




Addressing Diverse Online Learner Needs with the Read, Reflect, Display, and Do (R2D2) and TEC-Variety Models





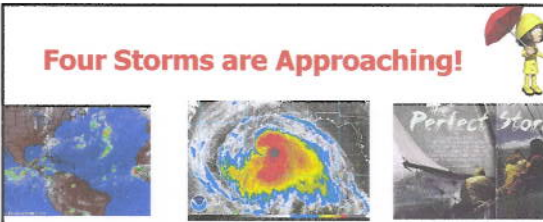
Dr. Curtis J. Bonk
 Professor, Indiana University
 President, SurveyShare, Inc.
<http://mypage.iu.edu/~cjbbonk/>
cjbbonk@indiana.edu



Storm 1. Emerging Learning Technologies



Four Storms are Approaching!



I. Emerging Technology

II. Escalating Demands

III. Erased Budgets

IV. Enhanced Teaching

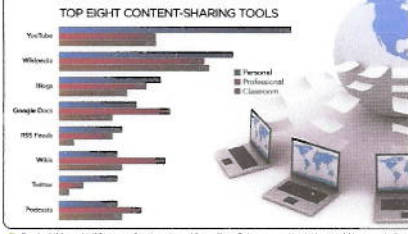
Poll #1: Which of these is the most important? (pick one)

1. Assistive Technologies
2. Blogs and Online Diaries
3. OpenCourseWare and Open Educational Resources
4. Digital Books
5. Social Networking Technology
6. Intelligent Agents
7. Wikis and Wikibooks
8. Online Games and Simulations (Massive Multiplayer Gaming)
9. Shared Online Video (YouTube, TeacherTube)
10. Peer-to-Peer Collaboration
11. Reusable Content Objects and Portals
12. Videostreaming, IP Videoconferencing
13. Virtual Worlds/Reality
14. Wearable Computing
15. Wireless Tech: Tablet PCs, Handheld Devices
16. Digital Portfolios

Tech & Learning, Nov 2009

Educators are currently using many content-sharing tools personally, professionally, and in the classroom.

TOP EIGHT CONTENT-SHARING TOOLS



Tool	Personal	Professional	Classroom
YouTube	High	High	High
Wikibooks	Medium	Medium	Medium
Blog	Medium	Medium	Medium
Google Docs	Medium	Medium	Medium
MSN Photo	Medium	Medium	Medium
Wiki	Medium	Medium	Medium
Twitter	Low	Low	Low
Podcasts	Low	Low	Low

1. New Search Technology (timeline oriented)



2. Google Sky

What if the World was Beyond our World?
NASA's Hubble Space) USA Today, August 22, 2007

The image shows a screenshot of the Google Sky website. The main feature is a large, vibrant image of a nebula. To the left, there's a sidebar with navigation options. Below the main image, there's a smaller image of a person looking at a computer screen, and another image of a person using a mobile device. The text is in red and black, providing context for the article.

3. Mobile Learning

- 50 million iPhone users and 85,000 applications.
- Pull yourself away from that iPhone and read this story, By Mary Brophy Marcus, USA Today, October 5, 2009

This block features a collage of images. At the top right is a mobile phone. Below it, there's a headline in red. The main content includes a photo of a person holding a mobile device, a photo of a classroom with students, and several images of different mobile phones. The text is in red and black, highlighting the statistics and the article reference.

4. Social Networking Gaming (e.g., Farmville)

For social networks, it's game on, USA Today, Jon Swartz, Thursday October 15, 2009

The image shows a screenshot of the Farmville game interface, which is a colorful, cartoonish farm scene with various animals and buildings. To the left, there's a newspaper clipping with the headline "For social networks, it's game on" and a sub-headline "Quick, single fun booms on Facebook, MySpace". The text is in red and black.

5. e-Book Readers

(e.g., Barnes & Noble unveils its e-reader, USA Today, October 21, 2009)

This block shows a Barnes & Noble e-reader device. The device is white with a large screen displaying a simple 'u' shape. A person is holding the device. To the right, there's a photo of a person in a classroom setting. The text is in red and black, providing the article reference.

