

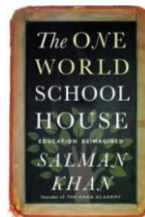
Are You Flipping Out or Flipping In?: The How's, Why's, and What's of the Flipped Classroom Model

Curtis J. Bonk, Professor
Indiana University
cjbonk@indiana.edu
<http://mypage.iu.edu/~cjbonk/>



Learning is More Flipped

One Man, One Computer, 10 Million Students:
How Khan Academy Is Reinventing Education,
Forbes, November 19, 2013, Michael Noer
<http://www.forbes.com/sites/michaelnoer/2013/11/02/one-man-one-computer-10-million-students-how-khan-academy-is-reinventing-education/>
The One World Schoolhouse (Twelve, Oct. 2, 2012)



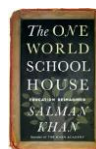
Salmon Khan (2012). The One World Schoolhouse

"The old classroom model simply doesn't fit our changing needs. It's a fundamentally passive way of learning, while the world requires more and more *active* processing of information."



Salmon Khan (2012). The One World Schoolhouse

He explains that if students have consumed learning content before class, "teachers can then carve out face time with individual students who are struggling; they can move away from rote lecturing and into the higher tasks of mentoring, inspiring, and providing perspective."



Reusable Khan

Lacking Teachers and Textbooks, India's Schools
Turn to Khan Academy to Survive, NY Times,
Anupama Chandrasekaran, Oct. 15, 2012
<http://india.blogs.nytimes.com/2012/10/15/lacking-teachers-and-textbooks-indian-schools-turn-to-khan-academy-to-survive/>

The New York Times | International Herald Tribune



Students at Sree Karpagavalli Vidhyalaya school in Chennai, Tamil Nadu, watching Khan Academy math videos.

The Flipped Classroom



The Flipped Classroom: Lectures at Home and Homework in class

(Video: 2:43)

<https://www.youtube.com/watch?v=U-ZA7eb74-g>



May 13, 2014 Exploring the Fringe: Flipping, Microcredentials, and MOOCs

Jeff Cobb and Celisa Steele, Tagoras

<http://www.tagoras.com/2014/05/13/flipped-learning-microcredentials-moocs/>

flipping *noun*
'fi-pin\

: learning strategy that offers preparatory or foundational content outside of the classroom and uses class time for active learning



March 12, 2014 The Flipped Learning Network

<http://www.flippedlearning.org/definition>

Definition of Flipped Learning

Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter.



What is Flipped Classroom?

- A model of learning that rearranges how time is spent both in and out of class to shift the ownership of learning from the educators to the students (The NMC horizon report, 2014).
- The Flipped Classroom inverts teaching methods, delivering instruction online outside of class and moving homework into the classroom.

- Students watch online lectures at home at their own pace, communicating with peers and teachers via online discussion.



Source: Demski, J. (2013), Illustration by Peter Hoey

Freddie Diaz-Batista, Flipped Learning February 14, 2014, E-learning Blog

<http://freddiediazbatista.com/main/>

Flipped VS Traditional

Flipped

Teacher instructs lesson at home (video / podcast / book/ website)

Students work in class.

- Deeper understanding of concepts, applications, and connections to content are made.
- Students receive support as needed.

Traditional

Teacher instructs

Students take notes

Students follow guided instruction

Teacher gives assessment

Students have homework

Digital distraction in the classroom

July 11, 2012 by Stephanie Chasteen, The Active Class

<http://theactiveclass.com/category/uncategorized/>



Digital distraction in the classroom

July 11, 2012 by Stephanie Chasteen, The Active Class
<http://theactiveclass.com/category/uncategorized/>

At home → In class



Students watch videos or screencasts

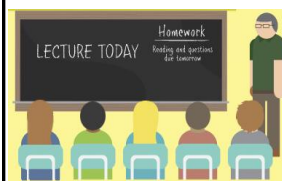


Instructor works with students on hands-on and face-to-face work
 "Guide on the Side"

Teacher's role

Traditional Classroom

Flipped Classroom



➡ **SAGE** in the stage



➡ **GUIDE** on the side

Source: Jeremy F. Strayer, Ohio State University, Flipped Class Conference 2011 (KNEWTON)

Flipping the Class, Penn State (3:23 video)

<https://sites.google.com/site/flippingclass/>



Flattened Classrooms and Learning Studios

Adjusting the Prescription: The School of Medicine overhauls its century-old educational approach.

