

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

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THE FLIPPED
CLASSROOM
Turning the traditional
classroom model on its head

What is Flipped Classroom?

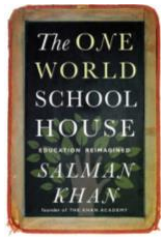


"This isn't what I imagined when they said 'flipped classroom'!"

graphite by commonsense Join us at www.graphite.org

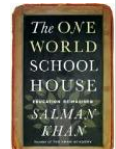
Learning is More Flipped

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)



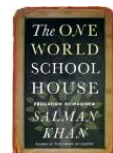
Salmon Khan (2012). The One World Schoolhouse

"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



by viaAcademies

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.



2013 and 2014

10 Pros And Cons Of A Flipped Classroom, Mike Acedo, TeachThought
The Teacher's Guide To Flipped Classrooms, Edudemic

<http://www.teachthought.com/learning/blended-flipped-learning/10-pros-cons-flipped-classroom/>
<http://www.edudemic.com/guides/flipped-classrooms-guide/>

Pros:

1. Greater student control
2. Work at own pace
3. Learner-centered--engaged
4. Collaborative projects
5. Enhanced discussion
6. Increase access to content
7. Can share content ideas
8. Learning efficiencies
9. Pedagogical opportunities
10. Personalized attention



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

LiveTiles

<https://www.livetiles.nyc/education-flipped-classroom-vs-traditional-classroom/>

The Flipped Classroom

THE TRADITIONAL CLASSROOM
Teacher's role: Sage on stage



THE FLIPPED CLASSROOM
Teacher's role: guide on the side



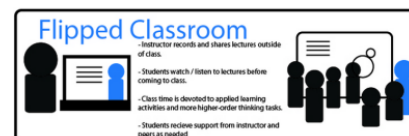
SOURCE: FIVEHIVE

DESIGN: NEWS GRAPHIC

June 2, 2014

University of Wollongong Moodle Lab Wendy Meyers

<http://www.uowblogs.com/moodlelab/tag/flipped-classroom/>



2016-2017**"Flipping" a class****University of Texas at Austin**

<https://facultyinnovate.utexas.edu/teaching/strategies/flipping> (video: :57)
<https://facultyinnovate.utexas.edu/sites/default/files/what-is-flipped-comparison-table-120516.pdf>

**December 21, 2012****Flipping the Classroom: Explained**

<https://www.youtube.com/watch?v=IQWvc6qhTds> (video: 1:48)

**September 28, 2015****The Flipped Classroom Model**

https://www.youtube.com/watch?v=qdKzSq_t8k8 (video: 3:00)

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

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

Flipped VS Traditional**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/>

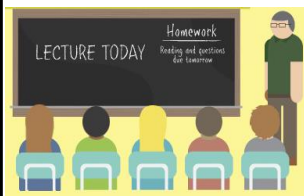
At home → **In class**

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

Students watch videos or screencasts from instructor to get oriented to content

Teacher's role

Traditional Classroom



➡ **SAGE** in the stage

Flipped Classroom



➡ **GUIDE** on the side

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

The Teacher's Guide To Flipped Classrooms, Edudemic

<http://www.edudemic.com/guides/flipped-classrooms-guide/>



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	Simulation
Teams	Memorizing
Hands on	Observation
Individualized learning	Sole practitioners
Self-directed learning	Passive listening
	One-size-fits-all
	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/blognetwork/castingdoubts/2014/04/30/flipped-learning-skepticism-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 Role Changes



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/blogs/network/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	<input type="checkbox"/> I establish spaces and time frames that permit students to interact and reflect on their learning as needed.
F.2	<input type="checkbox"/> I continually observe and monitor students to make adjustments as appropriate.
F.3	<input type="checkbox"/> 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.gilt-network.com/HotTopics/personalizedlearning/flipped-classroom-enables-personalized-learning#comments>

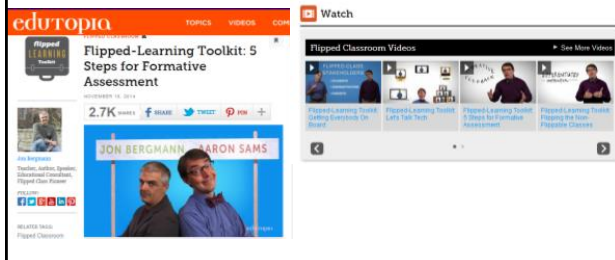
Aaron Sams and John Bergmann's book *Flip Your Class: Reach Every Student in Every Class Every Day*; "15 Reasons To Flip Your Classroom" speak to personalized learning:

- 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>

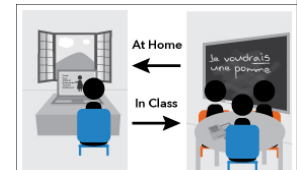
Flipped-Learning Toolkit: 5 Steps for Formative Assessment Edutopia, GLEF

<https://www.edutopia.org/blog/five-steps-formative-assessment-jon-bergmann> (1:40)
<https://www.edutopia.org/blog/flipping-the-non-flippable-classes-jon-bergmann> (2:51)
<https://www.edutopia.org/blogs/tag/flipped-classroom>



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.



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

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



Flipping The Large Enrollment Psychology Classroom - NC State (Video: 3:45)

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



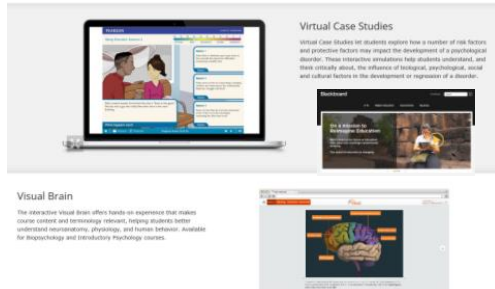
Ohio State Chemistry Flips the Classroom

(Video: 1:10)

https://www.youtube.com/watch?v=6FA_hCmfsp8



May 21, 2014 MyPsychLab from Pearson



Flipping Via MOOCs! 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/POSTWP-2013-03-11_story.html

More on classroom flipping in colleges



View Photo Gallery — Flipping the classroom: University of Virginia professor Philip Zimbardo is teaching a course called "The Prisoner's Dilemma: 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 his online lectures for free, and Zimbardo's 10th students can watch his lectures on their own time, freeing up precious classroom hours for in-depth discussion. This technique is known as "flipping" the classroom.

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.edsurge.com/n/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.stripes.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."

October 13, 2016

Sherry Turkle Says There's a Wrong Way to Flip a Classroom

Jeffrey Young, EdSurge

<https://www.edsurge.com/news/2016-10-13-sherry-turkle-says-there-s-a-wrong-way-to-flip-a-classroom>

Sherry Turkle Says There's a Wrong Way to Flip a Classroom



WHY FLIPPED CLASSROOMS WORK (AND HOW TECHNOLOGY CAN HELP)



EDUCAUSE

7 Things You Should Know About... Flipped Classrooms

<https://net.educause.edu/ir/library/pdf/ELI7081.pdf>

What is it?
The flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. Short video lectures are viewed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions. The video lecture is often seen as the key ingredient in the flipped approach, such lectures being either created by the instructor and posted online or selected from an online repository. While a prerecorded lecture could certainly be a podcast or other audio format, the ease with which video can be accessed and consumed makes it the preferred choice. It is a choice that has allowed several

Scenario
For the past two weeks, Kyle has been taking a flipped course in designing food gardens. Before he attends each class, he watches videos of short lectures recorded or recommended by his instructor. Each lecture comes with a brief online quiz that offers him immediate feedback on whether he missed any essential points. Today as he enters class, his professor at the whiteboard has the whiteboard filled with

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-008/21?ast=123&astc=11015>

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

• Screencasting software for iPads includes:

- Replay Note (\$4.99), Explain Everything (\$2.99), Screenchomp (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).



A PEDAGOGY TOOL

May 18, 2014

Harvard goes all in for online courses The stress is on production values, props, and, yes, scholarship

The Boston Globe, Marcella Bombardieri

<https://www.bostonglobe.com/metro/2014/05/17/behind-harvard-exploration-online-classes-flurry-cameras-action-by-05/15/2014?from=story&story=story>



Laurel Thatcher Ulrich, a Harvard historian, was filmed in the HarvardX studio for her class, "Tangible Things."

April 21, 2014 (6:52 video)

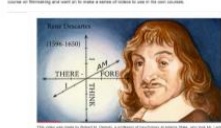
Multimedia Assignments: Not Just for Film Majors Anymore (student and instructor produced videos)

Chronicle of Higher Education, Danny Ledonne

http://chronicle.com/article/Multimedia-Assignments-Not-145939/7cid=at&utm_source=at&utm_medium=en



The video was made by Robert M. Boyle, a professor of psychology at Robert Boyle, who used to lecture on the history of chemistry and physics in his own classroom.