6. Digital Textbook Projects (Korea)

Includes: 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)

The image shows a screenshot of a digital textbook interface. It features a green curved banner at the top with the text "Digital Textbook". Below this, there are several smaller images and text blocks representing different educational content like games, simulations, and study aids. The text is in red and black.

7. TED

Tech Confab With a Conscience Goes Global
USA Today, July 21, 2009

This block shows a screenshot of a TED conference presentation. The main image is a large screen displaying a slide with a green and yellow design. A person is standing at a podium in front of the screen. The text is in red and black, providing the article reference.

8. Live Streaming (e.g., Zoo Animals on Demand) USA Today, September 8, 2009

Littliest patients find distraction, comfort in live feeds from zoos

9. OpenCourseWare (OCW) (MIT Highlights for High School and BLOSSOMS Project)

10. Online Educational Resources (OER) (See free-Reading.net)

11. Mobile Video Blogging (Stanford, Paul Kim)

12. Simulations (e.g., Virtual Astronaut from WisdomTools)

13. Global Collaboration (e.g., Flat Classroom Projects!) (combine blogs, videoconferencing, chat, async discussion, etc.)

**14. Global Collaboration continued
EPals and iEARN (International
Education and Resource Network)**



**15. Interactive Videoconferencing
Global Nomads Group
<http://www.gng.org/home.html>**



**16. Wikis and Wiki Collaboration Sites
(e.g., Wikispaces)**



**17. Connexions Growth
January 2009**

>8,000 modules (3-5 pages)
>425 collections (books and courses)
multiple languages
**engineering, computer science,
 nanotech, physics, statistics, math,
 history, music, bio-diversity, botany,
 bio-info, IP, BRIT, UNESCO, UN, Sigma
 Xi, ...**
from authors worldwide

Usage (December 2009)
 1.6m unique users
 4 million page views
 72 million hits
 More than 1m unique users
 from nearly 200 countries

**18. 'One Laptop Per Child' program collides
with reality, Toronto Globe and Mail, Oct 15, 2009
Bhutan, Khendum Gyabak (Univ. of Texas at El Paso)**



**19. Moodle (620,000 registered users in 204
countries speaking 78 languages, 2/10/2009)**

This block shows a screenshot of the Moodle website dashboard. It features a grid of user avatars on the right, a 'Moodle sites' graph showing an upward trend, and a 'Moodle downloads' graph. There are also some small images of a cow and a person's face.

20. Text Messaging. "This Generation: Always Connected: 18 and Under: Texting, Surfing, Studying?" NY Times, October 13, 2009, PERRI KLASS, M.D

On to Storm 2... Escalating (Learner) Demands

Growth of Online Learning in Secondary Schools (Florida Virtual School; AP American History)

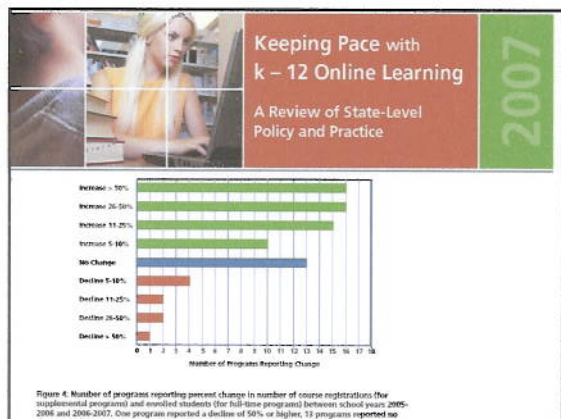
Michigan Virtual School (11,000+ students, Dan Schultz, October 2008)

	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Enrollments*	100	676	2,302	5,591	5,670	5,917	6,877	9,941	11,000
Schools served**	18	301	194	211	280	476	672	1,840	1,100
Unique courses	0	17	27	133	137	162	190	251	200

*This includes only approved instructor lengths on admission
 **This includes former school enrollments
 ***Some are estimates

