The Perfect E-Storm: Emerging Technologies, Enormous Demand, and Erased Budgets

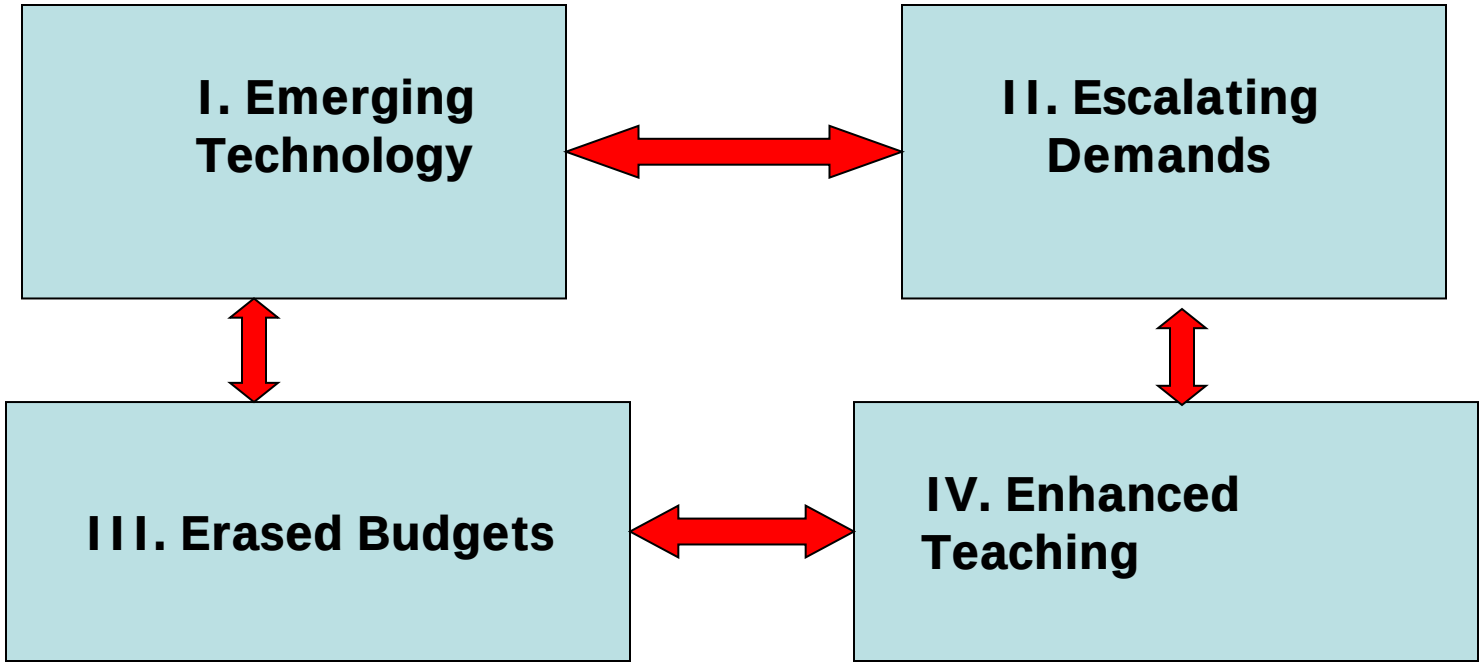
Dr. Curtis J. Bonk

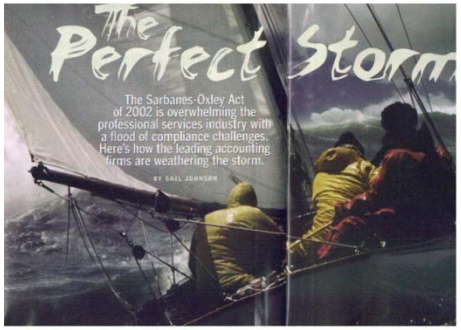
Professor, Indiana University

http://mypage.iu.edu/~cjbonk/

cjbonk@indiana.edu

Four Storms Are Approaching!

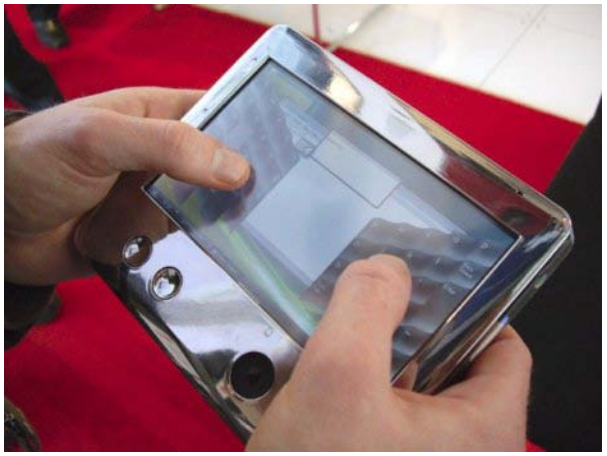




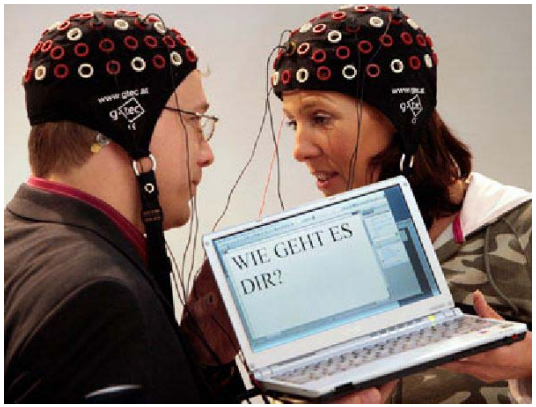
Storm 1. Emerging (“Hot”) Learning Technologies (Volcanos)

Will we become increasingly mobile learners?

Of course, there will always be smaller and cheaper devices…



1. New interfaces are coming!



Jeff Han on TED Talks

2. Social Networking Gaming
(e.g., Farmville and gaming addictions)

3. Internet Enabled Devices (e.g., Oregon Scientific Smartglobe)

4. Shared Online Video (e.g., Link TV: Global Link of World Educators (GLOWE))

More Shared Online Video (e.g., Edutopia, TED Conference Videos)

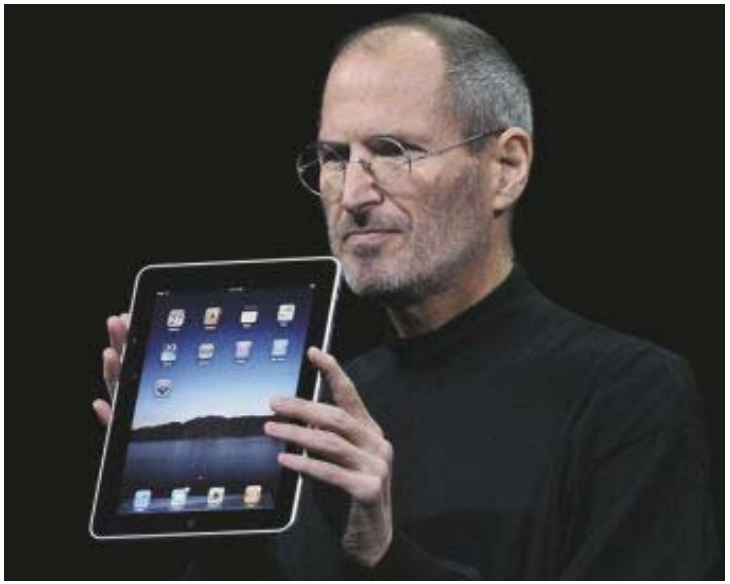
5. Individual Produced Videos
(e.g., African School Dream in Current TV)

6. Continual Live Streaming (e.g., Zoo Animals on Demand)

7. Simulations

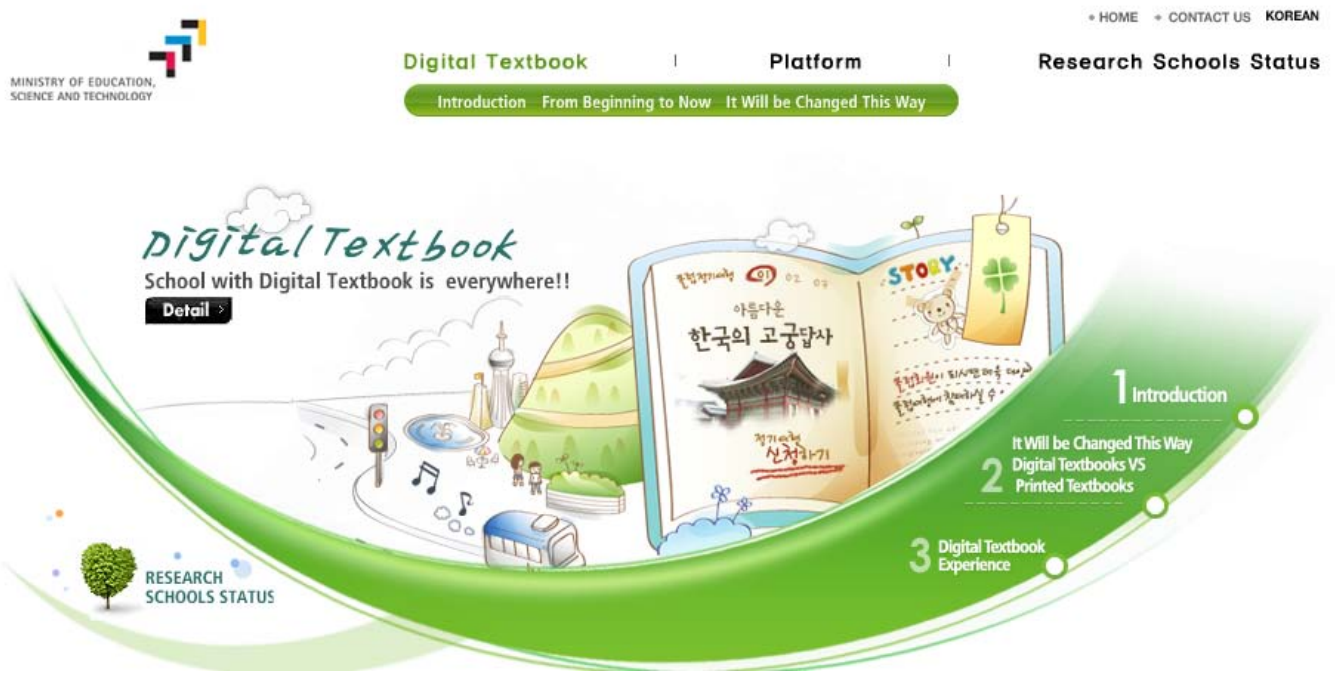
(e.g., Virtual Astronaut from WisdomTools

8. e-Book Readers

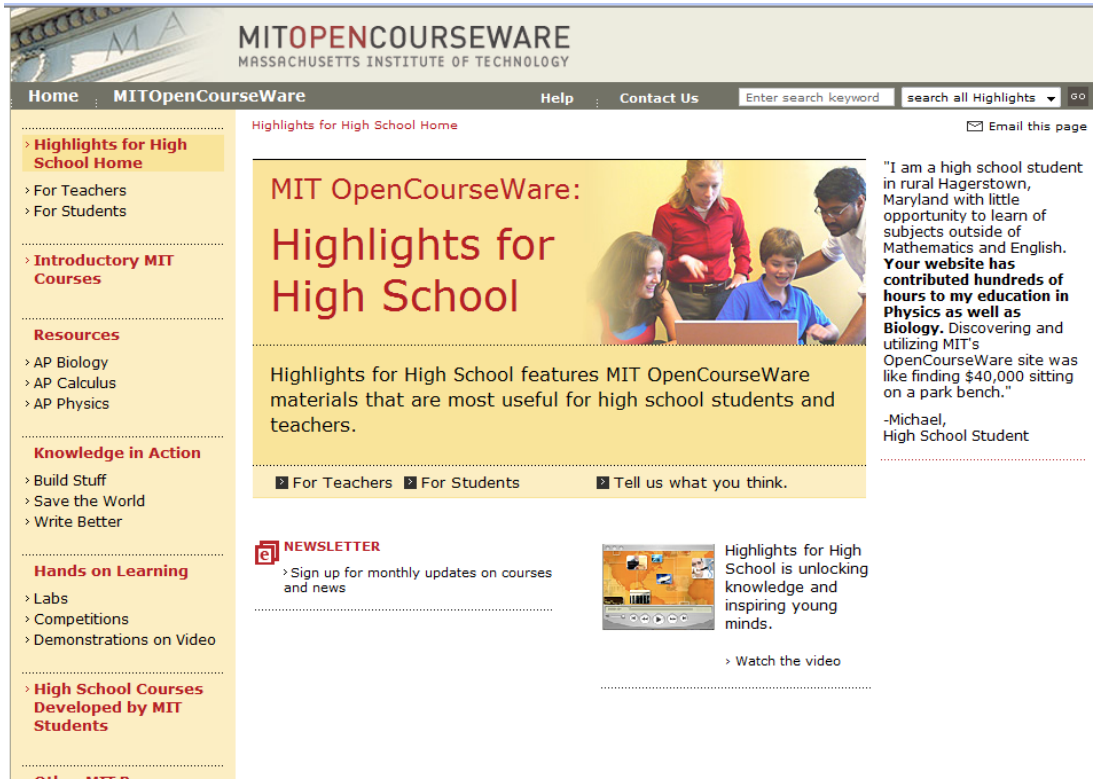


Are Textbooks History? Digital Textbook in Korea

dictionary, email and forums, games, simulations, hyperlinks, multimedia, authoring, data search, study aids, evaluation, etc. (112 schools as of 2009; free for all schools by 2013)



