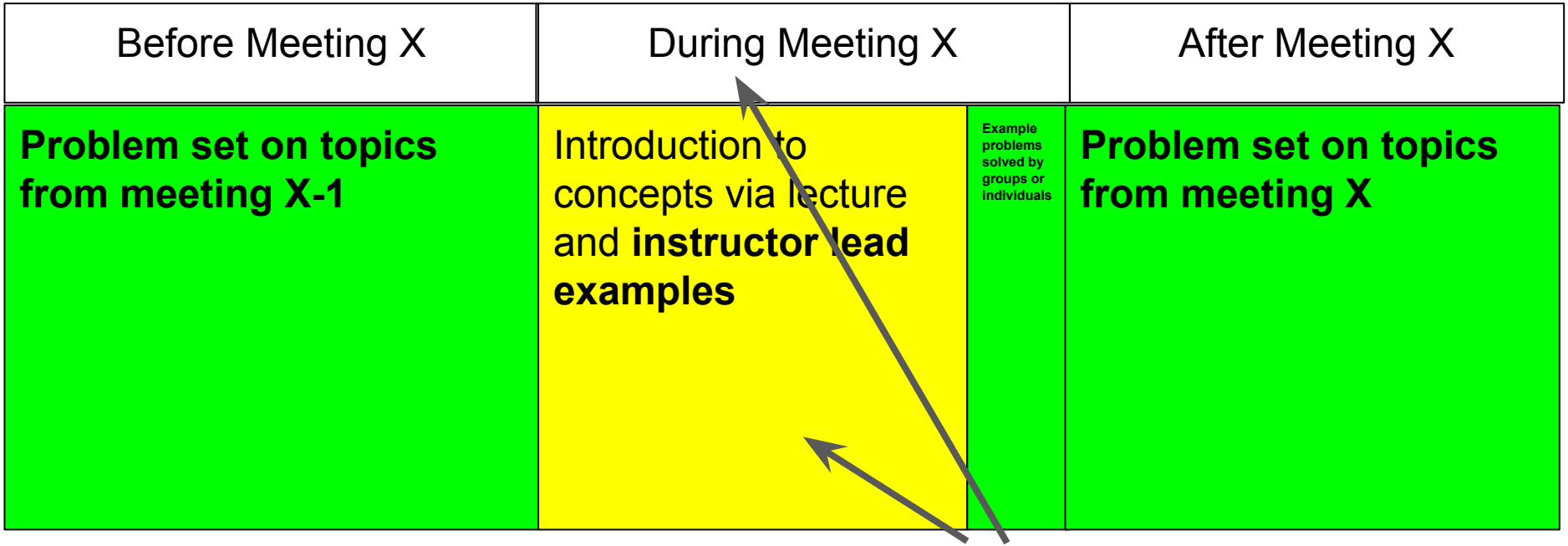
BUT…


READING ASSIGNMENT?
NO HOMEWORK.


ACTUALLY TRIES TO DO ALL ASSIGNED READING
DIES
quickmeme.com


MAKES YOU BUY $200 TEXTBOOK
DOESNT USE IT

How the Traditional Classroom Often Functions



=Active

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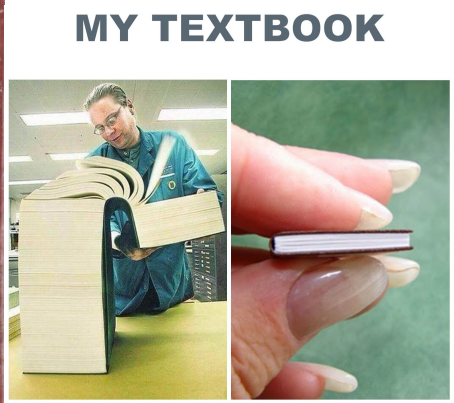
Why spend our precious time with students on relatively less effective passive learning?