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

Adora Svitak, age 12, World's Youngest Teacher



Tech & Learning, Nov 2009

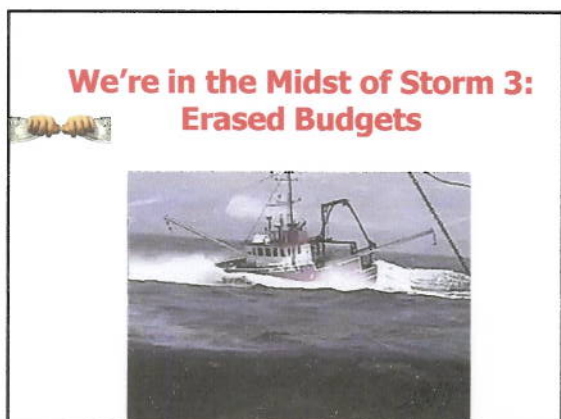
news&trends

FAST FACTS ABOUT ONLINE LEARNING

K-12 online learning is an estimated **\$50 million** market that is growing at an estimated pace of 30% annually.

- 44** states have significant supplemental online learning programs, or significant full-time programs (in which students take most or all of their courses online), or both.
- 34** states offer state-led programs that are designed, in most cases, to work with school districts to supplement course offerings for students.
- 57%** of public secondary schools in the U.S. provide access to students for online learning.
- 72%** of school districts with distance education programs planned to expand online offerings in the coming year.

SOURCE: THE INTERNATIONAL ASSOCIATION FOR K-12 ONLINE LEARNING (IA2L), A NONPROFIT ORGANIZATION THAT FACILITATES COLLABORATION, RESEARCH, AND PRACTICE TO ENHANCE QUALITY K-12 ONLINE TEACHING AND LEARNING.



STIMULUS BY STATE

ESTIMATED JOB CREATION

Report: 10 states face looming budget disasters

By Alan Taylor

By Alan Taylor

STIMULUS BY STATE - Color-coded by state to show estimated job creation from stimulus packages. The darker the color, the more jobs are expected to be created.

Obama to Invest in High-Tech Education, CNN Money, September 21, 2009

CNNMoney.com

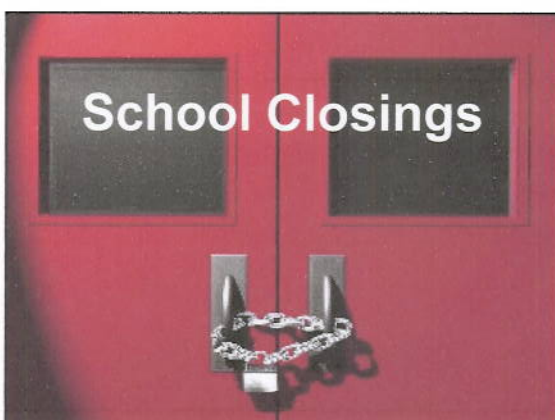
Obama urges investment in high-tech education

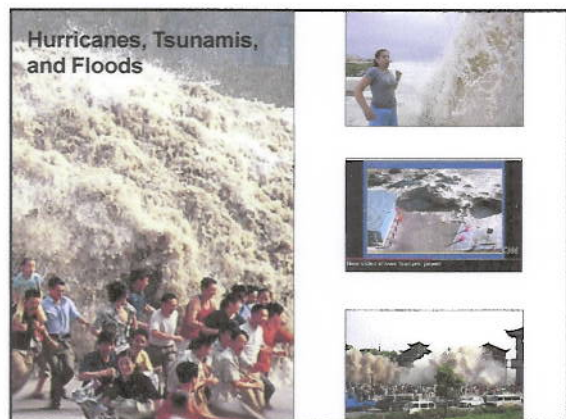
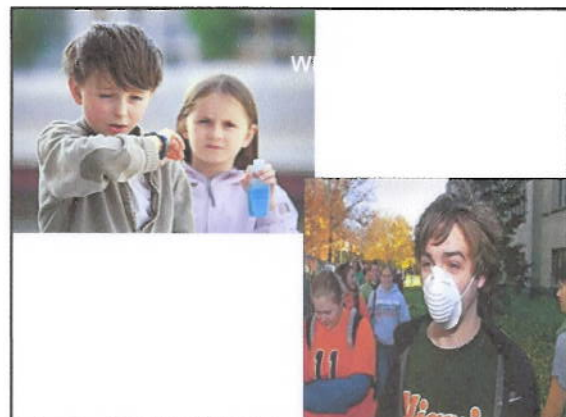
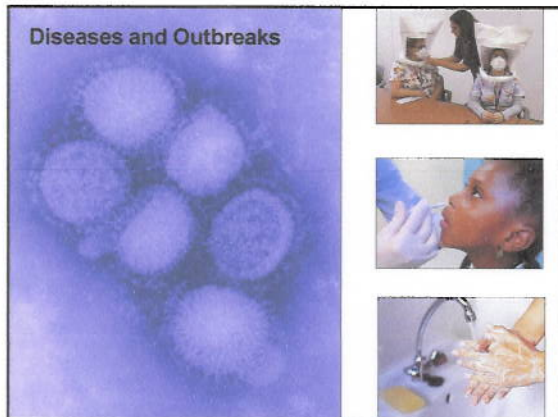
The president says training Americans for jobs of the future will help create a more stable foundation for the economy.