Maura Singleton, February 2011, University of Virginia
http://uvamagazine.org/articles/adjusting_the_prescription/

Rx for Education

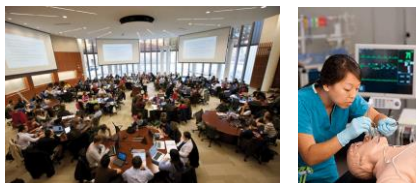
The traditional structure of medical education is undergoing a transformation from internal and external pressures alike. Old paradigms are giving way to fresher approaches.

IN	OUT
Applying knowledge	Regurgitating facts
Problem solving	Rote learning
Dialogue	Lecture
Facilitating	Telling
Critical thinking	Memorizing
Simulation	Observation
Teams	Sole practitioners
Hands on	Passive listening
Individualized learning	One-size-fits-all
Self-directed learning	Top-down learning

Flattened Classrooms and Learning Studios

Adjusting the Prescription: The School of Medicine overhauls its century-old educational approach.

Maura Singleton, February 2011, University of Virginia
http://uvamagazine.org/articles/adjusting_the_prescription/



The Learning Studio: First-year medical students work in teams in the learning studio, a radical departure from the lecture hall. "One of the goals of this whole model—of having students do a lot of the learning themselves rather than passively listening—is that they need to be lifelong learners," says Randolph Canterbury, senior associate dean for education. (called the "flattened classroom")

April 30, 2014

Flipped learning skepticism: Can students really learn on their own?, Robert Talbert, Chronicle of Higher Education

<http://chronicle.com/blogs/work/castingdoubts/2014/04/30/flipped-learning-skeptism-can-students-really-learn-on-their-own/>

"Unfortunately this is a common misconception about the flipped classroom: That it's "learning on your own" without *any* guidance or support from an instructor... A misconception about the flipped classroom itself, that it is a pedagogy of abandonment, where students are loaded up with books and videos but then left to fend for themselves."

Instructor as Counselor



Instructor as Consultant



Instructor as Curator



Instructor as Concierge



March 12, 2014

The Flipped Learning Network

<http://www.flippedlearning.org/definition>

April 1, 2014

Toward a common definition of "flipped learning", Robert Talbert, Chronicle of HE

<http://chronicle.com/blognetwork/castingoutlines/2014/04/01/toward-a-common-definition-of-flipped-learning/>

Four pillars:

Flexible environment (various modes of learning)

Learning culture (student-centered inquiry)

Intentional content (direct instruction b4 class)

Professional educator (reflective and accessible; collaborates and perfects one's craft)

Flexible Environment

F.1

☐ I establish spaces and time frames that permit students to interact and reflect on their learning as needed.

F.2

☐ I continually observe and monitor students to make adjustments as appropriate.

F.3

☐ I provide students with different ways to learn content and demonstrate mastery.

Learning Culture

- | | |
|------------|---|
| L.1 | <input type="checkbox"/> I give students opportunities to engage in meaningful activities without the teacher being central. |
| L.2 | <input type="checkbox"/> I scaffold these activities and make them accessible to all students through differentiation and feedback. |

Audience Polling Q#1: How get learners to do the work before class?

- Model it
- Points awarded
- Test on it, email back 2-3 answers
- Make it an expected part of the community
- What else?

Audience Polling Q#2: How else motivate to flip?

