

Flipping 101: An introduction to flipped classrooms



THE UNIVERSITY OF
TEXAS
— AT AUSTIN —

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Center for Teaching and Learning
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Texas A & M Health Sciences
October 16, 2013
Temple, TX



I



Education



I



Education



I



Education



brianna girlie @bripaigegirlie

33 mins

I hate school. lhateschool. I HATE school. I h8 school. I hate skool.
lh8skool. I. hate. school. Eye h8 skool. I HATE SCHOOL. #ihateschool

Expand ↩ Reply ↻ Retweet ★ Favorite ... More



LundenStallings @livestrong_1

Feb 25

I was having a pretty good night, until I realized i gotta get up for
prison in the morning 😊🔪 #ihateschool

Collapse ↩ Reply ↻ Retweet ★ Favorite ... More

11

RETWEETS

3

FAVORITES





Kaylee Krepps @kay_lay13

Fet

Dear pre-calc, **I hate** your stinking guts You make me vomit You're the scum between my toes Love me P.S. send that message to **physics** too



JasmineJandu @JasmineJandu

13 mins

I hate the fact that there's school tomorrow. Dead serious right now, I'd rather throw up and sit on it. **#ihateschool**

Expand



Kelly Chen @planokchen

4h

School is so boring [#ihateschool](#)

[Expand](#)



Jessie Stockstad @jessiestockstad

16 Apr

Casually sitting in my room staring at the wall cause that's more fun than actually studying [#iloveschool](#)

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🌟 Lexie 🌟 @XxL_weeezyxX

17 Mar

History = there dead dude.
English = dictionary/ google.
Science = not a nerd. Don't need it.
Math= calculator.

#ihateschool #die

Expand



🌟 Lexie 🌟 @XxL_weeezyxX

17 Mar

History = there dead dude.
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#ihateschool #die

Expand



KAILS @kaillleybird

7 Apr

Never learned how to get a loan, buy a house, car, or anything else useful in life, but I DO know the effing **pythagorean** theorem

Expand

Would be funny...if it wasn't so
heartbreaking.

The number of hours students spend in a system they hate.

10,800

What #hashtag best describes your schooling experience?

- a. #ihateschool
- b. #iloveschool*(really)
- c. #schoolisboring
- d. #schoolisnotpractical
- e. #mixedfeelings

Q. What keeps you
up at night?

A.

Nothing! I sleep well.

Q. What keeps you
up at night?

A.

The future physicians I teach will be
delivering healthcare to me in 5 to 7
years.

A.

Q. What keeps you
up at night?

how to make learning "stick" in
students' memory and how to keep
everyone engaged in the classroom

Q. What keeps you
up at night?

A.
how to engage students and
maximize learning and interaction
simultaneously

A. int

Keeping

Q. What keeps you up at night?

Q. What up at night?

A.

There is not time or resources for effectively interacting with our 200+ students.

A.

How can I...

Q. What up at night?

A.

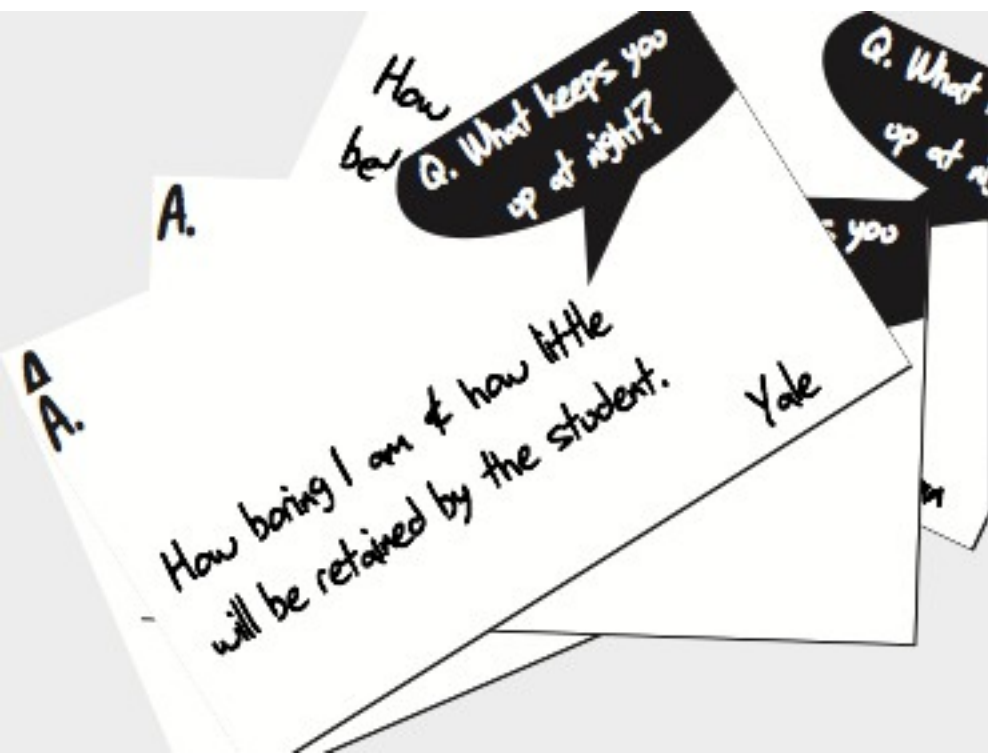
Not holding students' attention; content not beneficial

Q. What keeps you up at night?


A.