The video was made by Robert M. Boyle, a professor of psychology at Robert Boyle, who used to lecture on the history of chemistry and physics in his own classroom.

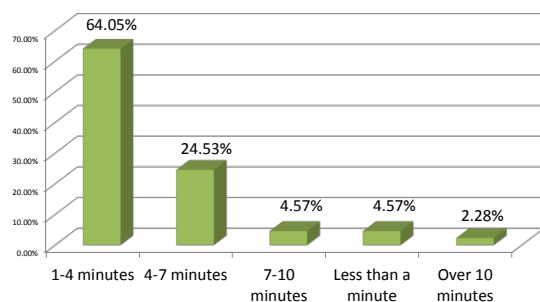
Part 2:

The Rise of Shared Online Video, the Fall of Traditional Learning

Dr. Curtis J. Bonk, cjbonk@indiana.edu
Professor, Indiana University



How long is an ideal YouTube video? (Lin, Bonk, et al., 2010)



Why Use Video?

1. David Ausubel (1978) argued that knowledge was hierarchically organized.
2. New learning concepts and ideas to be subsumed under or anchored within prior learning experiences (i.e., meaningful info must be related to what already know).
3. Advance Organizers: Per Ausubel, we must provide a context, richer, deeper learning.



Why Use Video?

4. Dual coding theory (learning information verbally and visually is more richly stored): Alan Paivio.
5. Anchored instruction and macrocontexts: John Bransford and colleagues.
6. Multimedia theory: Richard Mayer.

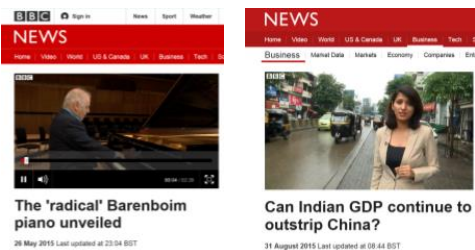


Anchored Instruction through Short Online Videos



Short Educational Videos:

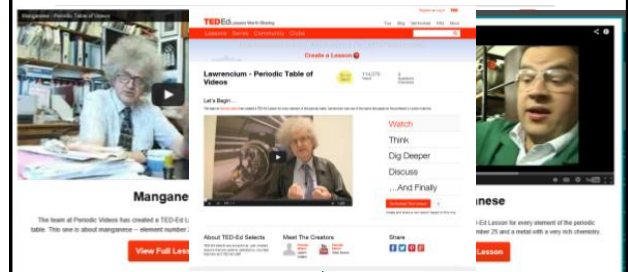
CNN, BBC, TED, TED-Ed, ForATV
 BBC One-Minute World News (August 31, 2015)
<http://www.bbc.com/news/business-34105708>



Videos with Test Questions (e.g., TEDEd)

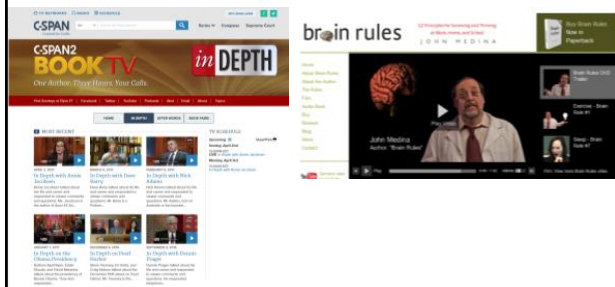
(Lessons about every single element on the periodic table)

http://ed.ted.com/periodic-table-video?source=TED-Ed+Subscribers&utm_campaign=926254&id=2013_09_219_19_2013&utm_medium=email&utm_term=0_1a6cc048-92610546d-46761201



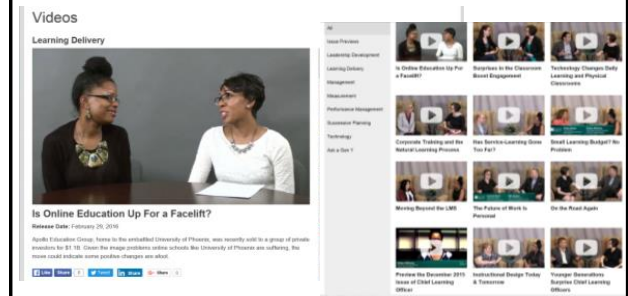
April 2, 2017 BookTV on C-Span2 (author interviews)