- Grade their prework
- Inspire
- Share the purpose, rationale, objectives
- Use it
- Bring back former students for testimonials
- Build on it (not a one-off activity)

6 Expert Tips for Flipping

1. Use existing technology to ease faculty and students into a flipped mindset.
2. Be up front with your expectations.
3. Step aside and allow students to learn from each other.
4. Assess students' understanding of pre-class assignments to make the best use of class time.
5. Set a specific target for the flip.
6. Build assessments that complement the flipped model.

Source: Jennifer Demski, Campus Technology, 23 January 2013

May 13, 2014

Exploring the Fringe: Flipping, Microcredentials, and MOOCs

Jeff Cobb and Celisa Steele, Tagoras
<http://www.tagoras.com/2014/05/13/flipped-learning-microcredentials-moocs/>

May Require:

- More time and effort to prepare.
- Resource investments.
- Prepared learners.
- A different instructional philosophy.
- Active participation.

May 13, 2014

Exploring the Fringe: Flipping, Microcredentials, and MOOCs

Jeff Cobb and Celisa Steele, Tagoras
<http://www.tagoras.com/2014/05/13/flipped-learning-microcredentials-moocs/>

Class time spent:

- Problem solving activities;
- Case studies;
- Facilitated discussion;
- Other.

Freddie Diaz-Batista, Flipped Learning, February 14, 2014, E-learning Blog

<http://freddiediazbatista.com/main/>

"One of the big mistakes we made when we pioneered this model is that we focused too much on video. We now like to use the term "learning object" when we talk about the flipped classroom. A learning object can include videos, but it also can be resources such as online simulations, books, and periodicals."

May 13, 2014 Exploring the Fringe: Flipping, Microcredentials, and MOOCs

Jeff Cobb and Celisa Steele, Tagoras

<http://www.tagoras.com/2014/05/13/flipped-learning-microcredentials-moocs/>

Flipped Content Includes:

- Video captured from conferences.
- Webinar recordings.
- Brief audio or video interviews.
- Screen recordings.
- Various publications.



The Flipped Classroom Enables Personalized Learning Microsoft Educator Network

<http://www.pit-network.com/HotTopics/personalizedlearning/flipped-classroom-enables-personalized-learning#comments>

Aaron Sams and John Bergmann's book *Flip Your Class: Reach Every Student in Every Class Every Day; "15 Reasons To Flip Your Classroom"* speak to personalized learning:

- Helps struggling students
- Increases instructor-learner interaction
- Allows for different learning rates or speeds



Teaching for Tomorrow: Flipped Learning (2:52)

https://www.youtube.com/watch?v=4a7NbUIr_iQ

The Flipped Classroom (2:14)

<https://www.youtube.com/watch?v=2H4RkudFzlc>



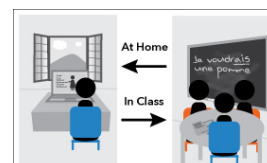
"Flipping", TechSmith's e-learning trainers series part 5 (Video: 2:54)

<https://www.youtube.com/watch?v=BX58cMORhB0&feature=relmfu>



Why is flipping significant?

1. Students can watch, rewind, and fast-forward.
2. Stop and reflect.
3. Devote class time to application of concepts.
4. Better opportunity to detect errors in thinking.
5. Encourage social interaction and peer support.



Digital distraction in the classroom

July 11, 2012 by Stephanie Chasteen, The Active Class
<http://theactiveclass.com/category/uncategorized/>

"I no longer go to work to 'perform' five times a day; instead, I look forward to going [to class] and interacting with my students all day," says high school teacher Jonathan Bergmann...In the flipped class, instructors create video podcasts for students to watch — either of lectures, or solving a problem, or demonstrations — and post those for the students to watch at home.



Happening in College Too!