through

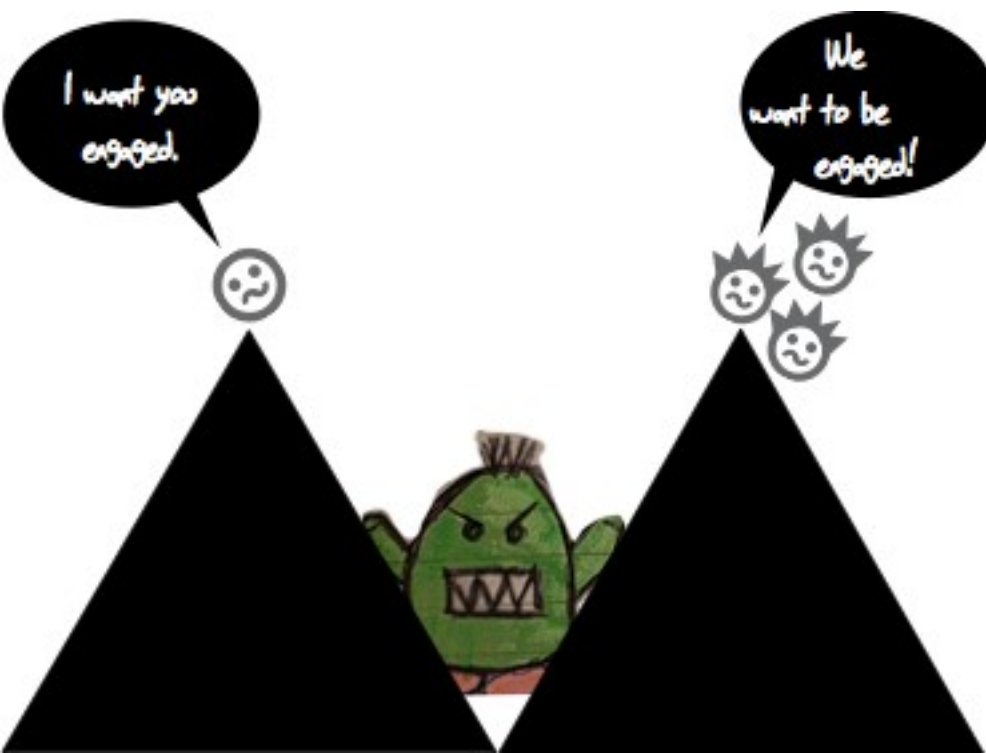
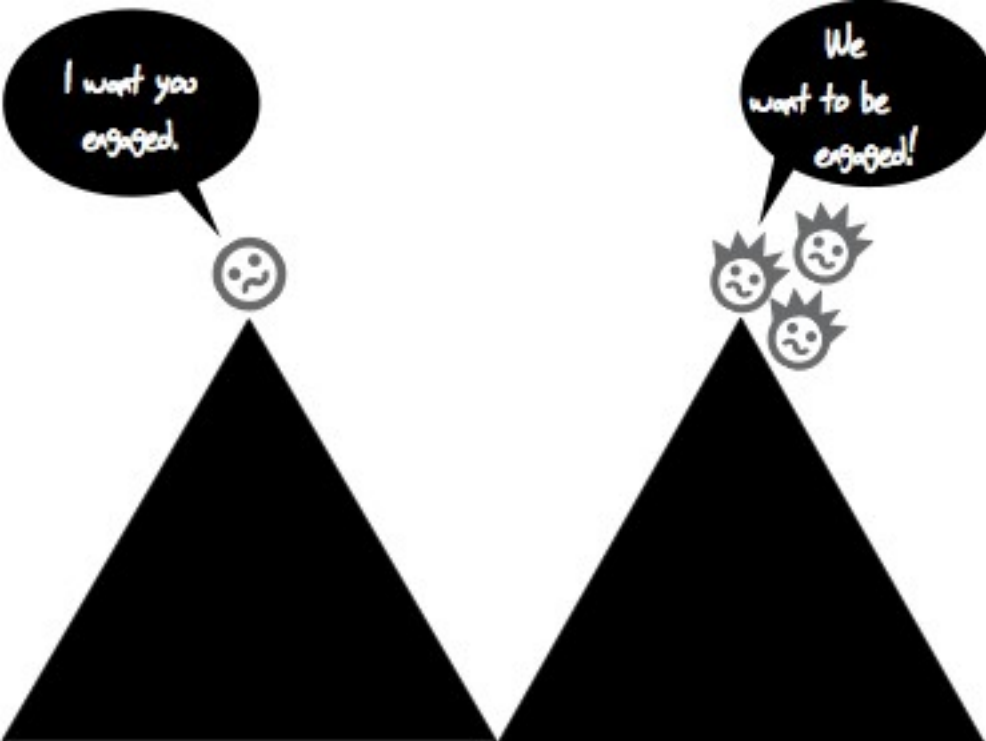
se



Students and professors want the same thing.



I want you
engaged.



Message



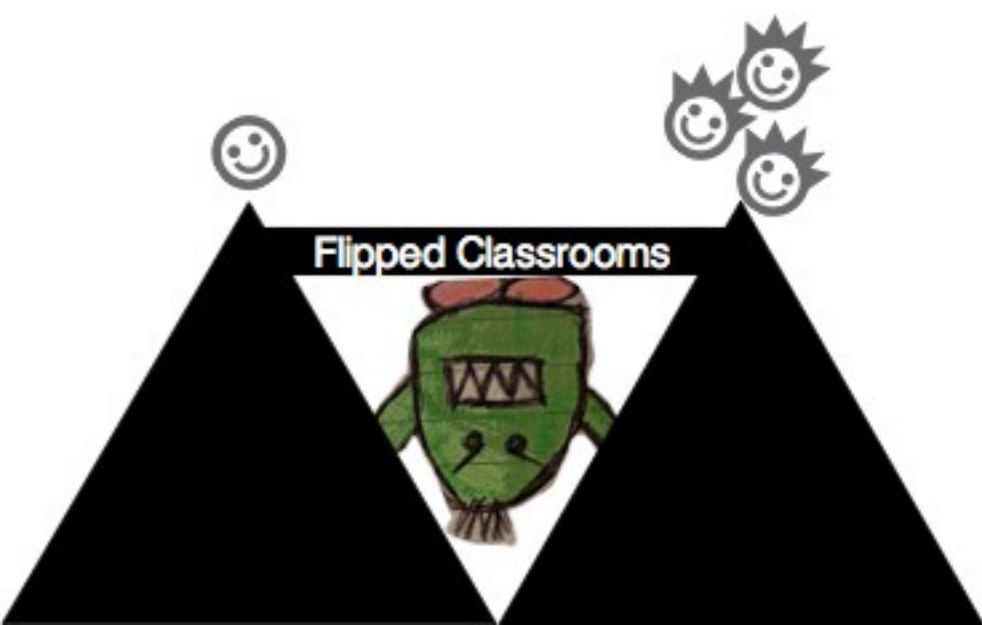
Education doesn't
have to be this
way.