9. OpenCourseWare (e.g., MIT OCW Highlights for High School)

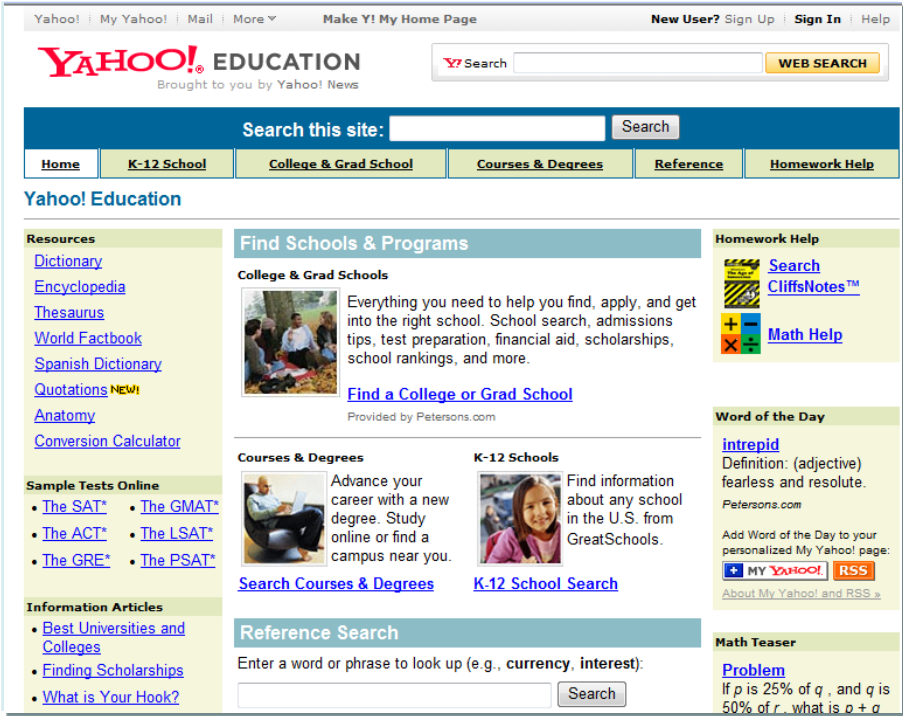


10. Open Educational Resources (e.g., Curriki, free K-12 curriculum resources)

Connexions: Dec 2009, 1.6m unique users, 4 million page views, 72 million hits, More than 1m users, 200 countries

National Repository of Online Courses (NROC)

11. Online Referenceware



12. Online Reading Programs (See free-Reading.net)

USA TODAY

Home | News | Travel | Money | Sports | Life | Tech

News » Education

Free online materials could save schools billions

Updated 52d ago | Comments 15 | Recommend 36

E-mail | Save | Print | Reprints & Permissions | RSS

Enlarge Wireless Generation handout

By Greg Toppo, USA TODAY

Mixx it

Other ways to share:

Digg

del.icio.us

Newsvine

Reddit

Facebook

What's this?

Since March, Dixon Deutsch and his students have been quietly experimenting with a little website that could one day rock the foundation of how schools do business.

A K-2 teacher at Achievement First Bushwick Elementary Charter School in Brooklyn, N.Y., Deutsch, 28, has been using Free-Reading.net, a reading instruction program that allows him to download, copy and share lessons with colleagues.

He can visit the website and comment on what works and what doesn't. He can modify lessons to suit his students' needs and post the modifications online: Think of a cross between a first-grade reading workbook and Wikipedia, the popular online encyclopedia written and edited by

Teachers can go to the Free-Reading website to

13. Class Web Sites (e.g., Microsoft Office Live, Google Sites, Pageflakes)

Google sites

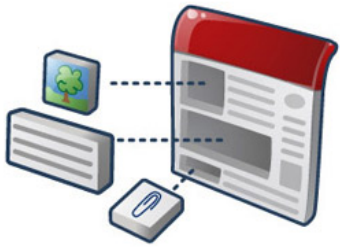
Thinking of creating a website?

Google Sites is a free and easy way to create and share webpages. Learn more.

Create
rich web pages easily

Collect
all your info in one place

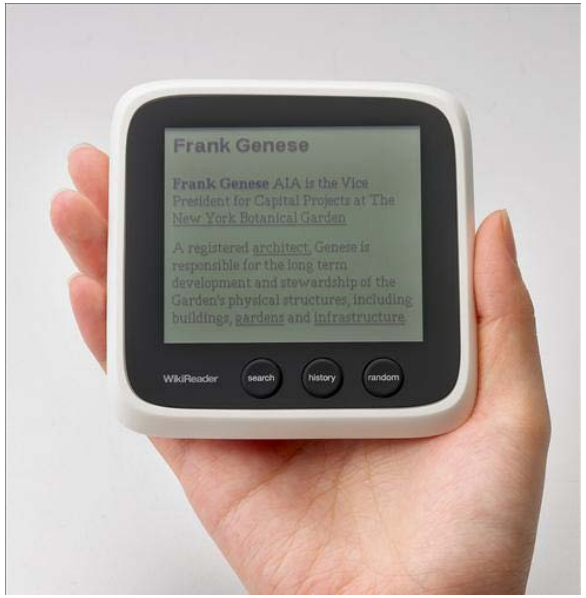
Control
who can view and edit



New! Create a site from dozens of pre-built templates

14. Mobile Learning (e.g., Smartphones

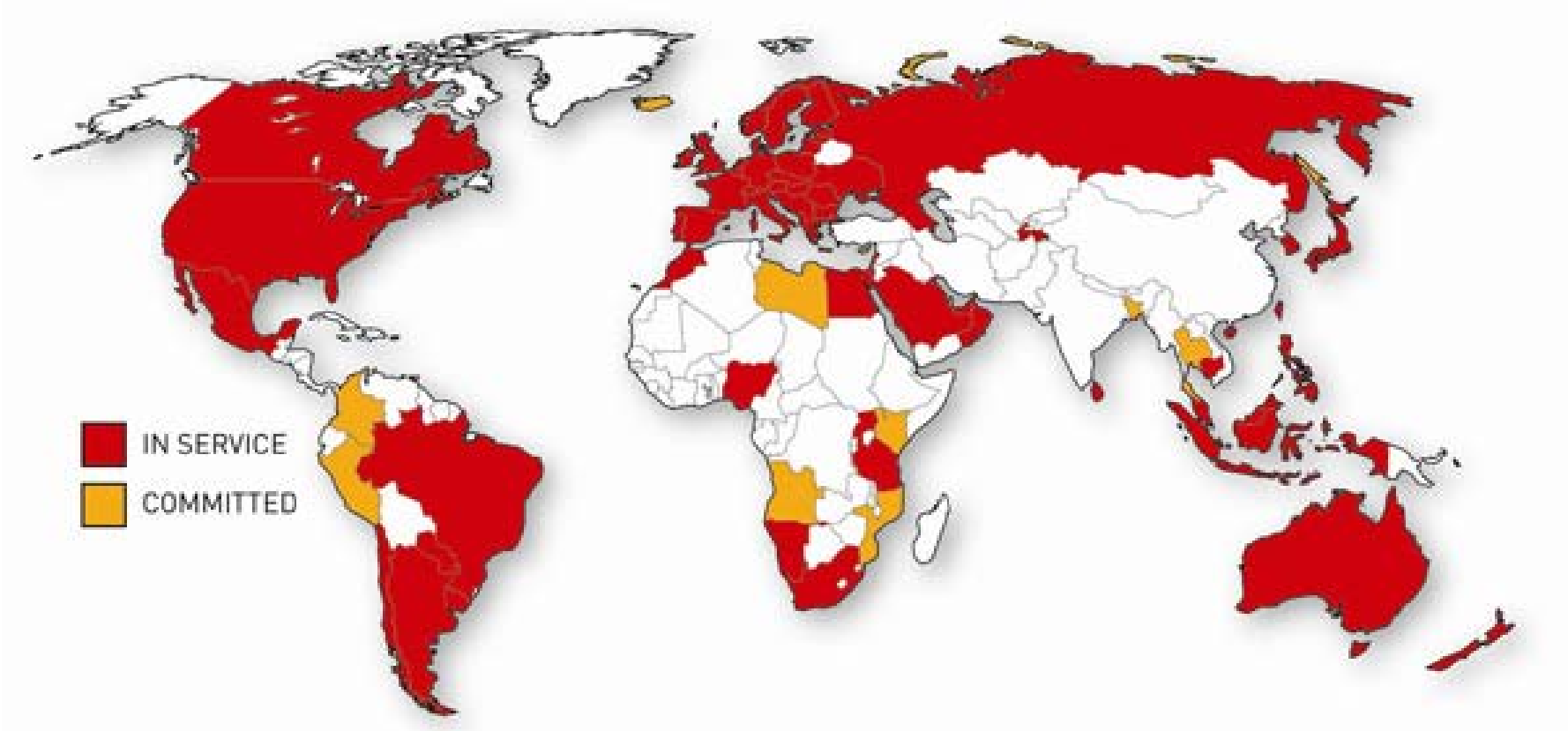
Text Messaging



WikiReader: Updating can be a pain.

Mobile Internet

(source: Dr. Paul Kim, Stanford)



“A” is for App, Anya Kamenetz, Fast Company, April 2010

Seeds of Empowerment, India, Paul Kim, Stanford

15. Inexpensive Laptops and Tablet Computers

LAPTOP
MOBILE SOLUTIONS FOR BUSINESS & LIFE

TOSHIBA
Leading Innovation >>>
" Very Nice La

OLPC, Marvell Join Forces, Announce sub-$100 Tablet by December 2010

May 27th, 2010 by Mike Prospero

4 retweet Share

Is the dream of a $100 laptop finally coming to fruition? One Laptop Per Child and Marvell today announced a partnership to develop the next generation of laptops for children in developing nations. The nonprofit OLPC said that by using Marvell's Moby platform, the two would be able to produce a reference design by the end of 2010, two years ahead of OLPC's original goal.

The new device, known as the XO 3.0, could cost as little as $75, said OLPC founder Nicholas Negroponte in an interview. In exchange for helping OLPC create a system for the education market, Marvell will have a blank slate, so to speak, that it will be able to easily customize and sell to other companies looking to get into the tablet market, said Weili Dai, the founder, VP and GM of Consumer and Computing Business Unit of Marvell, in an interview with LAPTOP.

"We're trying to create a tool where we can offer a complete pizza to someone," said Ed McNierney, the CTO of OLPC. "They'll say, 'Can you take off the mushrooms and pepperoni?' and we can get a product out to them much more quickly."