NEW YORK (CNNMoney.com) - President Obama on Monday pushed his plans to make the nation's economy more stable in the future by investing in education for high-tech industries.

The president unveiled a new "innovation strategy" that builds on \$100 billion of economic stimulus funds to support entrepreneurship, education, infrastructure and other investments.

The plan aims to make the U.S. economy more competitive and help prevent volatile "boom and bust" cycles in the





Poll #2: Which of these have you experienced?

1. SARS
2. Earthquake
3. Tsunami
4. Winter Blizzard or Ice Storm
5. Major Flood
6. Hurricane, Typhoon, or Serious Tropical Storm
7. Swine Flu, Asian Flu, or Similar
8. Tornado
9. Near death weather-related situation
10. Other (not listed above)

H1N1 Solution #1.
Use Open Educational Resources
 National Flu Readiness Initiative Taps Curriki for E-Learning,
 Educ Week, Katie Ash on August 28, 2009

More from Solution #1.
Free Lessons from Smithsonian Education
<http://www.smithsonianeducation.org/educators/>

More from Solution #1.
Department of Education free lesson plans
<http://www.free.ed.gov/>

H1N1 Solution #2.
Public TV
 e.g., Mongolia teachers addressing H1N1
 (Otgo Okhidol, Nov 10, 2009)

H1N1 Solution #3.
Create Online Class Space for H1N1
 (e.g., Microsoft Office Live, Google Sites)

H1N1 Solution #4.
Streaming Class Video for Remote Students
 (e.g., Tegrity, Univ of Central Florida)

H1N1 Solution #5.
Webinars
 (Elluminate, Dimdim, WebEx, Adobe Connect Pro)

What can you do?

- Take home course packets
- Post syllabus and content online
- E-books and other resources
- Fully online courses



What else can you do?

- Videotape master teachers
- Learning packets to be sent home
- Interactive study guides online
- Phone hotline for homework
- Online resources, textbooks, online databases, and Google Docs



(EdWeek.org)

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



Some Online Motivational Ideas



Ok, Million Dollar Question: How do you motivate online learners? What Words come to mind?



I even reflected on this for a moment...



TEC-VARIETY Model for Online Motivation and Retention

1. **Tone/Climate:** Psych Safety, Comfort, Belonging
2. **Encouragement, Feedback:** Responsive, Supports
3. **Curiosity:** Fun, Fantasy, Control
- ...
4. **Variety:** Novelty, Intrigue, Unknowns
5. **Autonomy:** Choice: Flexibility, Opportunities
6. **Relevance:** Meaningful, Authentic, Interesting
7. **Interactive:** Collaborative, Team-Based, Community
8. **Engagement:** Effort, Involvement, Excitement
9. **Tension:** Challenge, Dissonance, Controversy
10. **Yields Products:** Goal Driven, Products, Success, Ownership

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1. Tone/Climate: (open, inviting)

A. Create a Class Wiki (Wikispaces)

2. Encouragement, Feedback, etc.:

A. Online Self-Testing (e.g., self study in vocabulary, anatomy, chemistry, dissection, etc.)

2. Encouragement, Feedback, etc.:

B. Practice Reading, Math, and Geography Skills (e.g., A Grain of Rice)

3. Curiosity, Fun:

A. Virtual Field Trips


Web brings national parks closer to kids

With virtual field trips, students can have a personal tour of Hawaii Volcanoes National Park.