What's going on in this classroom?



What's going on in this classroom?

- a. teacher left the room
- b. talking about dating
- c. working on a physics problem
- d. this isn't a classroom, it's a party



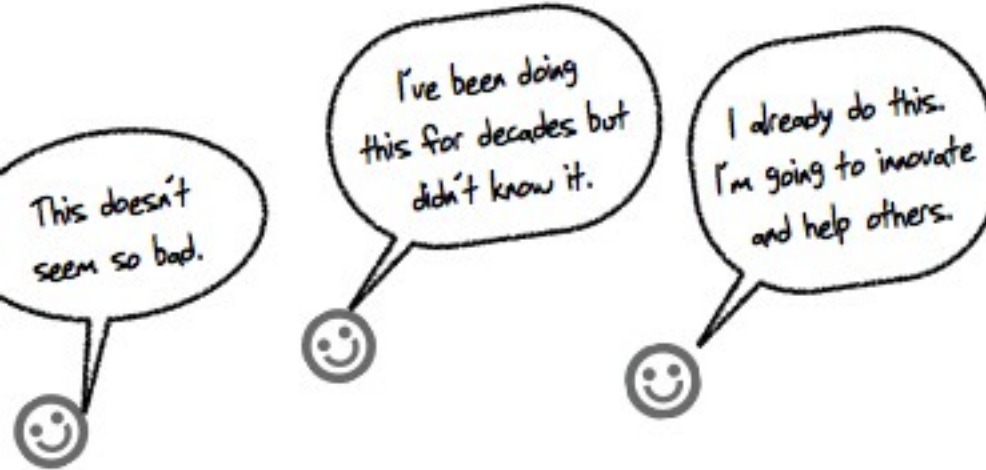
My goals for this talk...



My goals for this talk...



My goals for this talk...



3 essential questions about
flipped classrooms



Big ideas about
flipped classrooms



What is a flipped classroom



The Flipped Classroom

Students prepare to participate in class activities

BEFORE



Out of Class

created by Josh Walker

The Flipped Classroom

DURING



Students practice applying key concepts with feedback

In Class

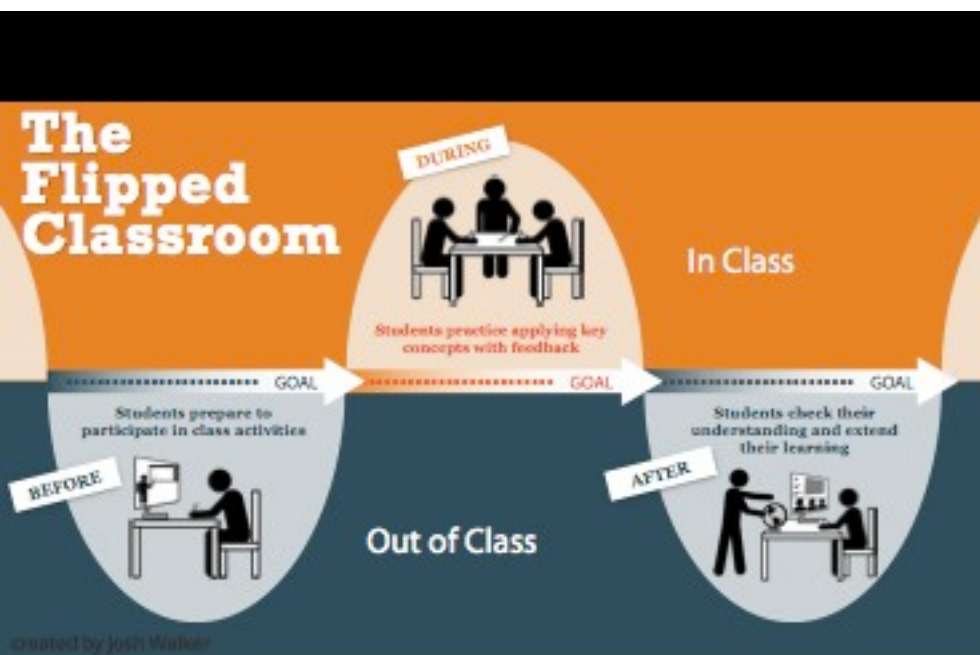
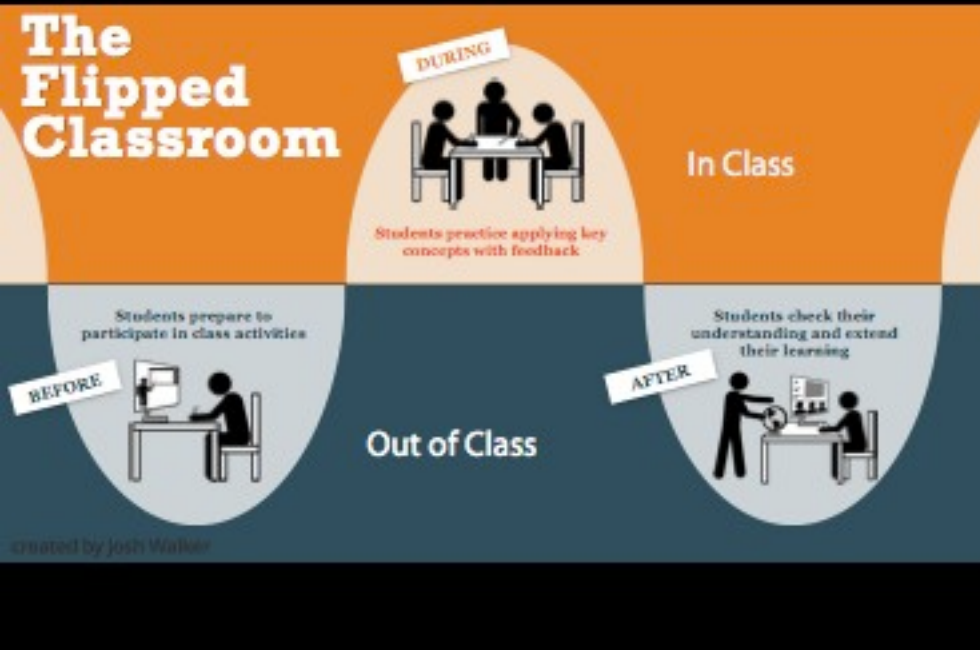
Students prepare to participate in class activities

BEFORE



Out of Class

created by Josh Walker



How have you already flipped your class?