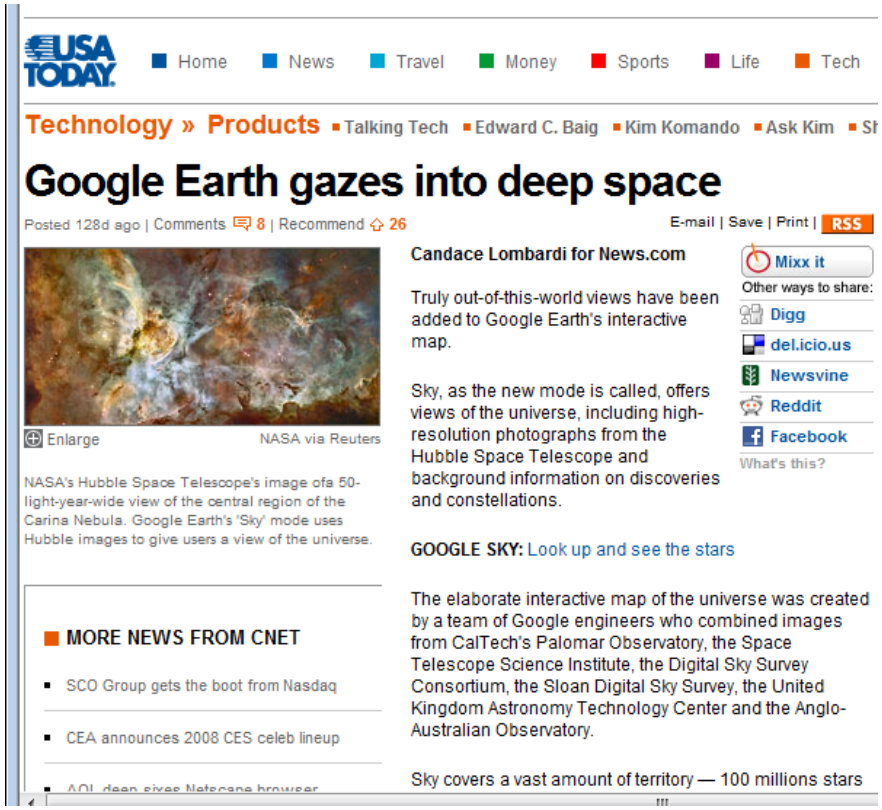
The 10-inch tablet will use an Armada 610 processor, 1080p encoding, Flash support, and will be able to act as a Wi-Fi hotspot for up to 8 users. Initially, the dual-mode display will be glass, but OLPC is looking to use plastic in the future. OLPC hopes that by switching to the tablet format and the new processor, it can reduce power consumption by half, to less than two watts, which will enable children to recharge the device without needing an outlet.

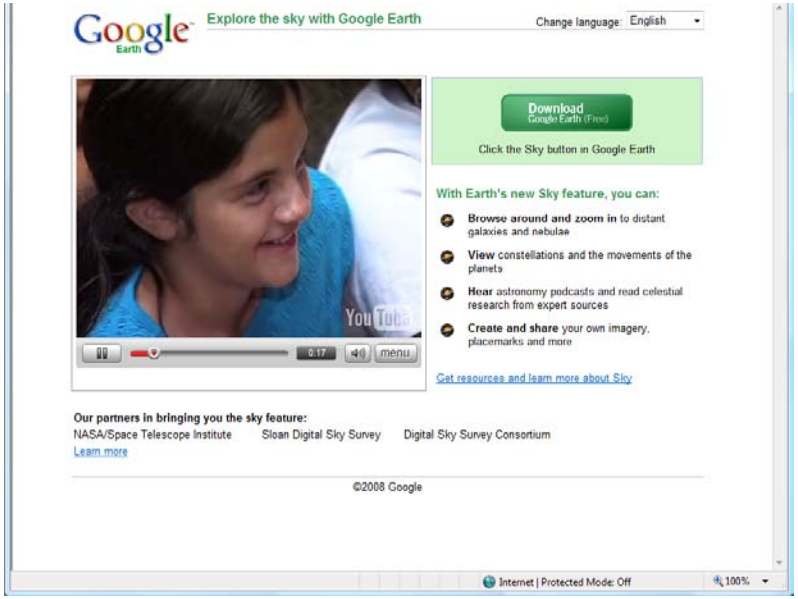
McNierney said that several factors would help bring the cost down to below $100. Moving from a traditional notebook format to a tablet will reduce the number of parts needed to actually make the notebook. "One of the most expensive mechanical pieces in our current laptop is the hinge for the display," he said. "We currently have 118 different SKU units for different keyboards and different configurations around the world. Going from the device we have right now to a tablet means fewer parts, smaller parts, a smaller device, and a lower overall system cost."

Secondly, said McNierney, if consumer-focused companies start licensing the design, then OLPC and Marvell can achieve

16. Google Sky

http://earth.google.com/sky/index.html





Poll: Bonk's Web Addiction Questionnaire

1. Who has 2 or more mobile phones with Internet access?
2. Who has 2 or more laptop computers with wireless connections?
3. Who is on email in the morning? At noon? Who does it at night?
4. Who suffers from nervous tension when you cannot get on email?
5. Who is on the Web right now?

On to Storm 2…
A Blizzard of Escalating Learner Demands

Letter from Bill Gates about online learning (January, 2010)

2010 Annual Letter from Bill Gates: Online Learning

Students working in a computer lab (New York, New York, 2009).

The foundation has made a few grants to drive online learning, but we are just at the start of this work. So far technology has hardly changed formal education at all. But a lot of people, including me, think this is the next place where the Internet will surprise people in how it can improve things—especially in combination with face-to-face learning. With the escalating costs of education, an advance here would be very timely.

Most of us have had a teacher whose lectures made a subject seem fascinating even though we didn't expect that it would be. If you are going to take the time to listen to a lecture, you should hear it from the very best. Now that finding and watching videos is a standard part of the Internet experience, we can put great teachers' lectures online.

2010 Annual Letter from Bill Gates

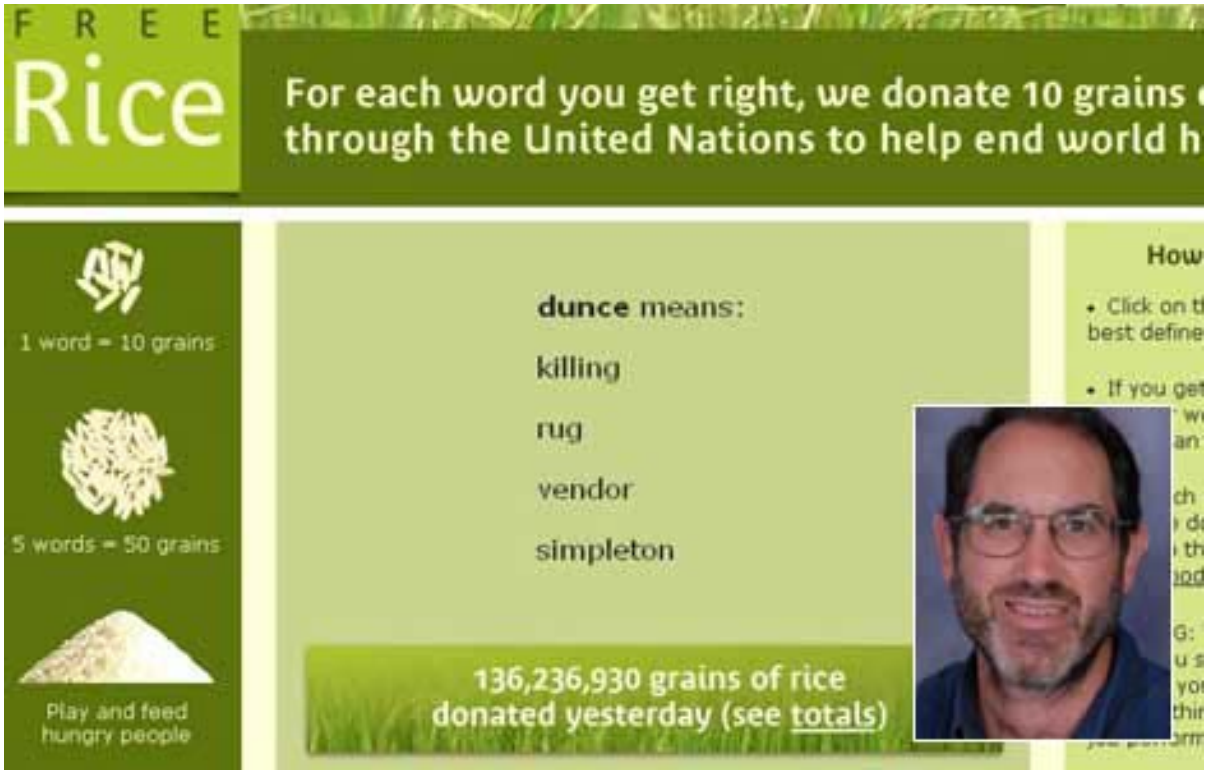
2010 Annual Letter from Bill Gates
- Page 1: Introduction
- Page 2: Innovation
- Page 3: Childhood Deaths
- Page 4: The Miracle of Vaccines
- Page 5: Malaria
- Page 6: Polio Eradication
- Page 7: HIV/AIDS
- Page 8: Helping Teachers Improve
- **Page 9: Online Learning**
- Page 10: Agriculture
- Page 11: Rich Countries' Aid Generosity
- Page 12: Looking Ahead

Download Bill Gates' 2010 Annual Letter (18 pages, 2.49MB, PDF)

ONLINE RESOURCES

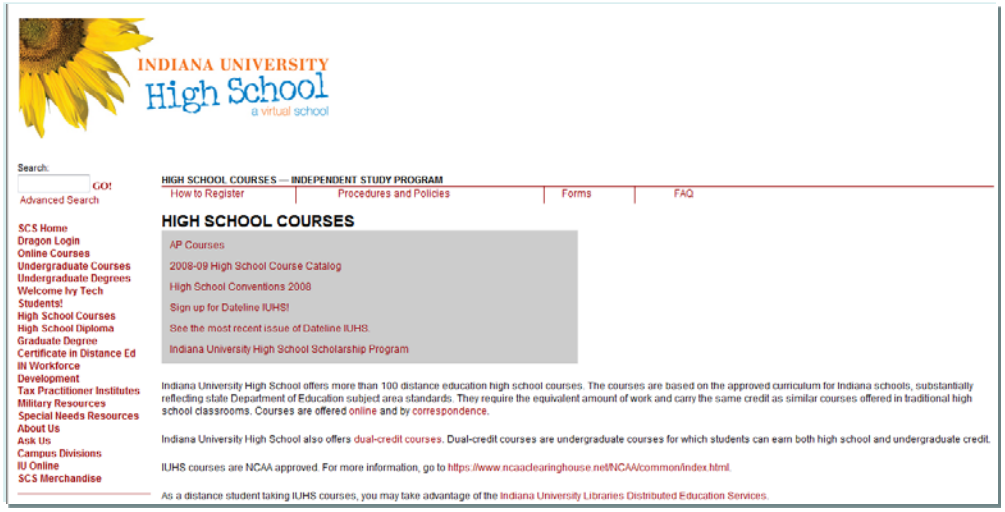
Academic Earth
Walter Lewin, MIT

A Grain of Rice: A Bloomington man's computer vocab game feeding the world (John Breen)



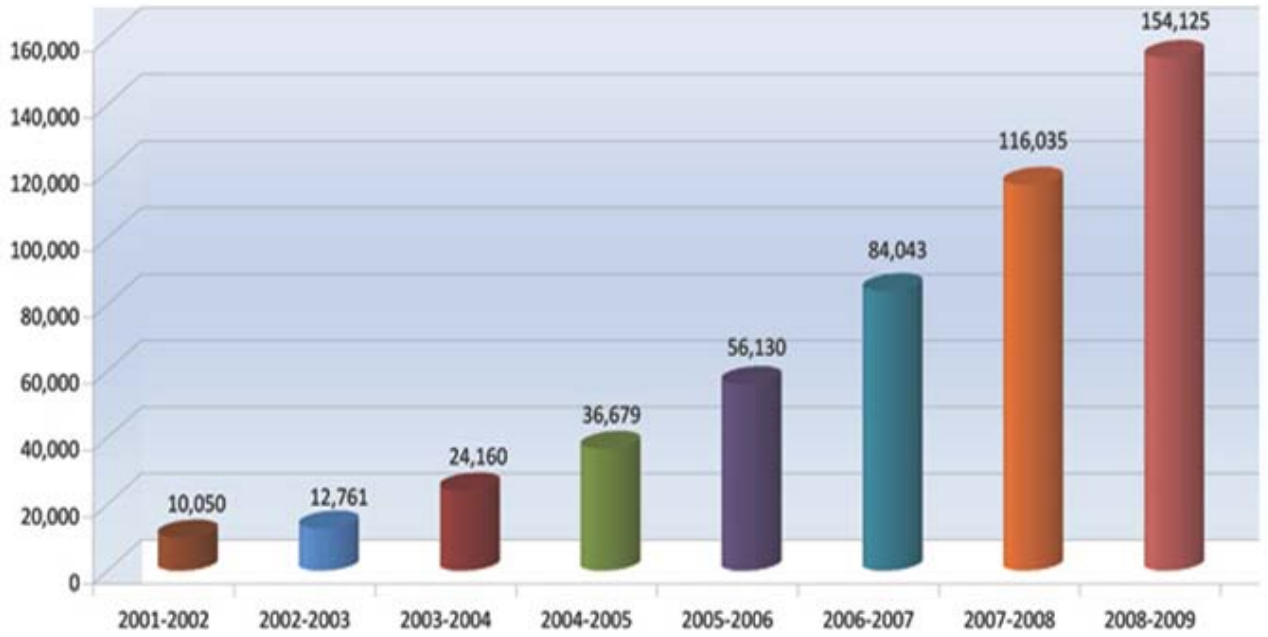
Adora Svitak, age 12, World's Youngest Teacher