Ranger Rachel Zimmer speaks with Syler Peralta-Ramos, a fourth-grader at Jackson Hole's Journeys School.

3. Curiosity, Fun: B. Online News (Giant jellyfish, Tiny T. rex, and Ardi)

Japanese fishermen brace for giant jellyfish







First U.S. man since 1982 wins NYC race




Australia: Boat sinks with 39 on board







3. Curiosity, Fun: B. Online Science. Species Portals Ida (a transitional species); 47-Million-Year-Old Darwinius Masillae Fossil the Missing Link? (wowOwow, May 20, 2009)






horizons blog

4. Variety, Novelty: A. Free Text Chats (Bonk, 2007; Mei-Ya Liang, 2007)

A chat to Antarctica

5. Autonomy, Choice: A. Online Literature Search (Class Google Jockeys)

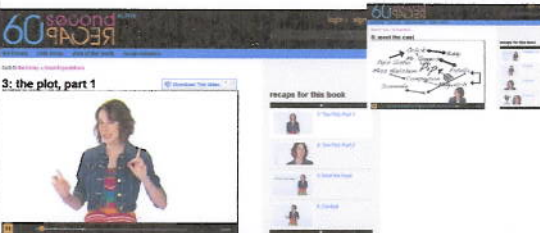




5. Autonomy, Choice: B. Clickers; Innovation is but one click away...






6. Relevance, Meaningfulness: A. 60 Second Recap <http://www.60secondrecap.com/> Actress to students: Lend me your earbuds! English major, 24, rambunctiously recaps the classics in 60-second Web videos; By Greg Toppo; USA TODAY, September 2009



**7. Interactive, Collaborative:
A. Collaborative Documents (Google Docs)**

The screenshot shows the Google Docs web interface. At the top, there's a navigation bar with 'File', 'Edit', 'View', 'Insert', 'Format', 'Tools', and 'Help'. Below that, a document titled 'Google Docs' is open, showing a list of items. To the right, a 'Snacks' spreadsheet is visible with columns for 'Cheese', 'Sausage', and 'Crackers'. The spreadsheet contains various snack names like 'Munster', 'Cheddar', 'Swiss', 'Edam', 'Gouda', 'Summer', 'Boursin', 'Korleska', 'Mascabla', 'Salsina', 'Sweet Basil', 'Triscuit', 'Sabra', 'Whole Toast', and 'Garden of Eatin'.

**7. Interactive, Collaborative:
Interactive, Collaborative:
B. Instructor Wiki portal page**

The screenshot shows a Wiki portal page titled 'Welcome to Mr. Olliphant's Wikispaces'. The page features a central graphic with the text 'THE 21st CENTURY KID!' and an illustration of a child. The page is filled with text and links, typical of a collaborative wiki environment.

7. Interactive, Collaborative: C. International Children's Digital Library (ICDL) project (Univ. of Maryland, *Black Beauty*, *Aesop's Fables*, *Little Red Riding Hood*, *Grimm's Fairy Tales*, *Robinson Crusoe*, and *Mother Goose*.)

The screenshot shows the International Children's Digital Library (ICDL) project interface. It displays several colorful story pages, including 'Black Beauty', 'Aesop's Fables', 'Little Red Riding Hood', 'Grimm's Fairy Tales', 'Robinson Crusoe', and 'Mother Goose'. The interface is designed to be user-friendly for children, with large text and vibrant illustrations.

**7. Interactive, Collaborative:
D. Monster Writing (describe monster in writing to partner and must draw it); monsterproject.wikispaces.com**

The screenshot shows the Monster Project Wikispaces page. It features a central graphic of a monster and text instructions for a writing activity. The page is designed to be interactive and collaborative, with a focus on creative writing and drawing.

**7. Interactive, Collaborative:
E. Online Community and World Teams in Ning, Google Groups, or Yahoo Groups**


The screenshot shows a Yahoo! Groups page for Santa Fe High School. The page includes a header with the school name, a navigation menu, and several sections of text and images. The layout is typical of a community group page, designed to facilitate communication and collaboration among members.