- Have had students do a pre-assignment after watching a pre-recorded video
- Students are assigned readings, videos, internet sites, and quizzes before they attend the in-person session with me. During the in-person session, I ask students questions about the assigned learning materials.

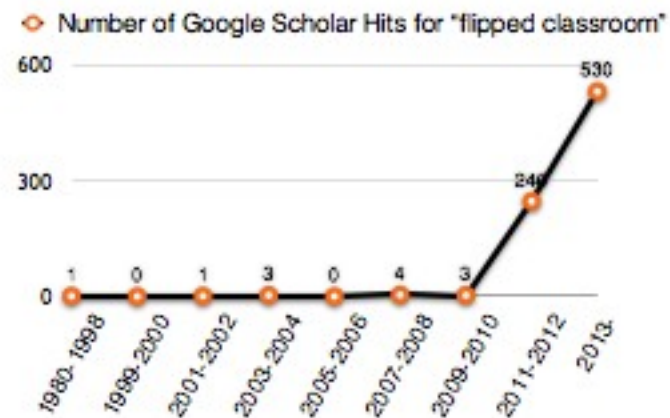
Myth 1: You must flip your entire class

► **Big idea:** A flipped classroom is an approach that can be implemented gradually or all at once.

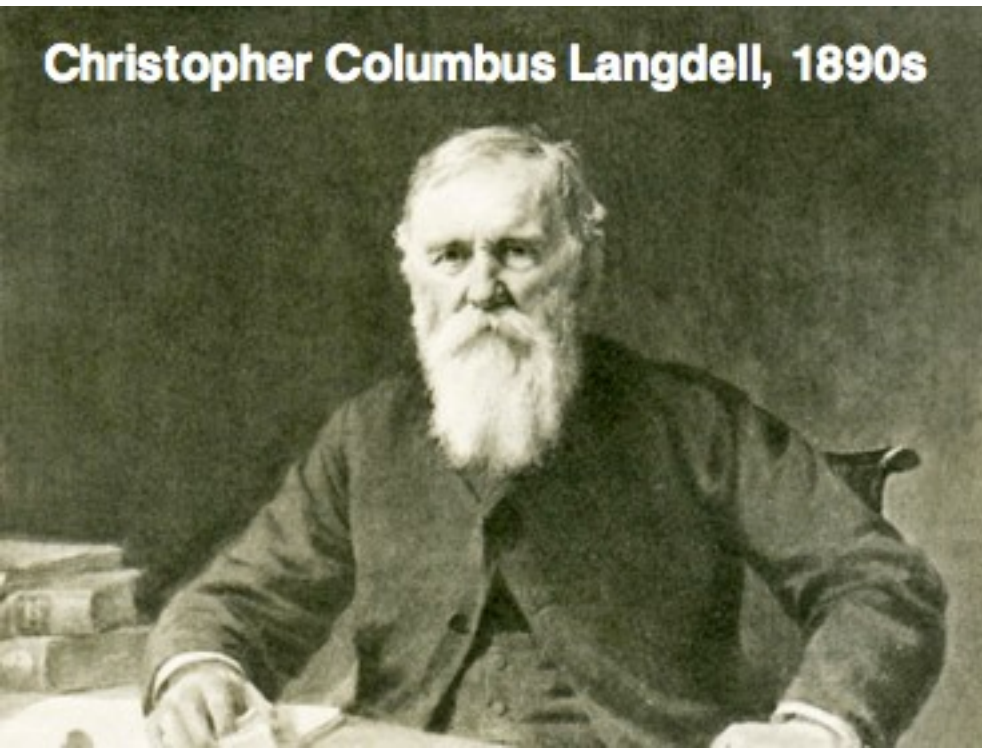
FLIP

- 1 concept
- 1 chapter
- 1 unit
- 1 lab
- 1 course
- 1 school

Myth 2: Flipped classrooms are the latest edutrend.



Christopher Columbus Langdell, 1890s



School at Athens, Antiquity

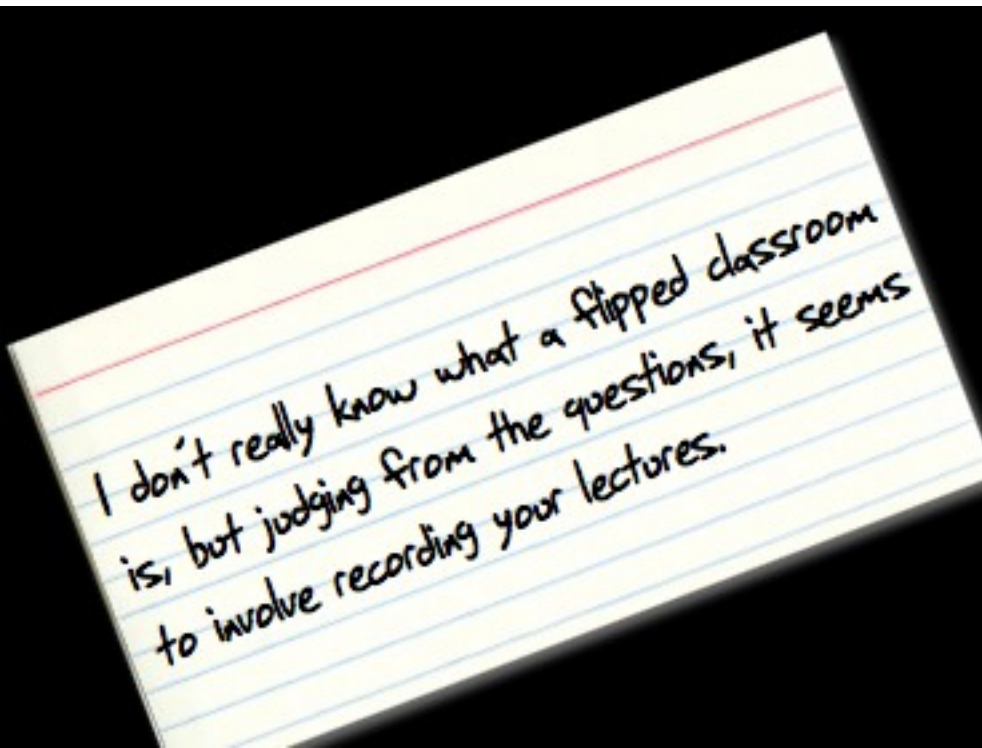


Myth 2: Flipped classrooms are the latest edutrend.