Indiana University High School
(4,000 students and 1,400 enrolled in diploma programs)



Florida Virtual School, 71,000 unique students

This is half credit completions, which means all included have successfully completed a half credit enrollment (per Julie Young, June 2, 2010)



Michigan Virtual School

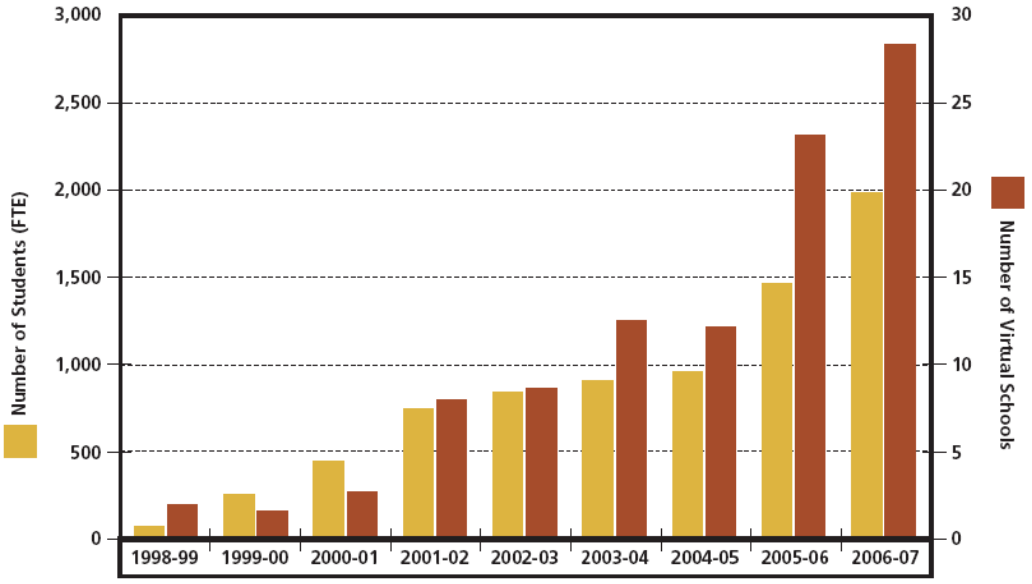
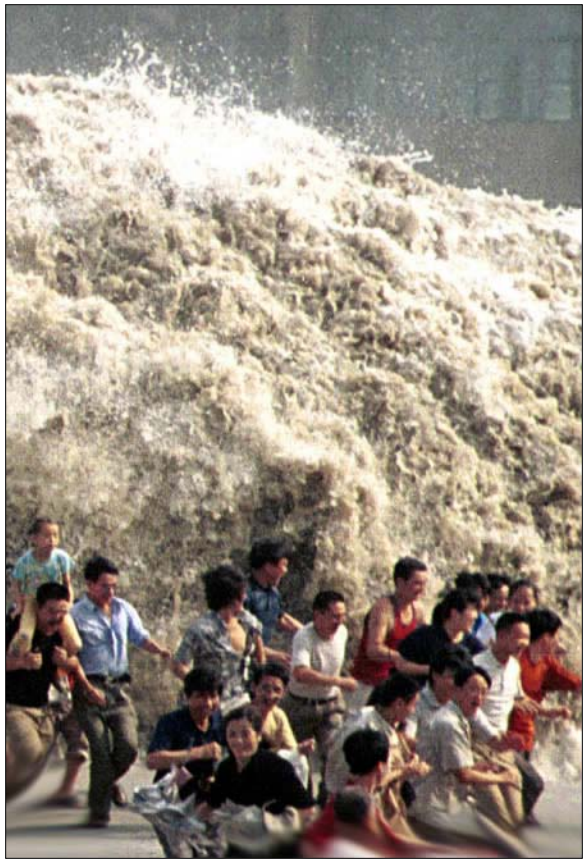


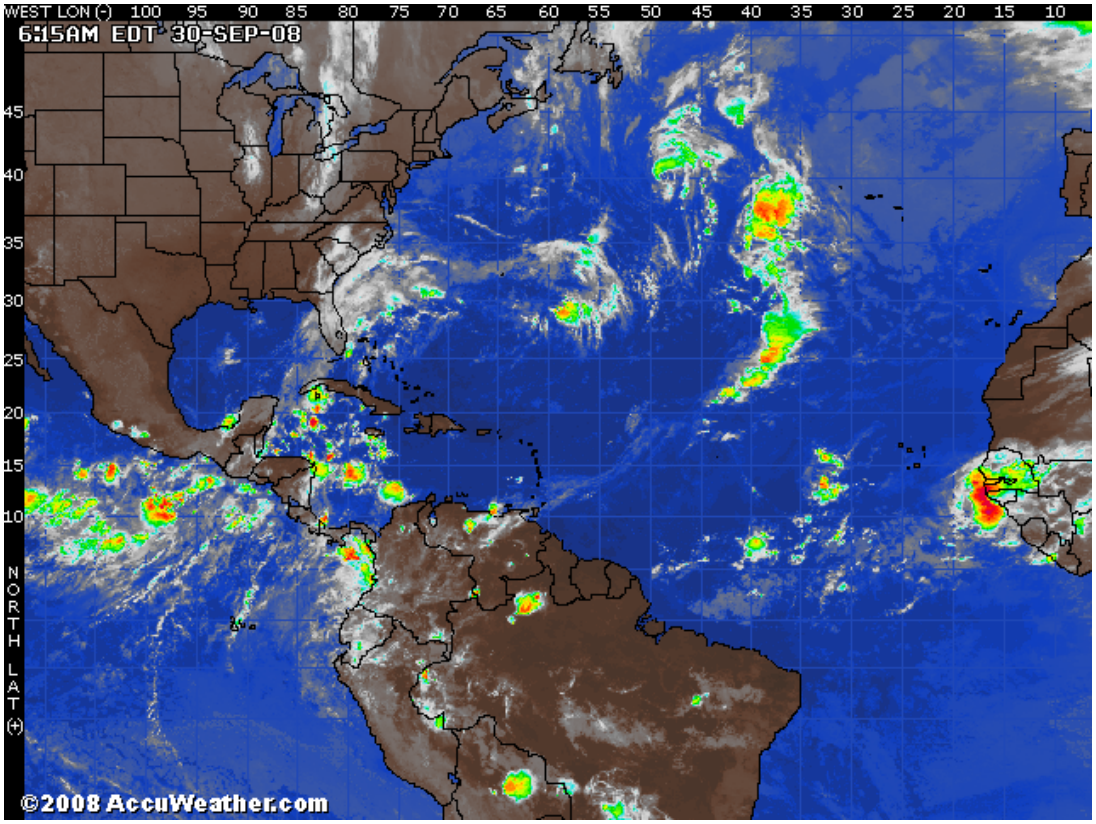
Figure 5: Program and student growth in online programs in Kansas. Source: Kansas audit of online programs.

We’re in the Midst of Storm 3: Erased Budgets (Tsunamis and Floods)



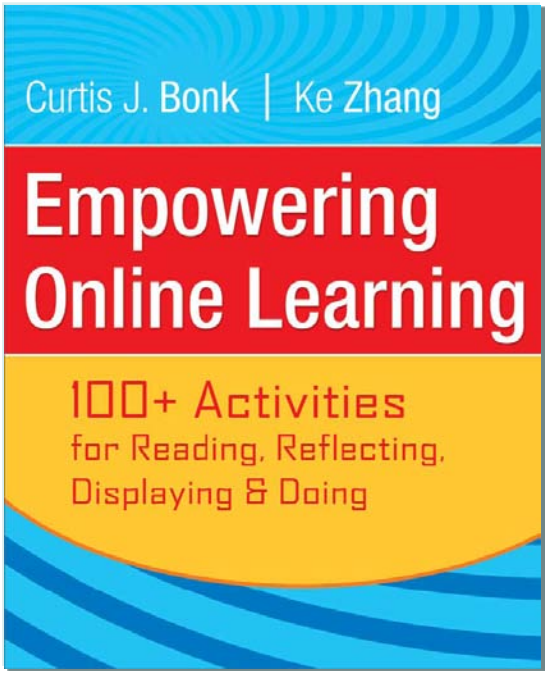
PROBLEM
STATE FUNDING CUTS
+ FEWER STUDENTS
+ BAD ECONOMY
+ STUDENT NEEDS
= SCHOOL FINANCE CRISIS

On to Storm 4: Enhanced Teaching (a swirling storm)



Addressing Diverse Learners with R2D2

The R2D2 Model



The R2D2 Method

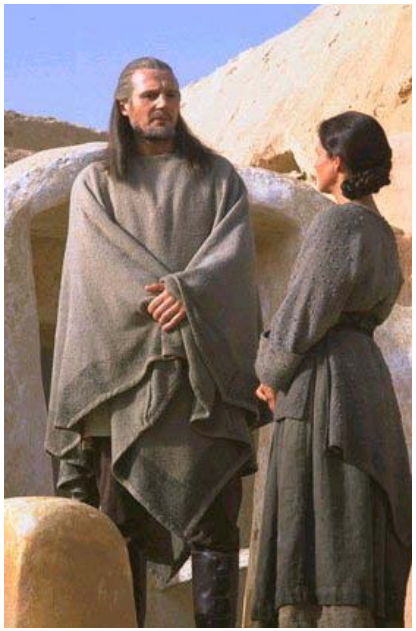
1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)

Why Address Learning Styles?

- Promotes reflection on teaching
- Move from just one mode of delivery
- View from different viewpoints
- Offer variety in the class
- Might lower drop-out rates
- Fosters experimentation

1. Auditory or Verbal Learners

- **Auditory and verbal learners prefer words, spoken or written explanations.**

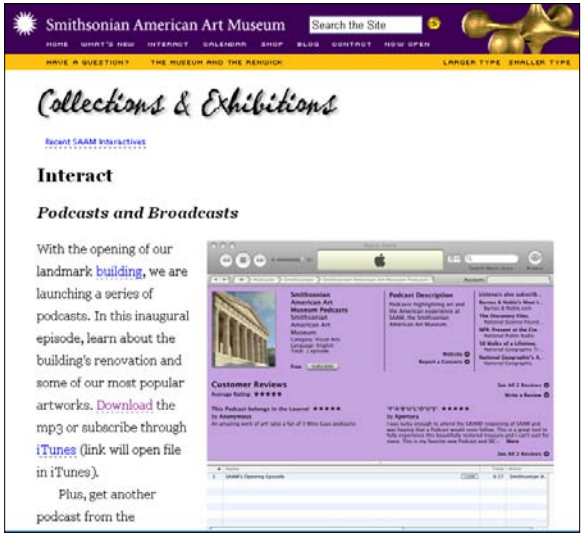


Podcast Questions

1. Who has listened to a podcast?
2. Who listens to a certain podcast on a regular basis?
3. Who has created a podcast?
4. Who has created a vodcast?
5. Who thinks podcasting is simply more talking heads?

Read 1a. Kids Podcasts

Read 1b. Art and History Exhibits



Read 1c. Wiki Steps on How to do Something: Wikihow http://www.wikihow.com/

wikiHow
The How-to Manual That You Can Edit

? Help RSS Create an account or log in

Type in here Search

We need photographers. Can you help?

Home > Categories > Communications> English Grammar

Create a Page | Random Article

Related wikiHows

- Avoid Colloquial (Informal) Writing
- Use Apostrophes
- Use Question Marks Correctly
- Use a Dictionary

Ads by Google

Comma Punctuation
Punctuation Rules
Colon Punctuation
Punctuation Marks

Ads by Google

Punctuation
Fix & Enrich English Text Wisely Dedicated Writing Tool-25% Discount
www.WhiteSmoke.com

A Grammar Book That's Fun
"Woe Is I," the friendly bestseller that's really in plain English!
www.grammarphobia.com

English Grammar Resource
Individualized resources for mastering grammar basics
www.ComFit.com

Learn English in America
Join the Most Popular English

Article Discuss Edit History Bookmark

How to Use English Punctuation Correctly

With the dawn of the Internet, the birth of Internet slang, and the growing age of SMS, many individuals are forgetting the fundamental aspects of English punctuation. Would you like to write a great paper for one of your classes? Maybe you need to submit a polished, impeccable proposal to your boss? If so, it will help to know proper usage of punctuation. Consider this article a crash course in English punctuation, and read on.