**8. Engagement, Effort:
A. Follow Online Adventure
Australian adventurer Don McIntyre and teenage circumnavigator Mike Perham to re-enact Capt William Bligh's epic mutiny on the Bounty open boat voyage, September 9, 2009**

The screenshot shows an online adventure page featuring photos of Australian adventurer Don McIntyre and teenage circumnavigator Mike Perham. The page includes a map and text describing their re-enactment of Capt William Bligh's epic mutiny on the Bounty open boat voyage, September 9, 2009. The page is designed to be engaging and informative, with a focus on the adventure and the participants.


The R2D2 Method

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



1. Auditory or Verbal Learners

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



Read 1a.

Listen to Podcasts of Famous Literature, History, Politics, or Religion (e.g., Shakespeare, Dalia Lama,)




Poll #4: Podcast Questions

1. Have you listened to a podcast?
2. Do you listen to a certain podcast on a regular basis?
3. Have you created a podcast?
4. Have you created a vodcast?
5. Do you think podcasting is simply more talking heads?



Read 1b.

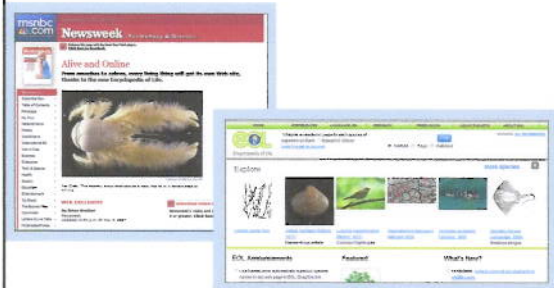
Articles in Science Portals (e.g., Complete Works of Charles Darwin, Einstein, etc.)



Read 1c. Art and History Exhibits



Read 1d. Online Portal & Resource Explorations
(Encyclopedia of Life, history, science, poetry, literature, etc.)



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



Reflect 2a. Partner & Team Blogs
(especially English writing class)



Reflect 2b. ORL or Library Day
(Bonk, 1999)

- Have students spend a day in the library or online finding and summarizing a set number of articles.
- Have them bring to class or post abstracts to an online forum.
- Share in small groups interested in similar topics.
- Perhaps give each student 1-2 minutes to describe what found in a chat.

3. Visual Learners

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



Display 3a. Online Timelines
(US Presidents)



Display 3b. Video iPod Vocabulary Training



One of Michelle Tanner's deaf students at Gerald Wright Elementary holds an iPod and watches a video of her signing the week's vocabulary words. The iPods were purchased with a grant from Qwest.

Classrooms go high-tech. By Erin Stewart, Deseret Morning News, March 6, 2007

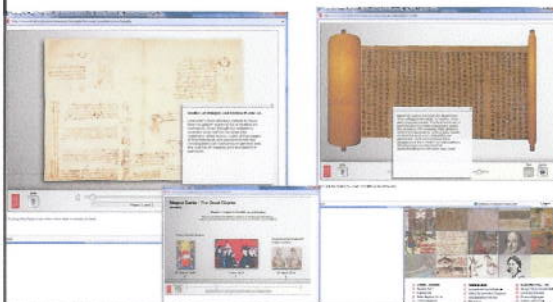
Display 3c. Concept Mapping and Timeline Tools (VUE, Bubbl.us, Cmap, Freemind, Glify, Mindmeister, or Mindomo)



Display 3d. United Nations Opens World Digital Library, April 21, 2009
 Chronicle of Higher Ed, <http://www.wdl.org/en/>



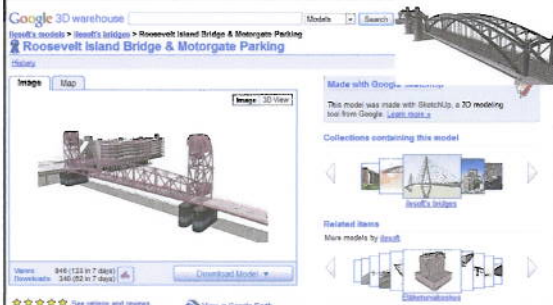
Display 3e. Online Historical Document (e.g., Turning The Pages, British Library)



Display 3f. Online History Portals and Resources (Civil Rights Digital Library and Amistad)



Display 3g. Download and Use Online 3D Sketches (Google SketchUp; download <http://sketchup.google.com/3dwarehouse>)