►Big idea: Flipped classrooms= new term, old idea.

- 1st modern flipped classroom developed in 1890s
- Eric Mazur, Peer Instruction 1990s
- Seminal publication in Economics 2000 Lage et al.
- Jonathan Bergmann and Aaron Sams, 2007.
- Larry Michaelson, Team Based Learning 1980s.

Myth 3: A flipped class replaces faculty with computers and videos.







Myth 3: A flipped class replaces faculty with computers and videos.

► **Big idea: Flipped classrooms are not about technology, they are about pedagogy.**

Main approach

1. lift coverage of some content out of the class
2. privilege content application in-class
3. find ways to motivate continued learning after class.

How could you flip your class without videos?

Why should I flip my classroom



Myth 4: Flipped classrooms are fads not tied to how people actually learn.

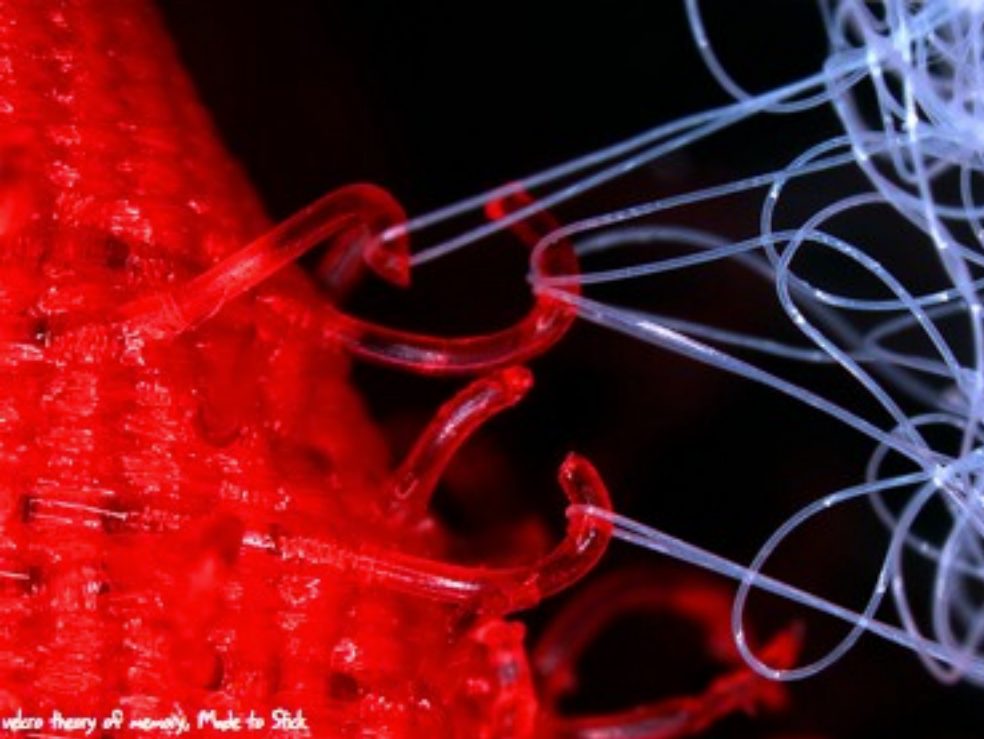
Study these letters, don't write them down.

J FKFB INAT OUP SNA SAI RS

Study these letters, don't write them down.

Study these letters, don't write them down.