<https://www.c-span.org/series/?inDepth>

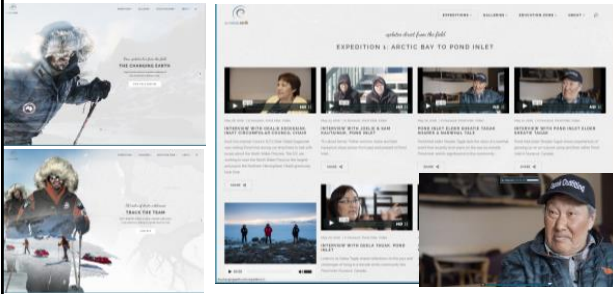


March 7, 2016 Brief Info Videos, Chief Learning Officer

http://www.domeia.com/media/videos/play/263?utm_source=8666&utm_medium=email&utm_campaign=CLO%20Brief%20Info_videos&utm_source=newletter&utm_medium=email&utm_content=8666&utm_campaign=2016%20Brief%20Info_videos&utm_term=0_1a6cc048-92610546d-46761201



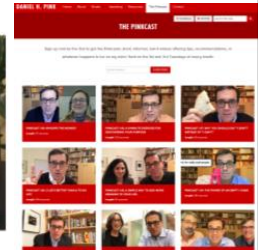
January 20, 2017
The Changing Earth (Aaron Doering)
<http://thechangingearth.com/>



April 2, 2017
Weekly 1 minute Video Updates
 (e.g., Pinkcasts from Daniel Pink)
<http://www.danpink.com/pinkcast/>

Pinkcast 2.

Advice from Adam Grant: Look for "disagreeable givers"



Which of these video sharing sites do you use?

1. BBC News Video and Audio
2. CNN.com Video
3. MSNBC.com
4. Google Video, Yahoo Video
5. Current TV
6. For a TV
7. MIT World
8. YouTube, YouTube Edu
9. TeacherTube
10. Link TV, Explore, Global Pulse, Latin Pulse
11. Howcast, Big Think, WonderHowTo, Explor.TV, NASA TV, ClipChef, TV Lesson, BookTV, Edutopia videos, MonkeySee, doFlick, the Research Channel, iVideosong



There's so much video that...



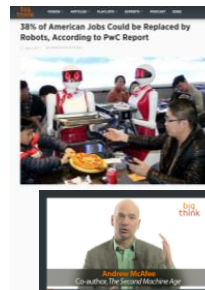
Big Think (April 2, 2017)
 (short topical video interviews and blogs posts from famous people)

<http://bigthink.com/>
<https://www.youtube.com/watch?v=TAYhj-gekqw>
<http://bigthink.com/laurie-vazquez/the-sooner-you-expose-a-baby-to-a-second-language-the-smarter-theyll-be>



Big Think (April 1, 2017)
 (short topical video interviews and blogs posts from famous people)

<http://bigthink.com/>
<http://bigthink.com/david-ryan-polgar/38-of-american-jobs-could-be-replaced-by-robots-according-to-pwc-report>
<http://bigthink.com/paul-ratner/elon-musk-creates-new-company-to-merge-human-brains-with-computers>

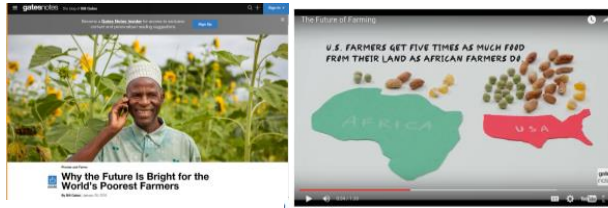


January 20, 2016

Embedded Videos

Why the Future Is Bright for the World's Poorest Farmers, Gates Notes, the blog of Bill Gates

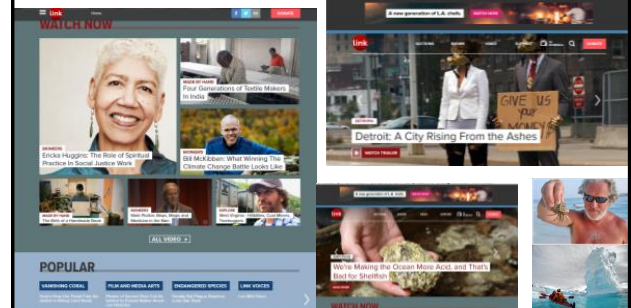
https://www.gatesnotes.com/Development/The-Future-of-Farming?WT.mc_id=01_20_2016_20_FutureofFarming_BG-LI_&WT.src=BGLI



Link TV (April 2, 2017)

(Television without Borders)