Display 3h. Explore Virtual Worlds and Online Representations (UCLAs CVRLab, Univ. of Virginia)

The image shows a screenshot of the UCLA Cultural VR Lab website. On the left, there is a virtual museum gallery with classical architecture. On the right, there is a 3D rendering of a classical building with columns. Below the gallery, there is a 'TEAM' section with a profile for 'Paul F. Hirsch' and a bio: 'Paul F. Hirsch is Professor of the UCLA Outreach VR Lab. The author of four books and more articles, he is also Director of Instruction of the Network's VR Program, co-creator of the OpenWorld VR system, and co-creator of the OpenWorld VR system. He is also a member of the National Science Foundation and the National Geographic Society. He has received several awards for his work in the field of virtual reality and education.' There is also a profile for 'Peter Fuchs'.

Display 3i. Shared Online Video (WatchKnow, Monkeysee, TV Lesson, TeacherTube, Link TV, CNN Video, Fora TV, etc.)

This block contains a collage of various online video sharing and educational platform interfaces. It includes screenshots of WatchKnow, Link TV, and other video sharing sites. There are also images of educational content, such as a person in a lab coat and a person in a field.

Display 3j. Videos of the Periodic Table (University of Nottingham)

The image shows a screenshot of the 'The Periodic Table of Videos' website. The main focus is a video player for the element Sodium (Na). The video title is 'ELEMENT: Sodium' and the symbol is 'Na' with atomic number '11'. The video shows a close-up of a sodium metal sample being handled in a laboratory setting. There are also smaller thumbnails for other elements and a periodic table grid.

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.

The image features a circular diagram with four quadrants: 'Doing' (top-left, yellow), 'Understanding' (top-right, blue), 'Reflecting' (bottom-right, red), and 'Evaluating' (bottom-left, green). The center of the circle contains the text 'Learning Cycle'. To the right of the diagram are several small images illustrating tactile/kinesthetic learning activities, including a person in a lab coat, a person in a field, and a person in a classroom.

Do 4a. Student Podcast (in schools—kids have power!)

This block contains a collage of student podcast websites and audio player interfaces. It includes screenshots of 'Hip Hop Ecology', 'They and They', 'Water's End', and 'School Australia'. There are also images of audio players and logos for 'Radio Web' and 'iBrain'.

Do 4b. Wikis for Kids to Share

The image shows a screenshot of a wiki page titled 'Littlewood's Nature Guide'. The page has a green header and a navigation menu with options like 'Home', 'Discussions', 'Photos', 'Videos', 'Updates', 'To-Do's', 'Dropouts', 'Members', and 'Invite'. The main content area is titled 'Pictures' and displays a grid of nature photographs, including images of plants, insects, and a person in a field.

Do 4c. Junior Wikibooks

The screenshot shows a Wikibooks page with a blue header and a main content area. On the left, there's a sidebar with navigation links. The main content area features a large image of a green frog and a smaller image of a person reading a book. The text on the page is partially obscured but includes the title 'The Digital Dissection Online Tutorial'.

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

This collage includes several images: a book cover for 'The Digital Dissection Online Tutorial', a frog being dissected, a frog dissection diagram, and a screenshot of the Net Frog website interface. The website interface shows a navigation menu and a main content area with text and images.

Do 4e. Using Online Video (e.g., YouTube) to Memorize Sonnets and Poems

Two YouTube video thumbnails are shown side-by-side. The left one features a close-up of a person's face with a red rose and the title 'How to Memorize Sonnets'. The right one shows a man in a suit and hat, also with the title 'How to Memorize Sonnets'.

Recap of the Perfect E-Storm....

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

The block contains three images: a lightning storm over a dark landscape, a globe showing a storm system, and a satellite image of a storm system.

Poll #5: How many ideas did you get from this talk?

1. 0 if I am lucky.
2. Just 1.
3. 2, yes, 2...just 2!
4. Do I hear 3? 3!!!!
5. 4-5.
6. 5-10.
7. More than 10.

A cluster of white balloons with a single yellow balloon in the center, symbolizing a poll or a group of ideas.

Try the R2D2 Method!!! Try TEC-VARIETY!!!

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

Three images: a person holding a glowing lightsaber, a person making a peace sign, and a person in a dark hood holding a glowing object.