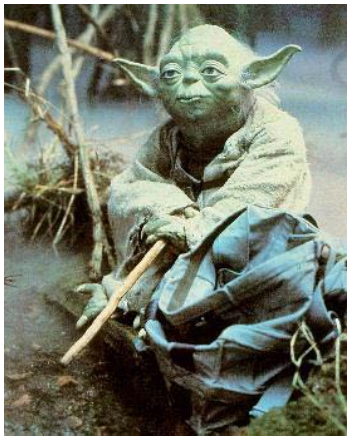
Steps [edit]

1. End your sentences with a period (**full stop**), question mark, or exclamation point (**exclamation mark** or **shout mark**).
   - Use the **period** (**full stop**) to denote a full stop at the end of a statement. The period (.) is one of the most commonly used punctuation marks.
     - *The accessibility of the computer has increased tremendously over the past several years.*
   - The **question mark** (?), used at the end of a sentence, suggests an interrogatory remark or inquiry.
     - *What has humanity done about the growing concern of global warming?*
   - The **exclamation point** (**exclamation mark**, **shout mark**)(!) suggests excitement or emphasis in a sentence.
     - *I can't believe how difficult the exam was!*
2. Use the semicolon and colon properly.
   - The **semicolon** (;) has a few uses.

Read 1d. Course Announcements (e.g., Teaching with Twitter)

2. Reflective and Observational Learners

- **Reflective and observational learners prefer to reflect, observe, view, and watch learning; they make careful judgments and view things from different perspectives**

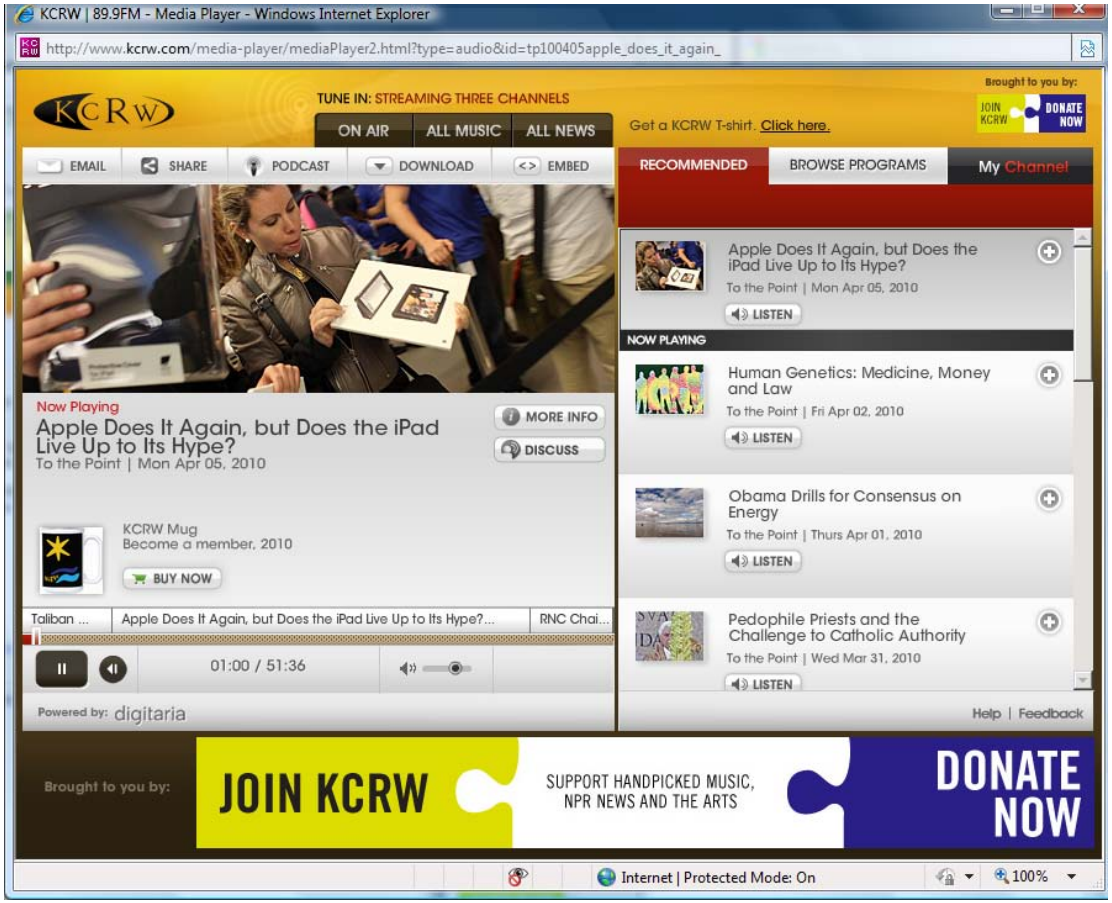


Blogging Questions

1. Who has a blog?
2. Who regularly reads other people's blogs?
3. Who assigns blogging tasks?
4. Who has created a video blog?
5. Who thinks it is an utter waste of time to blog?

Reflect 2a. Kids Blogs

Reflect 2b. Ask students to relisten and reflect on particular podcast shows (e.g., iPad April 2010)

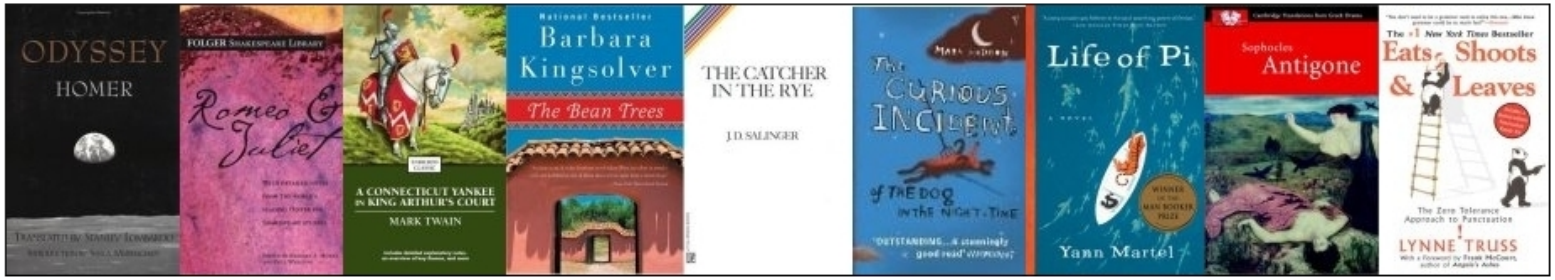


Reflect 2c. Teacher Classroom Blogs

Mrs. Huff's English Classes

FRONT PAGE ARCHIVES ABOUT NOTES HANDOUTS SUMMER READING SUBSCRIBE

CONTACT



OFFICE HOURS

- Tuesdays, 7:20-7:40
- Thursdays, 11:45-12:27 (Learning Center)
- Other times by appointment

FACEBOOK

Weekly Diigo Links (weekly)

November 8th, 2009 · No Comments · Academic Success

- BBC – Robert Burns

In honor of the 250th anniversary of Robert Burns' birth, some of Scotland's biggest names have recorded 254 (and counting) of Robert Burns' works.

Tags: burns, robert, bbc, podcast, scotland, scots

SEARCH IT!

To search, type and hit enter

RECENT ENTRIES

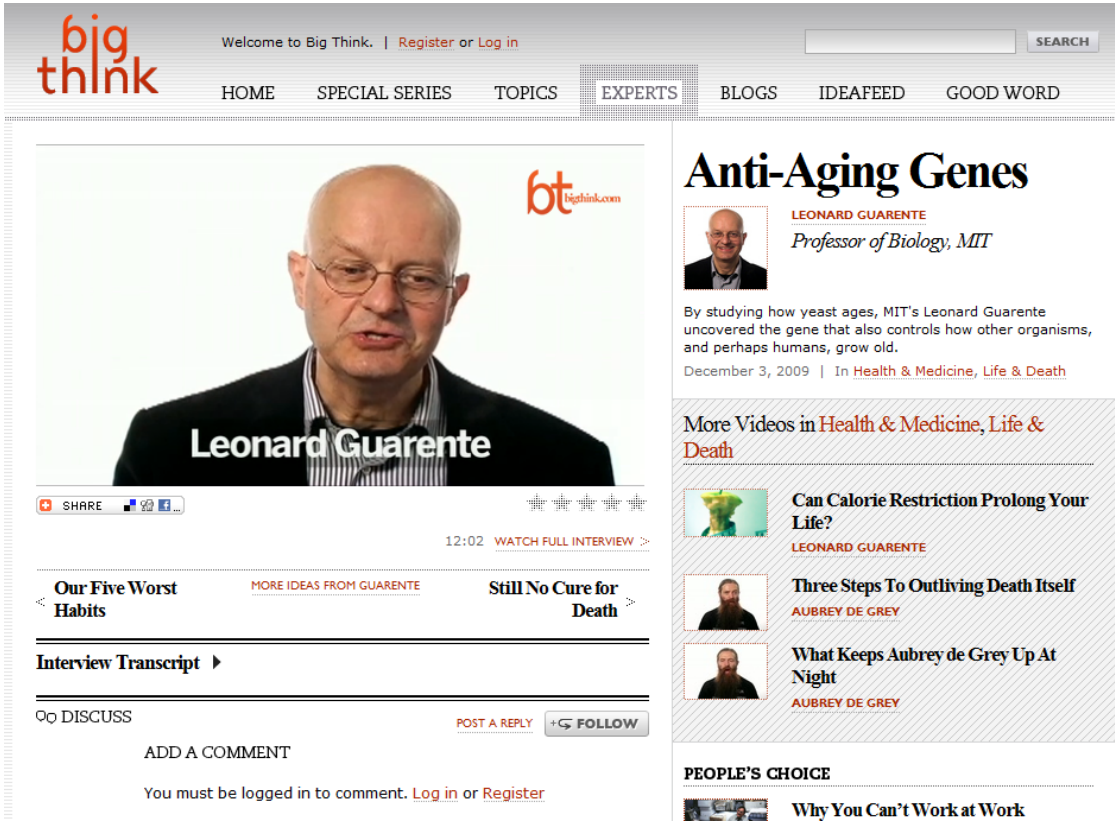
- Weekly Diigo Links (weekly) 11.8
- Interactive Notebooks: Good Ideas for the Left-Hand

Reflect 2d. Reuse Blog Posts, Chat Transcripts, Interviews, Conferences, Online Presentations

Reflect 2e. Videos on Book Websites (e.g., Brain Rules, John Medina)

Reflect 2f. Expert and Domain Specific Blogs (Health Blogs)

Reflect 3g. Big Think (short topical videos from famous people)

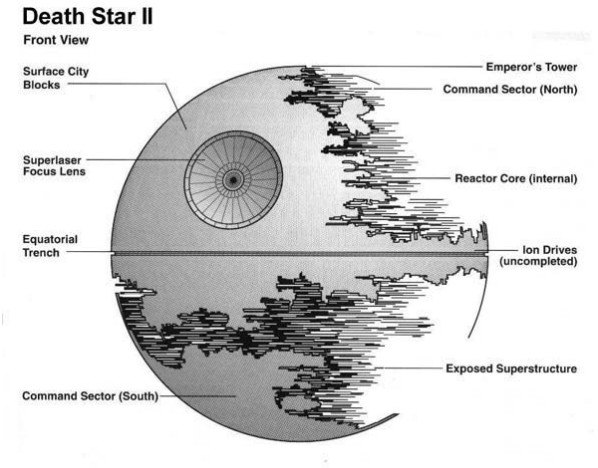


Now for the big questions...!!!