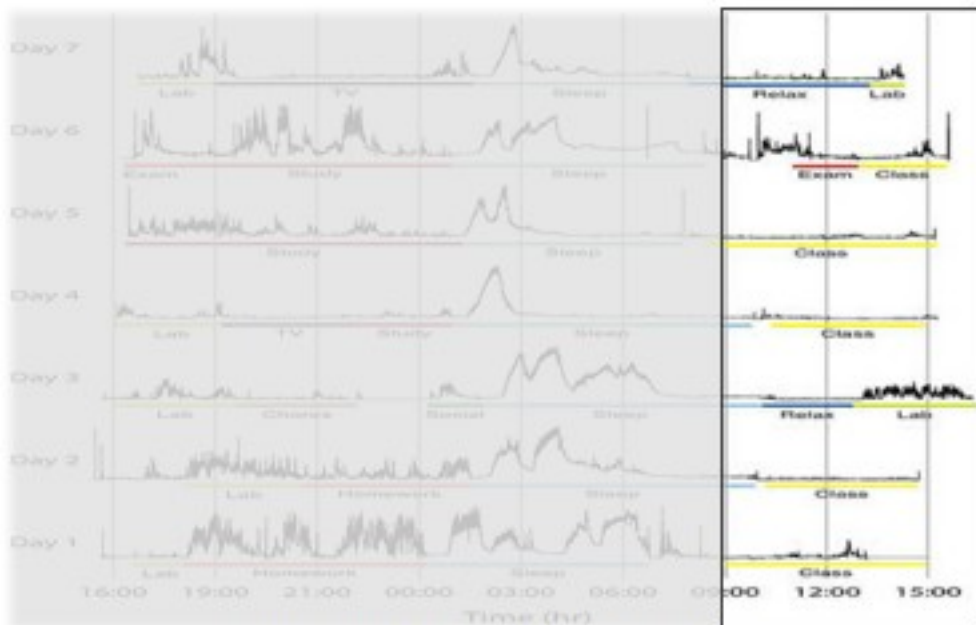
JFK FBI NATO UPS NASA IRS



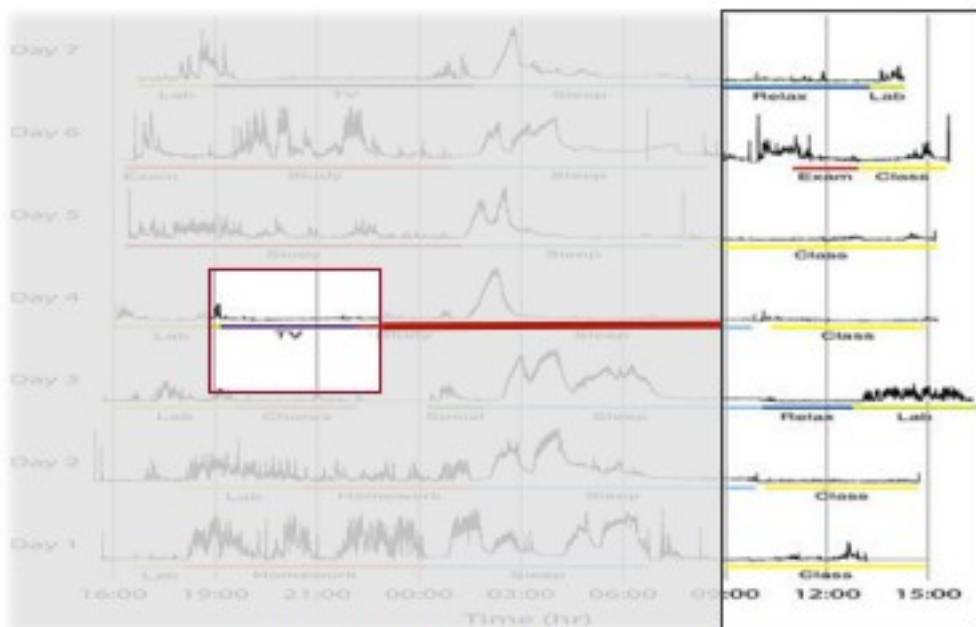
Bloom's Taxonomy

| Traditional Arrangement | | | | | | |
|-------------------------|----------|------------|--------------|---------|----------|--------|
| Instructional Design | In-class | | Out-of-class | | | |
| Bloom's Taxonomy | Remember | Understand | Apply | Analyze | Evaluate | Create |

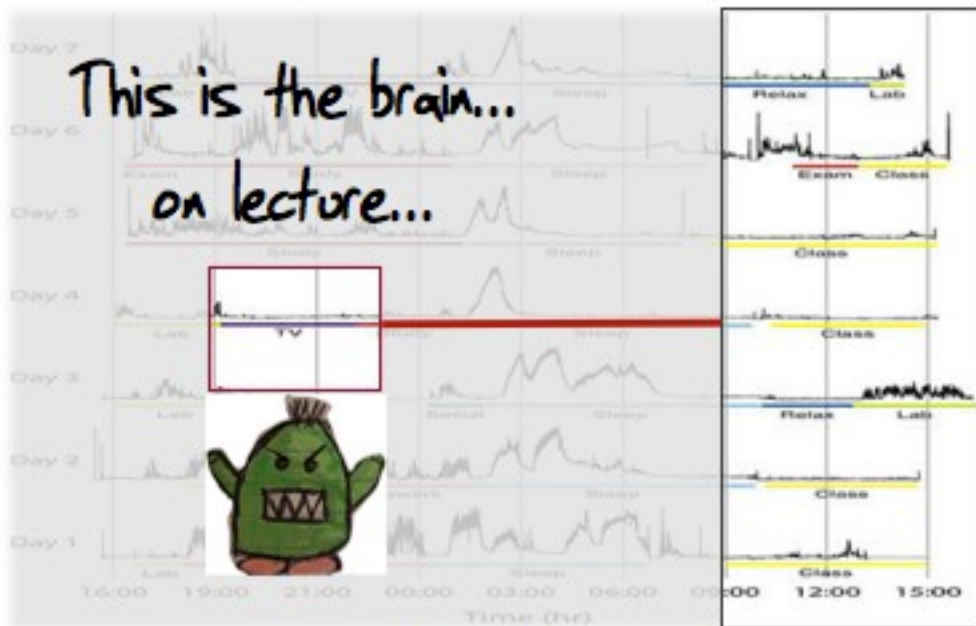
created by Josh Walker



IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, VOL. 57, NO. 5, MAY 2010



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Bloom's Taxonomy

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Bloom's Taxonomy

| Inverted "Flipped Classroom" Arrangement | | | | | | |
|--|--------------|------------|----------|---------|----------|--------|
| Instructional Design | Out-of-class | | In-class | | | |
| Bloom's Taxonomy | Remember | Understand | Apply | Analyze | Evaluate | Create |

created by Josh Walker

How to lecture on or off line: **Chunk it**

lecture

0 min

40 mins

lecture

0 min

40 mins

lecture

lecture

lecture

lecture

0

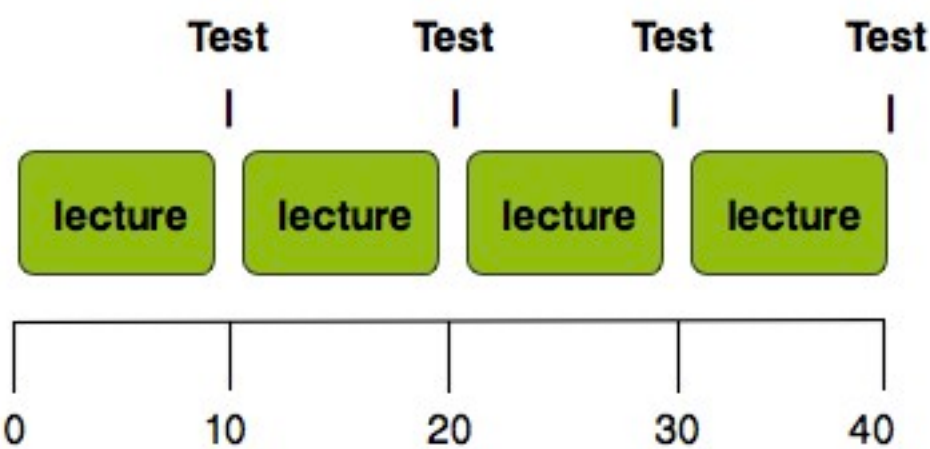
10

20

30

40

Chunking with Retrieval Practice



Myth 4: Flipped classrooms are fads not tied to how people actually learn.