<https://www.linktv.org/>



March 10, 2016

Watch SXSWedu Live, Connie Yowell

http://sxsxedu.com/livestream?campaign=Edu+2016&utm_source=ch_email&utm_medium=email&utm_content=27144469&_hsenc=p2ANqtz--ag6UZY68lpYacareN6mVx6A3KCR5O3U8YQKAYpZvTnnchxw2_PmMpcjia19V7z1-01hyCRDPYEAR-x6HwQB_hml=27144469



February 16, 2017

Woolly Mammoth Could Be 'De-Extinct' In 2 Years, Scientist Says

Hillary Hanson, CNN (video: 3:22)

[http://www.huffingtonpost.com/entry/woolly-mammoth-elephant_us_58a62fa7e4b037d17d264477?hpid=hp_hp-top-table-main-mammoth_6pm&hpt=hp_hp-top-table-main-mammoth_6pm](http://www.huffingtonpost.com/entry/woolly-mammoth-elephant_us_58a62fa7e4b037d17d264477?hpid=hp_hp-top-table-main-mammoth_6pm&hpt=hp_hp-top-table-main-mammoth_6pm&hpt=hp_hp-top-table-main-mammoth_6pm)

Woolly Mammoth Could Be 'De-Extinct' In 2 Years, Scientist Says

The plan is to create a woolly mammoth-elephant hybrid.

By Hillary Hanson



August 1, 2017
Going All In on Personalized Learning
Paul Fain, Inside Higher Ed

<https://www.insidehighered.com/news/2017/08/01/national-university-precision-education-initiative>

March 20, 2017

National University Precision Education Initiative (3:04)

<https://www.youtube.com/watch?v=sfUvFD5VYs>

Going All In on Personalized Learning

A \$20 million project from National U seeks to combine adaptive courseware, predictive analytics and complete serving adult students.

By Paul Fain // August 1, 2017



March 29, 2017
Every industrial robot takes up to 6 jobs, study finds

Steve Goldstein, MarketWatch

<http://www.marketwatch.com/story/over-6-million-jobs-at-risk-from-robots-new-study-finds-2017-03-29>

Video: 1:46 <http://curtbonk.com/futureandroids.html>

Video: .49-1:12: <http://curtbonk.com/futureandroids2.html>

Video: .01 to .49: <http://curtbonk.com/futureandroids3.html>

Video.01-.25: <http://curtbonk.com/futureandroids4.html>

Every industrial robot takes up to 6 jobs, study finds

March 29, 2017 10:00 am ET



August 3, 2017

See the exquisite fossil that revealed the colors of a giant armored nodosaur
Ben Gaurino, The Washington Post

https://www.washingtonpost.com/news/science/wp/2017/08/03/see-the-exquisite-fossil-that-revealed-the-colors-of-a-giant-armored-nodosaur/?utm_term=.d5e8dc6c978f

Video (2:33): <http://curtbonk.com/dinosours.html>

Video: 01-20: <http://curtbonk.com/dinosours2.html>

Video: .47 to 2:26: <http://curtbonk.com/dinosours3.html>

Speaking of Science

See the exquisite fossil that revealed the colors of a giant armored nodosaur

By Ben Gaurino August 3, 2017



Discuss Videos

(e.g., Grockit Answers and Vialogues;
<https://vialogues.com/>)



Collaborative Video Annotations and Discussions (Craig Howard, IU)

<http://scholarworks.iu.edu/journals/index.php/ijdl/article/view/853/912>



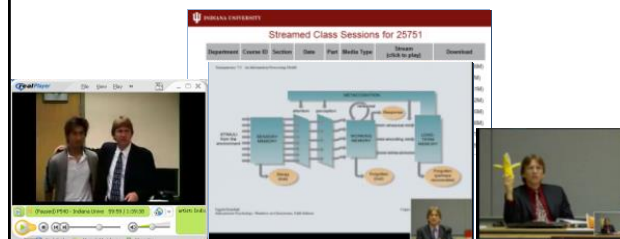
Next Steps for you...? And Next Steps for me...



Want to Repeat this Talk on Flipping

Bonk in HD: <https://www.youtube.com/watch?v=g4p2FAdoMfu> (20:16)
Bonk in Regular: <https://www.youtube.com/watch?v=V2LeFfywSPM> (20:16)

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



Slides at: TrainingShare.com

Papers: PublicationShare.com

**Free book: <http://tec-variety.com/>
cjbonk@indiana.edu**

**Questions, Comments, Share Ideas
(Will Work, might work, won't work)**