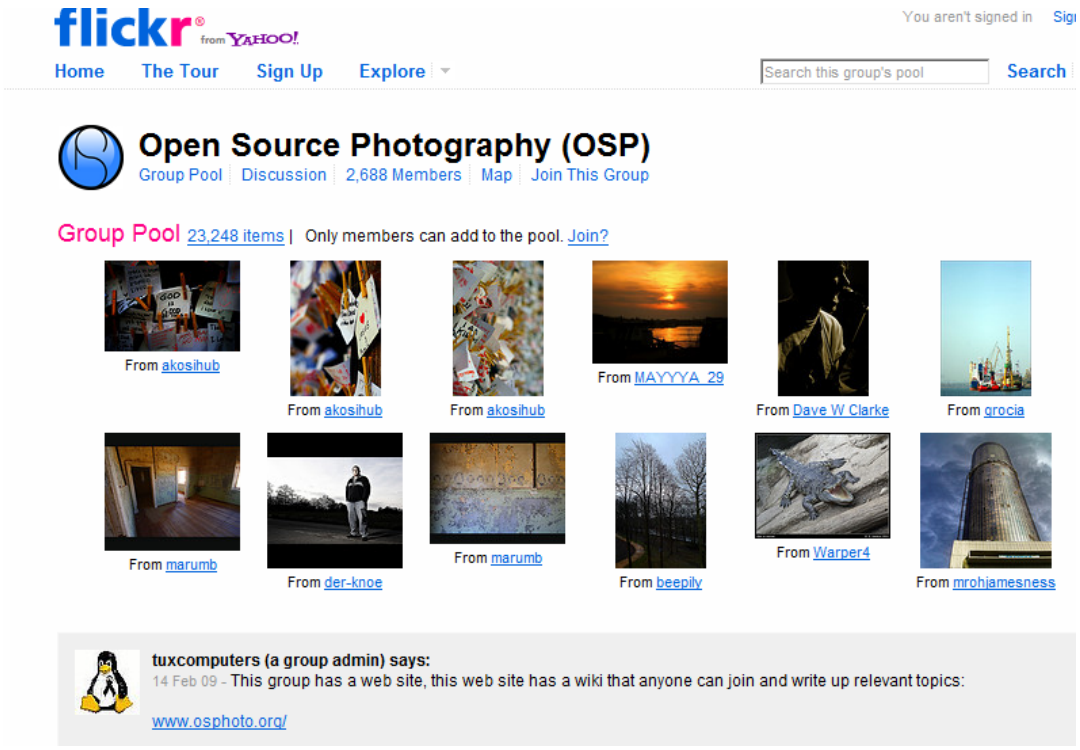
99 Second Reflection!!! Jot down 3 things you learned so far.

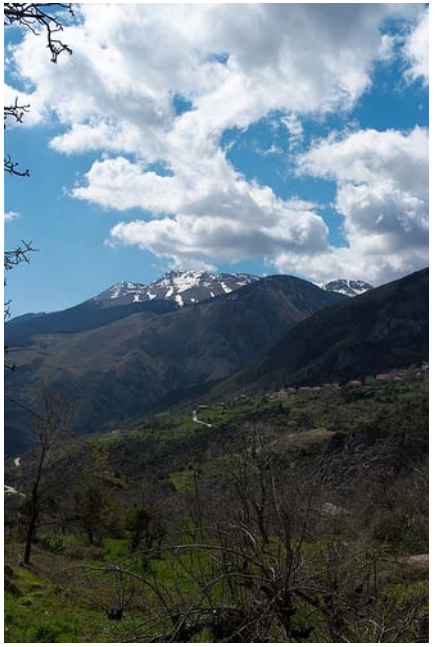
3. Visual Learners

- **Visual learners prefer diagrams, flowcharts, timelines, pictures, films, and demonstrations.**



Display 3a. Find Open Source Photography (e.g., Flickr)

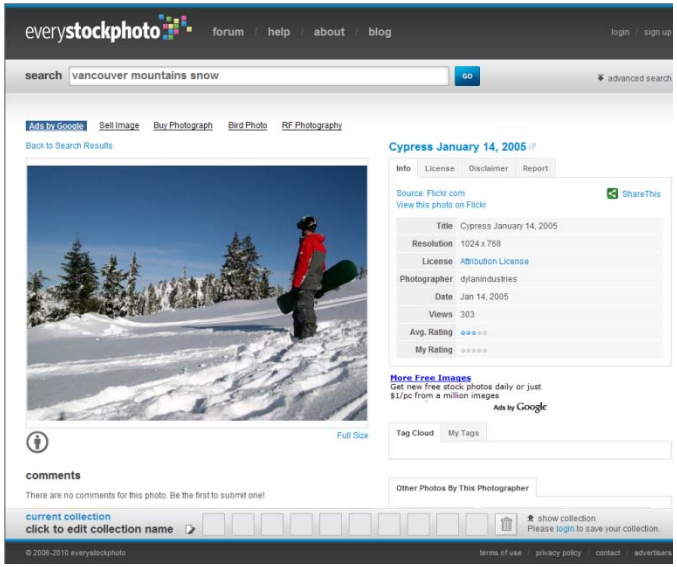




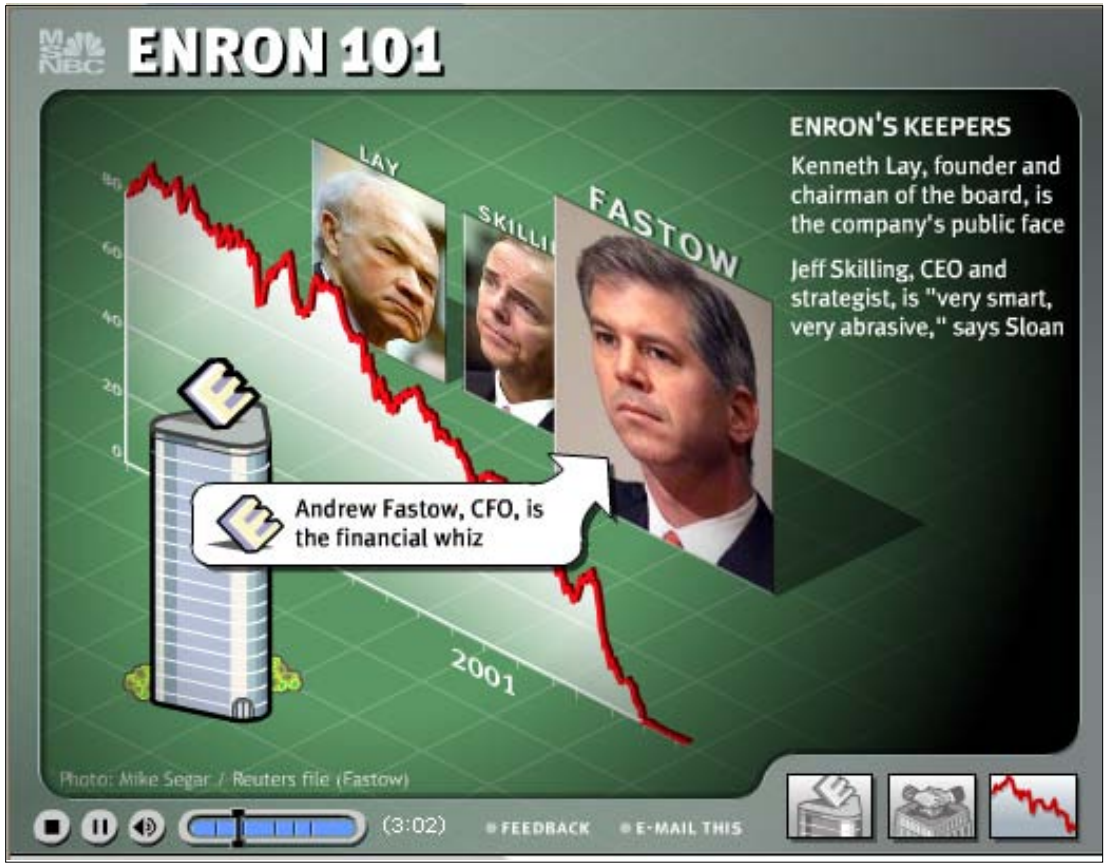
Display 3b. Everystockphoto.com

(courses on the Winter Olympics, photography, motivation, geography, Canadian culture, meteorology, physics, etc.)

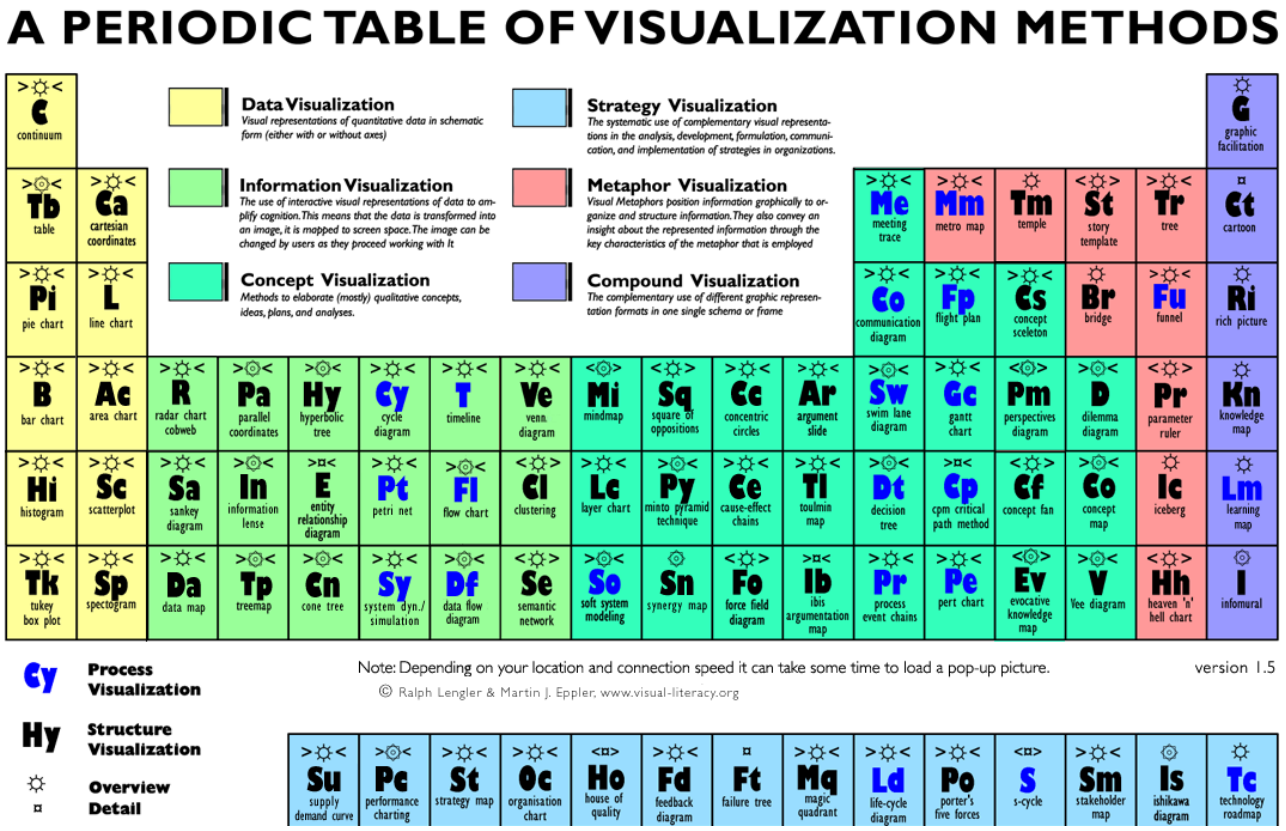
http://everystockphoto.com/



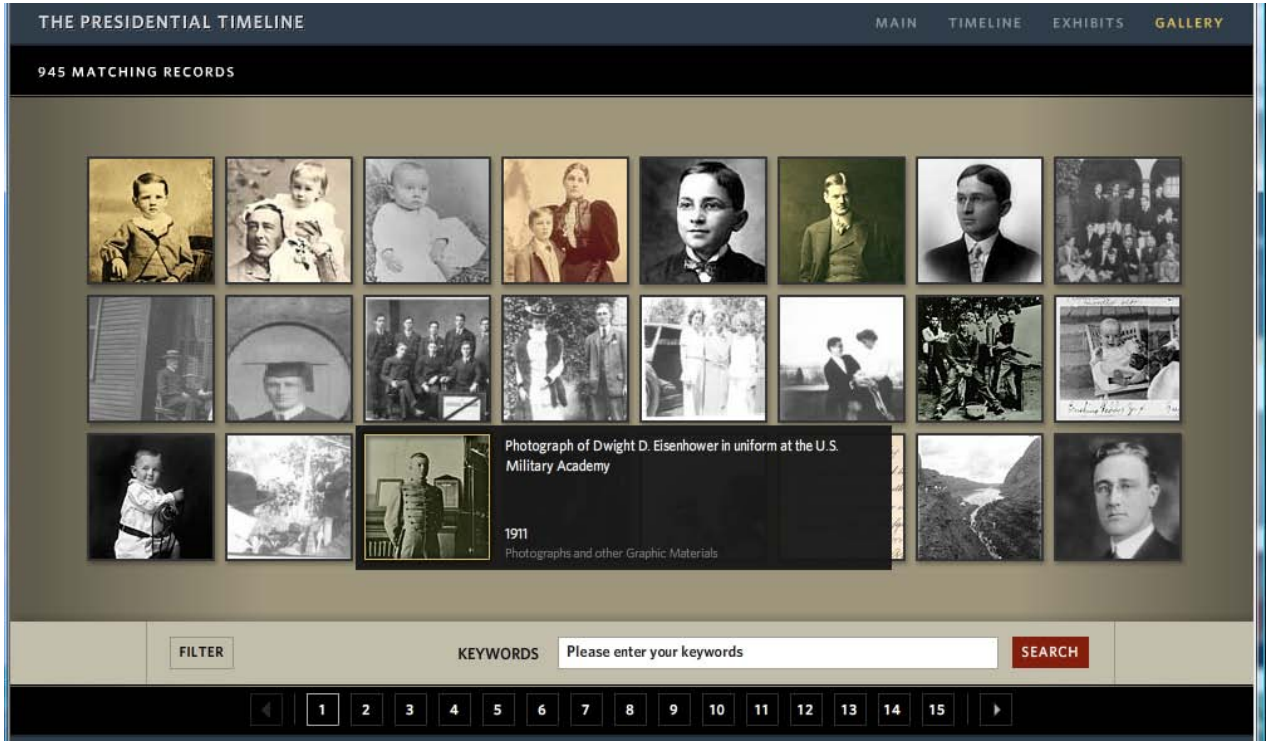
Display 3c. Flash, 3-D Visualization, & Laboratory Software