►Big idea: Flipped classrooms leverage how people learn best.

Myth 5: Flipped classrooms are a cure all.

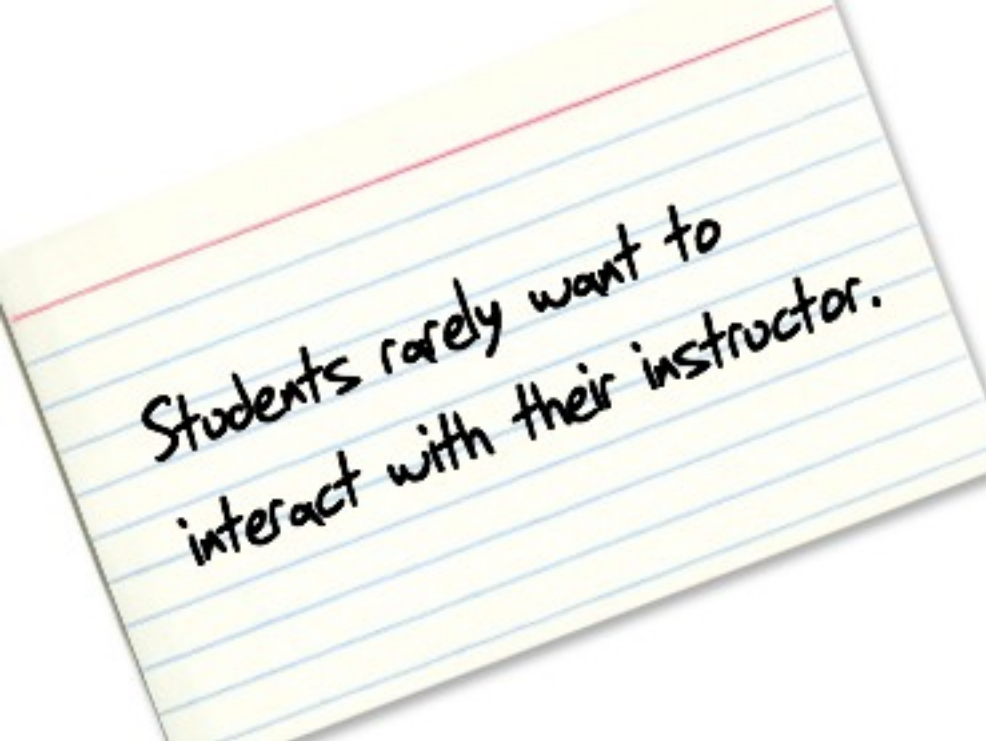
►Big idea: Flipped classrooms take time, effort, and iteration - but doesn't all good teaching?

Why should I flip if it is going to take time & energy I don't have & will take more work at first?

How do I flip my class



Myth 6: Students will love not having lecture in class.



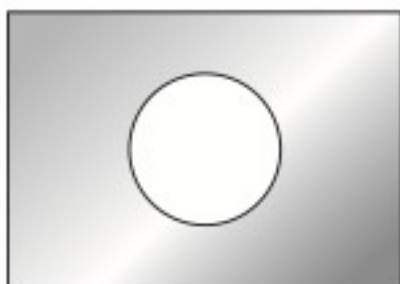
Almost all humans relish interacting
with a good problem.

Thermal Expansion



When metals heat up, they expand.

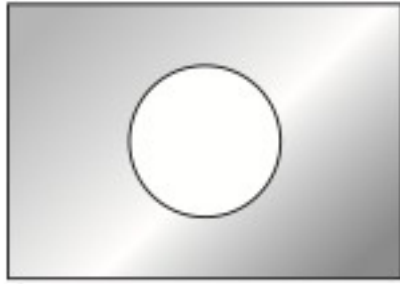
Consider a metal (aluminum) plate with a hole in it.



Consider a metal (aluminum) plate with a hole in it.

If you heat the plate uniformly what happens to diameter of hole?

- A. increases**
- B. stays the same**
- C. decreases**



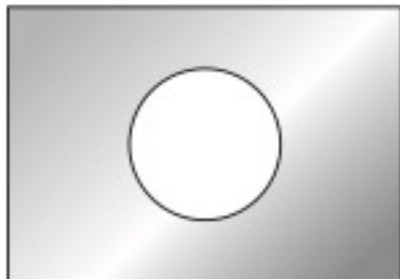
When metals heat up, they expand.

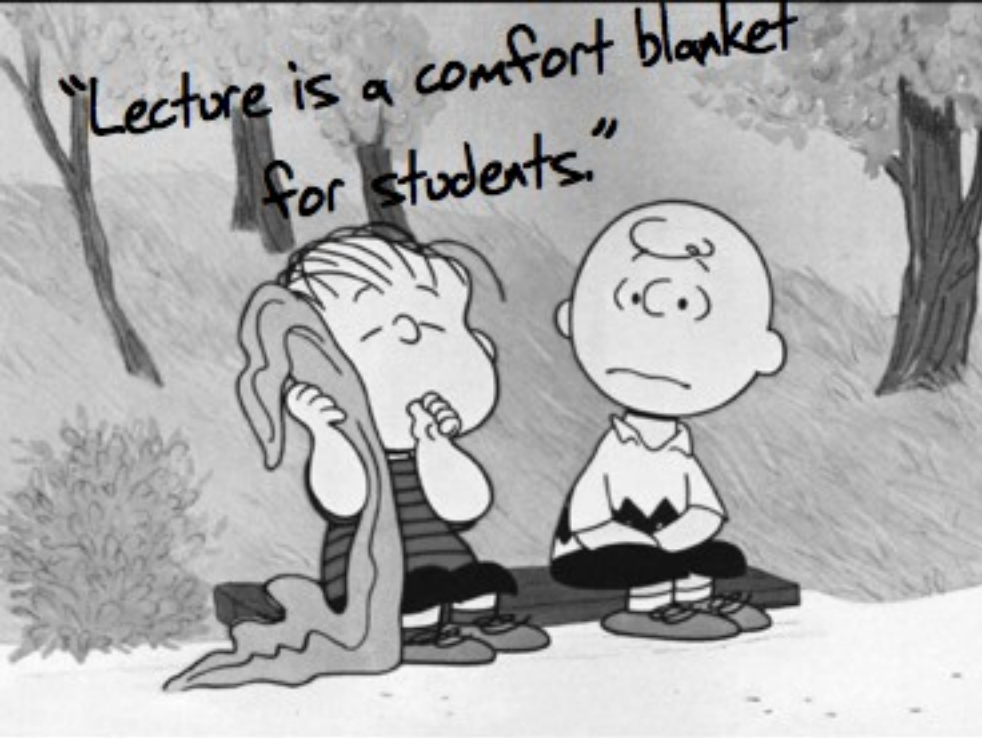
What happens when you heat metals up?