The Washington Post, Nick Anderson, March 11, 2013

http://www.washingtonpost.com/local/education/more-classroom-flipping-in-colleges/2013/03/11/0c42d758-8a2f-11e2-9849-3013c3081e_story.html

More on classroom flipping in colleges



View Photo Gallery — Flipping the classroom: University of Virginia professor Philip Zetkew is teaching a course called "The Modern World: Global History Since 1900." It's a massive open online course, which offers the world a free sample of education from the elite public university. The public is able to register for the course and watch the online lectures for free, and follow up in the classroom with watch his lectures on their own time. Timing up previous classroom hours for in-depth discussion. This technique is known as "flipping" the classroom.

Flipping The Large Enrollment Psychology Classroom - NC State

(Video: 3:45)

<https://www.youtube.com/watch?v=QTDQaaVWEzI>



Flipping The Large Enrollment Psychology Classroom - NC State...
 2,585 views
 Published on May 11, 2013
 Dr. Steven Trosky & Dr. George McClellan use the FLIP method.

Ohio State Chemistry Flips the Classroom

(Video: 1:10)

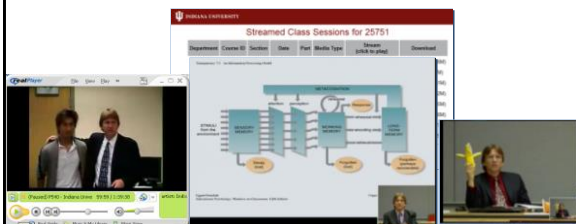
https://www.youtube.com/watch?v=6FA_hCmfsP8



Ohio State Chemistry Flips the Classroom
 2,585 views
 Published on May 11, 2013
 Dr. George McClellan & Dr. Steven Trosky use the FLIP method.

My First Attempt to Flip

- Ask students to watch weekly lectures.
- Reflect on key concepts.
- Instructors helps moderate it.



Flipped Classroom Research



February 5, 2014

Lessons Learned from 1,125 Flipped Classrooms

It's been 40 years since the Army first experimented with competency-based learning, Peter D. Lenn

<https://www.esdsworld.com/nr/2014-02-05-lessons-learned-from-1-125-flipped-classrooms>

The solution they decided to test was what we now call the "flipped classroom". After initial successes, the Army opened 1125 learning centers in every combat arms battalion worldwide. They also converted **Advanced Individual Training schools** to the flipped model. **The result was the army was able to train over 500,000 soldiers for highly technical jobs with 85% reaching A-level competence in 40% less time than the prior conventional courses.**



February 12, 2014

DODDS-Europe teachers find success with 'flipped classroom' approach

Stars and Stripes, Jennifer H. Swan
KAISERSLAUTERN, Germany

<http://www.atripes.com/news/dodds-europe-teachers-find-success-with-flipped-classroom-approach-1.266254>

Tried PBL and Cooperative Learning but students not coming to class prepared.

After the first year of flipping math...

- Traditional Approach: 77 D's and F's out of 265 students (2010-2011).
- Flipped: 29 D's and F's (2011-2012.)



Influences on cooperation, innovation and task orientation

Strayer, J. F. (2012). How learning in an inverted classroom influences cooperation, innovation and task orientation. *Learning Environments Research*, 15(2), 171-193.

Compares learning environments of an inverted introductory statistics and traditional introductory statistics classes at the same university.

- **Less satisfied** with the structure of flipped classroom than the traditional one,
- **More comfortable and open to cooperative learning** and innovative teaching techniques.
- The **stability and connectedness** of classroom learning communities **higher**.

How to embed inquiry and design projects

Warter-Perez, N., & Dong, J. (2012). Flipping the classroom: How to embed inquiry and design projects into a digital engineering lecture. In *Proceedings of the 2012 ASEE PSW Section Conference*.

Faculty at California State University flipped one introduction to Digital Engineering course with the goal:

1. Increasing quality of learning for collaborative PBL.
2. Address the prevalence of passive learning in engineering classroom and limited professor-student interaction in the large-scale classroom.