Display 3d. Visual Resources
(e.g., Periodic Table of Visualization; Visual Thesaurus)



Display 3e. Online Timelines
(US Presidents)

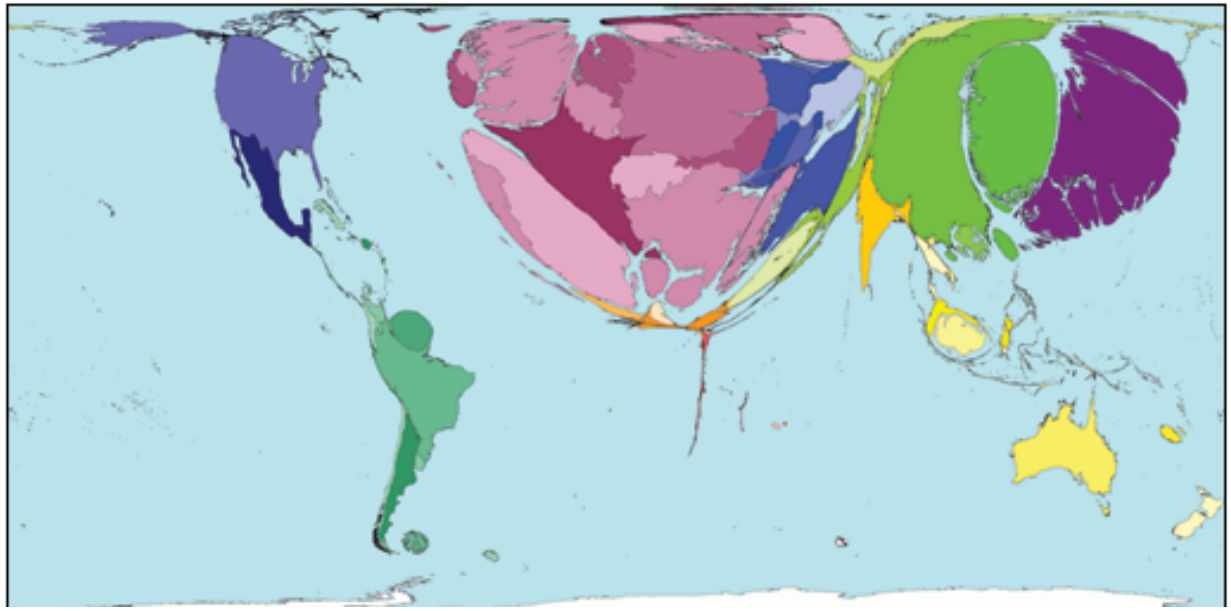


Display 3f. World Trends and Indices (e.g. Worldmapper)

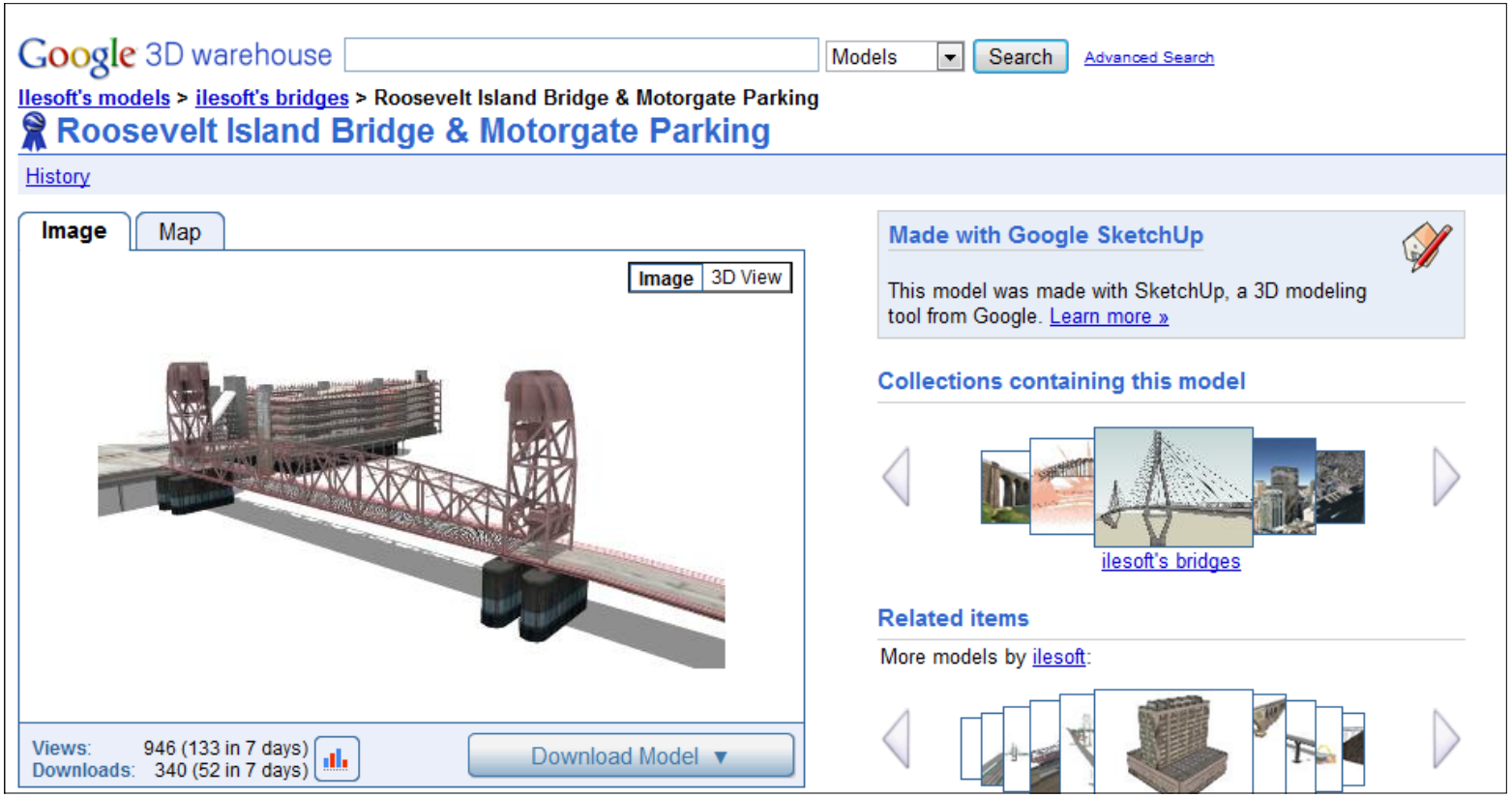
WORLDMAPPER *The world as you've never s*

Home | Map Categories | Thumbnail Index | A-Z Map Index

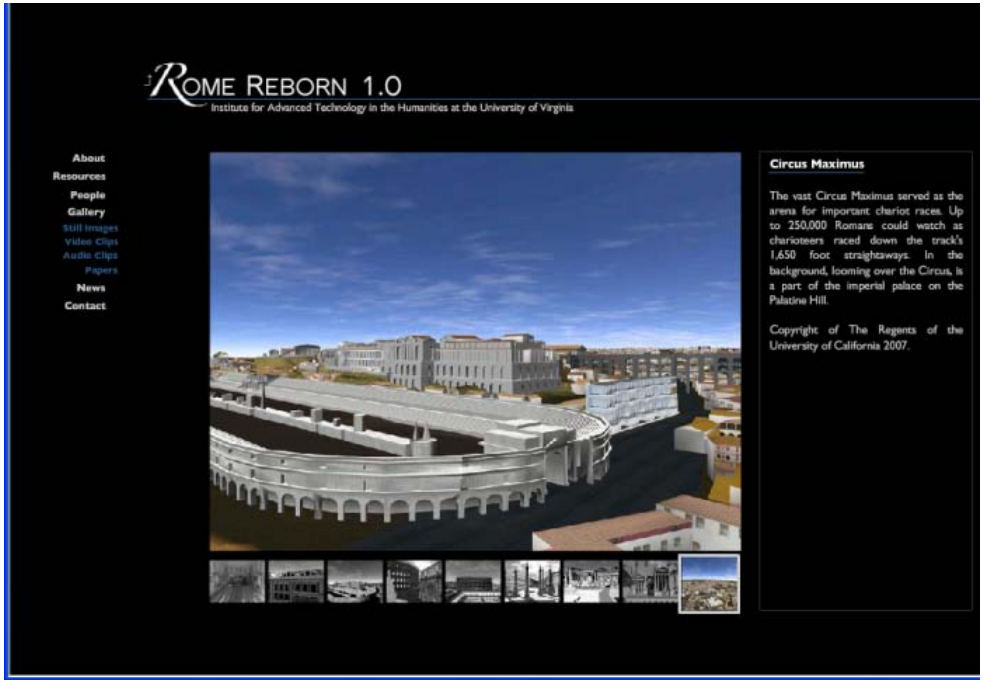
< Previous Map **Science Growth** Map No. 206



Display 3g. Download and Use Online 3D Sketches (e.g., Google SketchUp)

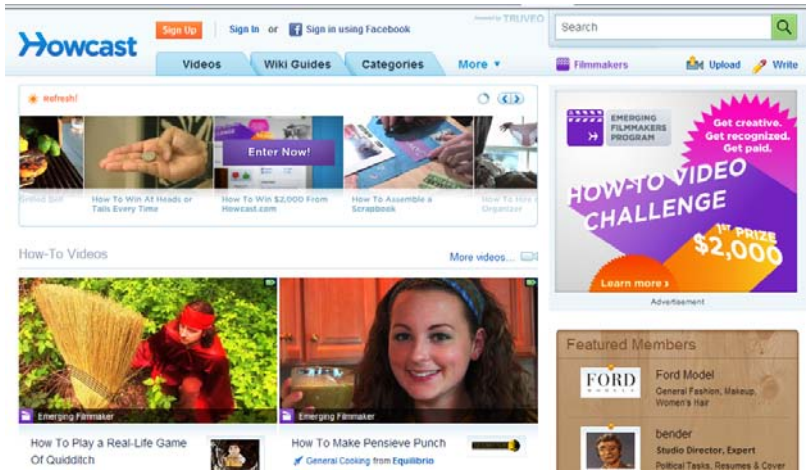


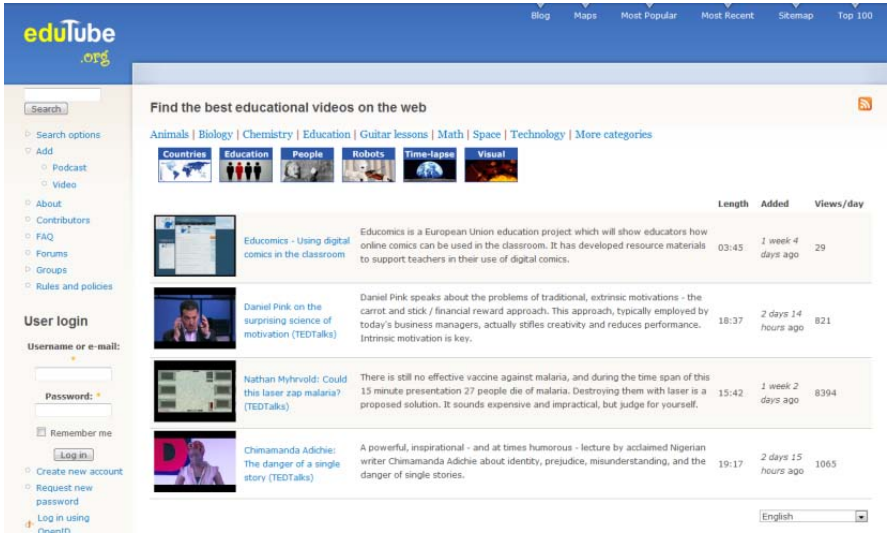
Display 3h. Explore Virtual Worlds and Online Representations (e.g., Rome Reborn 1.0, University of Virginia, UCLA)



Display 3i. Shared Online Video (TeacherTube and WatchKnow)

Display 3j. Shared Online Video
(e.g., eduTube, Howcast, WonderHowTo, Clip,Chef, Link TV, Monkeysee, Fora TV, etc.)