- a) they expand**
- b) they shrink**
- c) nothing**

If you heat the plate uniformly what happens to diameter of hole?

- A. increases**
- B. stays the same**
- C. decreases**





Myth 6: Students will love not having lecture in class.

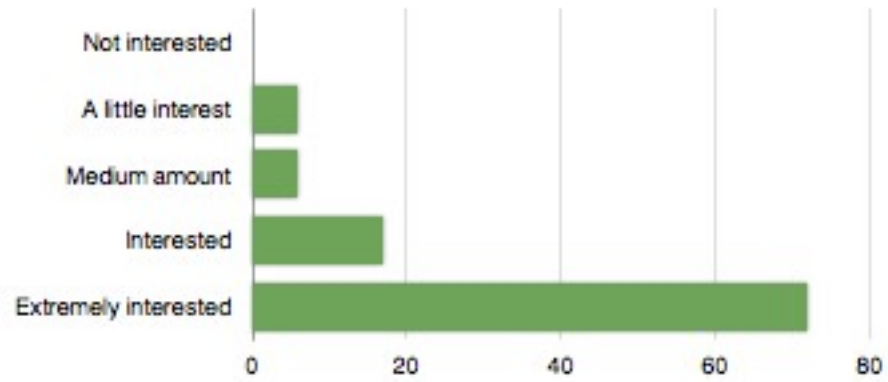
►Big idea: Lecture is a comfort blanket for students.

►Big idea: Humans relish problems at the Goldilocks range of desirable difficulty.

- Students may resist flipped learning
- Lecture a little every class period
- Don't call it a "flipped" classroom
- Don't call it an experiment
- Pose interesting problems in class

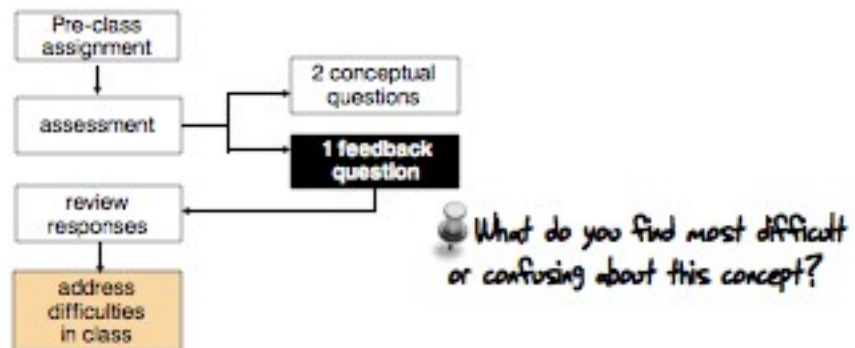
Myth 7: Students will not do pre-class work.

■ Interest in Hearing How to Get Students to Prepare Before Class





Just-in-Time Teaching



Myth 7: Students will not do pre-class work.

►Big idea: If you assess it, they will come.

Myth 8: There is one right way to flip a class.

►Big idea: There are many ways to flip a class, and no one right way.

- For some weeks, we provide students with a case ahead of time, and then spend class time either role playing or meeting with standardized patients
- I have done several lectures in which I have posted lecture notes and slides prior to the scheduled time, then spend the time discussing questions and answers to case based scenarios based on the pre-posted material.
- When we do our Cardiovascular Pharmacology Self-Directed Learning Exercise...the students have had initial exposure to the material in lecture, but have not had to think through all of the drugs presented in a single session before.

FLIP in 4 easy steps

| | |
|----------|--|
| F | Find a concept to flip |
| L | Lift coverage /first exposure out of class |
| I | Incentivize out of class work |
| P | Privilege application activities in class |

Inspired by Josh Walker, Center for Teaching and Learning UT Austin

How will you flip?

Big ideas about flipped classrooms

8

- | | |
|---|--|
| 1 | You can flip one concept or 10. |
| 2 | Flipped classrooms = new name, old concept. |
| 3 | Flipped classrooms are about pedagogy not technology. |
| 4 | Flipped classrooms align with how people learn best. |
| 5 | Flipping classrooms well takes time and effort. |
| 6 | Lecture is a comfort blanket for students, lecture a little. |
| 7 | If you assess pre-class work, most will do it. |
| 8 | There are many ways to flip a class and no one right way. |



brianna girlie @bripaigegirlie

33 mins

I hate school. lhateschool. I HATE school. I h8 school. I hate skool.
lh8skool. I. hate. school. Eye h8 skool. I HATE SCHOOL. **#ihateschool**

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Flipped Classrooms





Tyson_Awesome @tegrinse614

6 hrs

today I developed my own proof for **pythagorean's** theorem. woooo
yeah baby **#genius**

Expand



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PEOPLE

Eric Mazur

Acknowledgements



James Fraser

Ives Araujo

Cassandre Alvarado

Brian Lukoff

Jen Ebbeler

Carol Dweck

Dan Meyer

Nancy Duarte

Chip and Dan Heath



BOOKS

Flip Your Classroom

Slide:Doggy

Made to Stick

Why Students Don't Like School



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