Valid Historical Reasons for the Lecture Model



How the Flipped Classroom is Suppose to Function

Before Meeting X		During Meeting X	After Meeting X	
Problem set on topics from meeting X-1	Pre-Work for meeting X	**Application based active learning activities**	**Problem set on topics from meeting X**	Pre-Work for meeting X

=Active

=Passive

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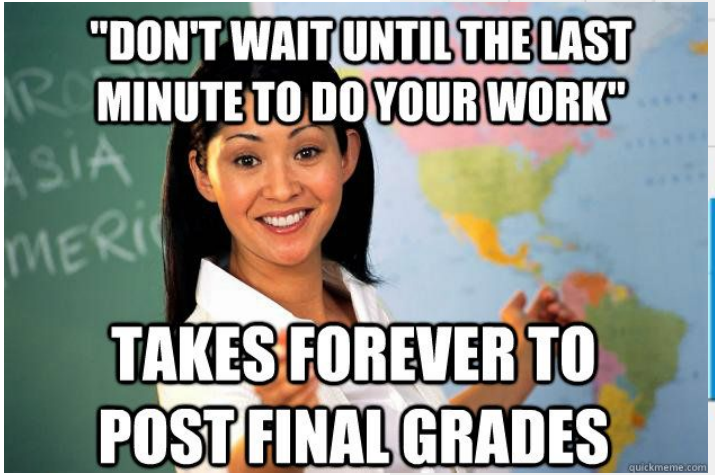
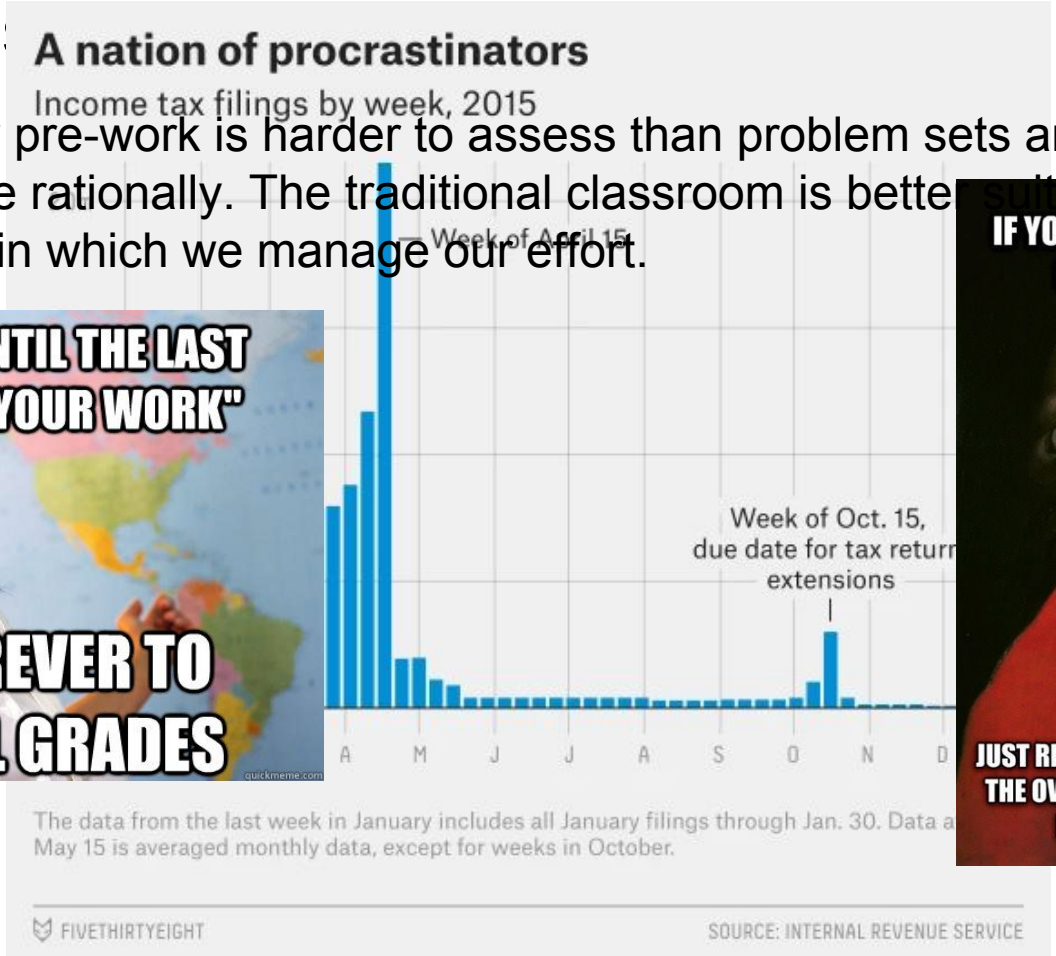
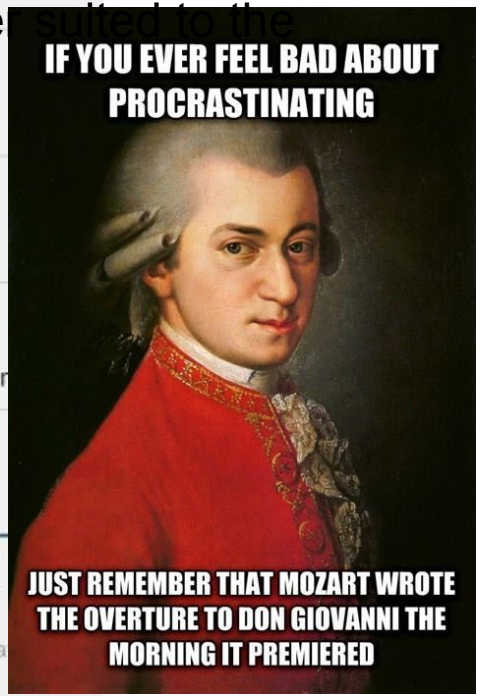
Bold=Application