Findings: Flipped was effective in general, especially:

1. Improving understanding of course materials
2. Developing design skills.

Inverted classroom model in engineering statistics

Papadopoulos, C., & Roman, A. S. (2010). Implementing an inverted classroom model in engineering statistics: Initial results. *American Society for Engineering Statistics*.

Flipped engineering statistics. Findings:

1. Students **more cooperative** each other
2. **Progressed faster** thru learning materials;
3. **Greater depth of understanding**.
4. The student **test scores higher** than those in the traditional learning environment.

May 21, 2014

Missouri State U Improves Learning Outcomes With Flipped Course, Leila Meyer

<http://campustechnology.com/Articles/2014/05/21/Missouri-State-U-Improves-Learning-Outcomes-with-Flipped-Classroom.aspx?p=1>

Introductory Psychology (changed fall 2012).

Old Version = 30 percent improvement.

Flipped Class = 76 percent improvement

DFW rate from 24 percent to 18 percent

"and this is a much more rigorous course now" said Hudson. "When you think about it in terms of dollars and retention, that's pretty significant."

May 21, 2014 MyPsychLab from Pearson



April 21, 2014

Microflipping:

a Modest Twist on the 'Flipped' Classroom

Chronicle of Higher Education, Sam Buemi

<http://chronicle.com/article/Microflipping-a-Modest-Twist/145993/>

Microflipping includes:

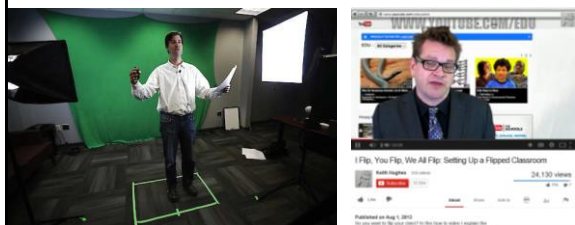
- Lecture of 5 minutes maximum;
- Clickers, mobile apps, videos, activities, conversation, etc.;
- Constant balance between lecture and activity is by creating a script that outlines what content and activities I will be covering during class, and which technological tools I'll be using.

How to Create...?

I Flip, You Flip, We All Flip: Setting Up a Flipped Classroom

(Video: 24:09)

<https://www.youtube.com/watch?v=ZRvmjjeZ9CA>



How to Create...?

Creating videos for flipped learning, eSchool News

<http://www.eschoolnews.com/2013/09/09/educators-video-flipped-5086/2/2pk=123&atc=11013>

Joe Zisk: <http://teacheronline.us/screencapture/>

• Screencasting software for iPads includes:

- Replay Note (\$4.99), Explain Everything (\$2.99), Screencomp (free), and ShowMe (free).

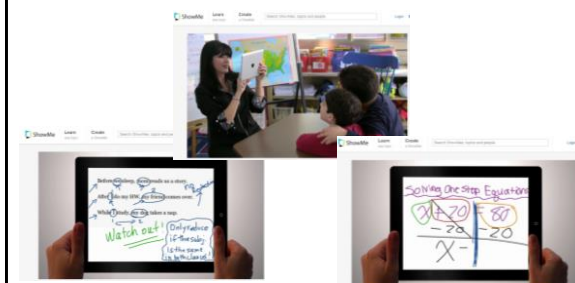
• Screencasting software for a laptop or desktop includes:

- Jing (free), Snagit (\$29.95), Screencast-o-matic (free), Camtasia Studio (\$179), Camtasia for Mac (\$75 for a single educator license), and aTube Catcher (free).



Lessons on iPad (i.e., Flip the class)

(e.g., ShowMe: <http://www.showme.com/>)



April 21, 2014 (6:52 video)

Multimedia Assignments: Not Just for Film

Majors Anymore (student and instructor produced videos)

Chronicle of Higher Education, Danny Ledonne

http://chronicle.com/article/Multimedia-Assignments-Not-Just-for-Film/145939/?cid=at&utm_source=at&utm_medium=en