Display 3k. Video iPod Vocabulary Training

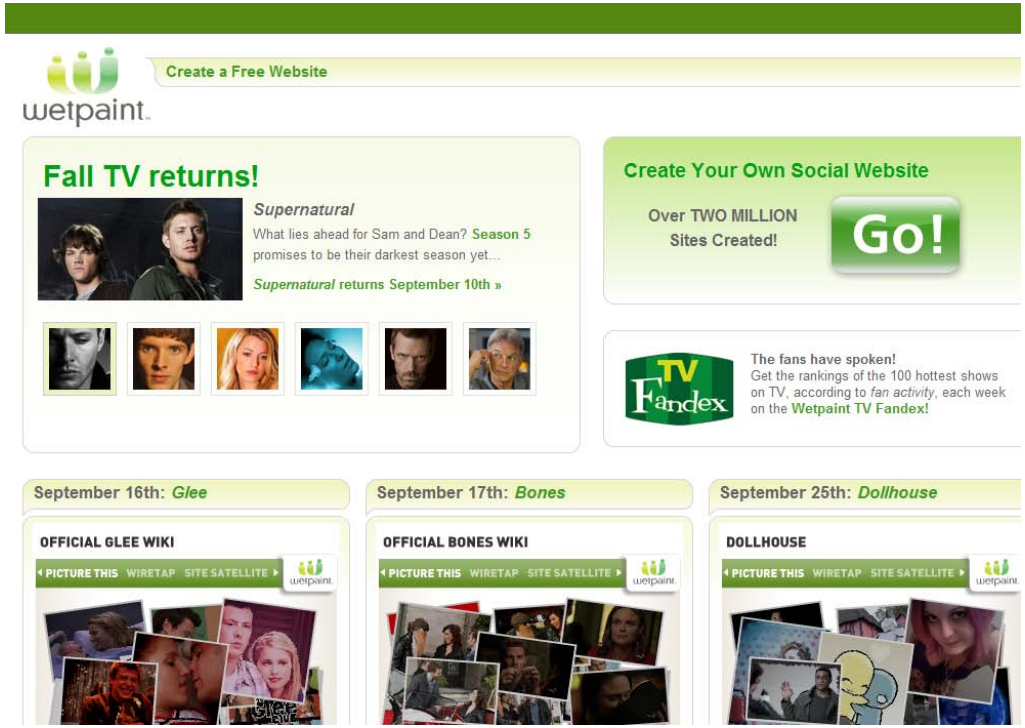
4. Tactile/Kinesthetic Learners

- **Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.**

Wiki Questions

1. Who regularly reads Wikipedia articles just for fun?
2. Who regularly reads Wikibooks?
3. Who seeks Wikipedia for content?
4. Who has edited or written new articles on Wikipedia or Wikibooks?
5. Who thinks it is ok for college students to cite from Wikipedia?

Do 4a. Student Work in a Wiki
(e.g., Wet Paint, a free wiki tool for online collaboration; e.g., medical education)



Do 4b. Wikibook and Wikipedia Editing

Try Beta Log in / create account

article | discussion | edit this page | history

[Hide]

Wikipedia is there when you need it — now it needs you.

$0.9M USD $7.5M USD

Donate Now

Kaprosuchus

From Wikipedia, the free encyclopedia

Kaprosuchus is an extinct genus of mahajangasuchid crocodyliform. It is known from a single nearly complete skull collected from the Upper Cretaceous Echkar Formation of Niger. The name means "boar crocodile" from the Greek *kapros* ("boar") and *souchos* ("crocodile") in reference to its unusually large caniniform teeth which resemble those of a boar.[1] It has been nicknamed "BoarCroc" by Paul Sereno and Hans Larsson, who first described the genus in a monograph published in *ZooKeys* in 2009 along with other Saharan crocodyliformes such as *Anatosuchus* and *Laganosuchus*.[2] The type species is *K. saharicus*.

Contents [hide]

1 Description
2 Classification
3 Paleobiology
3.1 Diet
4 References
5 External links

Kaprosuchus

Fossil range: 95 Ma

PreЄ Є O S D C P T J K PgN

Cenomanian

Skull of *Kaprosuchus saharicus*

Scientific classification

Kingdom: Animalia

Phylum: Chordata

Description [edit]

Kaprosuchus is estimated to have been around 6 metres (20 feet) in length.[3] It possesses three sets of tusk-like caniniform teeth that project above and below the skull, one of which in the lower jaw fits into notches in upper jaw. This type of dentition is not seen in any

4c. Student Blogging

Do 4d. Student Podcasting (in schools—kids have power!)

We'll be back another time.

Steve and Nick

Listen to our Song

Topic: Water Pollution

Vocabulary: Predator, Prey, Population, Communities, Decomposers

Water's End

Imagine all the people that would suffer
Even you would be down on your knees,
We thought Mother Nature was a liar.
Now all she's saying is...

Hundreds of people die in the same way
Cause the toxicated water we drink everyday.
Bodies of water can even go up in flames
Cuz' the trash we throw into the river of shames.

It all became an issue in 1969,
Ever since then we just tend to recline .
You'll never know what'll happen in 200 years,
The only water left will be everybody's tears.

Imagine all the people that would suffer
Even you would be down on your knees,
We thought Mother Nature was a liar.
Now all she's saying is...

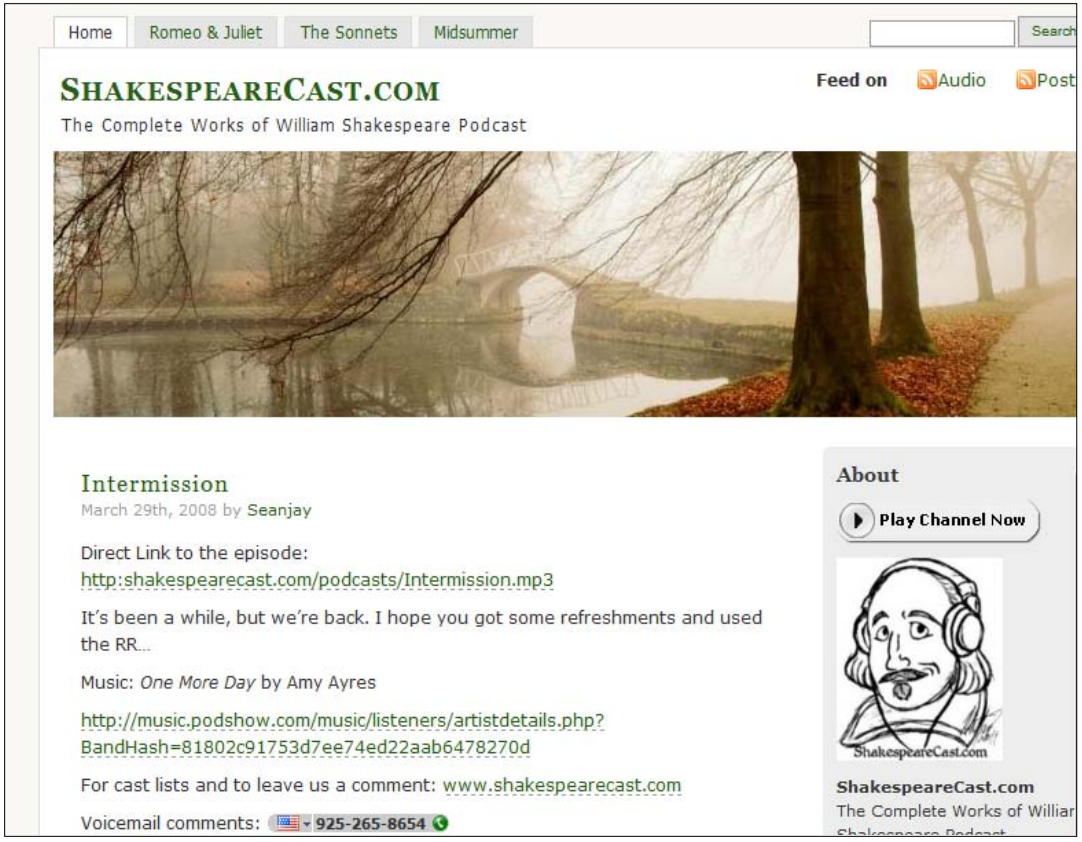
Please do what you can with the time that is given
When the water is gone, there's nothing to be hidden.
The people are the **predators**, and we're like the **prey** ,
And it's hard to believe that we can't even say...that
We're the only reason the **population** is this way,
The **communities** don't know that someday we'll pay.
The **decomposers** are constantly getting a workout,
Because of them it might not be wiped out.

Imagine all the people that would suffer

Do 4e. Hands-On Frog Dissection (Net Frog, Univ. of Virginia)

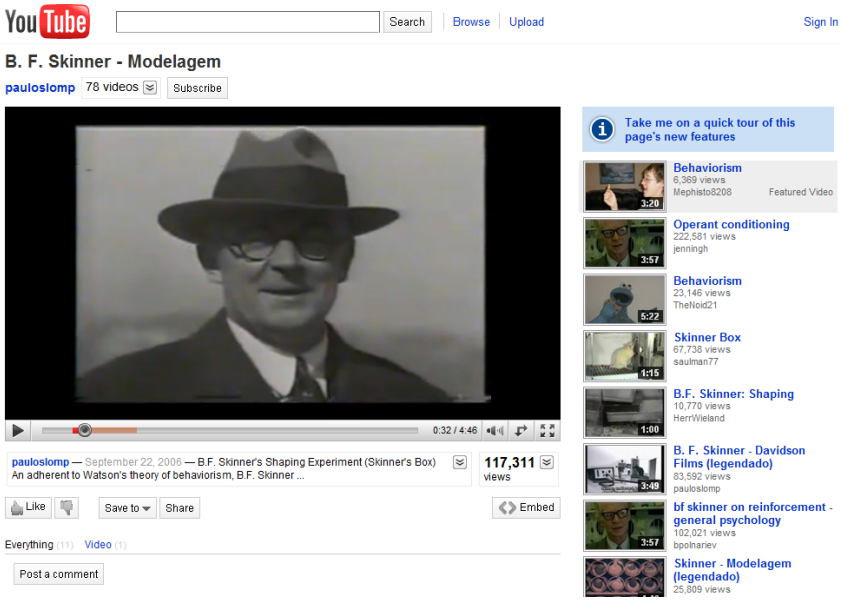
Do 4f. Online Performances Virtual Worlds and Podcasts

(e.g.,Shakespeare plays reenacted)



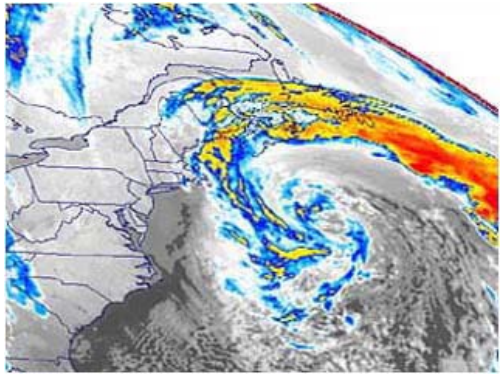
Do 4g. Student Video Anchor Creators

Students create their own YouTube videos to illustrate course concepts.



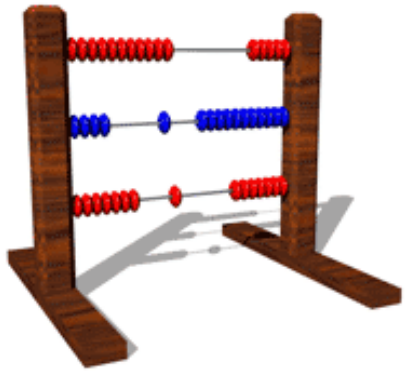
Recap of the Perfect E-Storm….

1. Emerging Technology
2. Escalating (Learner) Demands
3. Erased Budgets
4. Enhanced Teaching



Poll: How many ideas did you get from the second talk?

a. None—you are an idiot.
b. 1 (and it is a lonely #).
c. 2 (it can be as bad as one).
d. 3-5
e. 6-10
f. Higher than I can count!



Stand and Share Ideas

- **Will Work: _____**
- **Might Work: _____**
- **No Way: _____**

Try the R2D2 Method!
Try TEC-VARIETY!

Sample papers :
http://www.publicationshare.com/
Archived talks:
http://www.trainingshare.com/