So then I

-Unfortunately pre-work is harder to assess than problem sets and humans don't always behave rationally. The traditional classroom is better suited to the irrational way in which we manage our effort.







How the Flipped Classroom Often Functions

Before Meeting X		During Meeting X	After Meeting X	
Problem set on topics from meeting X-1	~~Pre-Work for meeting X~~ *YOLO!!*	***~~Application based active learning activities~~ I can never understand these activities-this instructor is no good.***	**Problem set on topics from meeting X**	~~Pre-Work for meeting X~~ *YOLO!!*

=Active

=Passive

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OK, but if I can properly incentivize the pre-work, then I should flip, right?

At least some rotation is probably worth trying. You might not want to full flip until you feel confident about:

- -Logistics
- -Familiarity with common student errors

A Summary

=Active
=Passive

Non-Bold=Conceptual Introduction
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	Before Meeting X		During Meeting X		After Meeting X	
Traditional	**Problem set on topics from meeting X-1**	Reading for meeting X	Introduction to concepts via lecture and **instructor lead examples**	**Example problems solved by groups or individuals**	**Problem set on topics from meeting X**	Reading for meeting X+1
Flipped	**Problem set on topics from meeting X-1**	Pre-Work for meeting X	**Application based active learning activities**		**Problem set on topics from meeting**	Pre-Work for meeting X
POGIL?	**Problem set on topics from meeting X-1**	Reading for meeting X	POGIL	**Example problems solved by groups**	**Problem set on topics from meeting X**	Reading for meeting X+1

Challenges of the Flipped Classroom

-Effective incentives for pre-work

-Start-up costs

-Lecture is now 100% passive

-Logistical/technical barriers

-Different types of learners will succeed

Benefits of the Flipped Classroom

-Instructor can level load with student need
-Students aren't on their own when they get stuck==>improved efficiency and less frustration
-Opportunities for student group work and all the benefits that come from peer learning and teaching.
-Opportunities for learning problem solving strategies and techniques from peers and a subject matter expert
-Students learn how to learn
-More time for in-class demos
-Opportunities to provide strong students with more material than they would otherwise be exposed to
-Less extra instruction
-More seamless for students that miss class to catch up (eye surgeries!!!)
-Opportunities to force the students into the textbook
-Persistent record of lectures that can be reviewed by students 2nd, 3rd, 4th times.
-Lees prep time than traditional after you have taught the course once.
-Better ROI than traditional when you teach multiple sections.
-Different types of learners will succeed

My version of the flipped classroom

-Implemented with a “Sequence” created in google sheets.

-Asynchronous: pre-work is recommended, but not required.

-Primarily group and individual work on “HW problems” in class. I am INTRUSIVE while in-class work is in progress.

-Quiz ~weekly so that students can’t fall too far behind without drawing attention.

Recommendations if you Rotate

-Never “make-up” for missed pre-work durgin your meeting time.

-Make your own videos (iPhone is all you really need)

-Keep concept videos short (5 minute or less ideal). Example problems or solutions to problems may be longer obviously.

-Be aware that students will watch videos on 2x speed.

-Add optional videos

-Ice breaker challenges to get group work going

Final thoughts

-Flipped classroom is not a magic bullet.

-Bad teaching is bad teaching regardless of the paradigm. The flipped classroom can’t overcome failures in communication, unrealistic scope, bad assumptions about prerequisite knowledge, etc

-Don’t be afraid to experiment with using technology to communicate with your students.