

## 50 Emerging Learning Technologies

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## Technology of the 1980s



**Radio Shack TRS-80 Model III**  
 Introduced: July 1983  
 Price: US \$899 base model  
 US \$245 w/ 320K dual drives  
 CPU: Zilog Z-80, 2.03 MHz  
 RAM: 4K, 48K max.  
 Ports: Cassette tape, expansion, serial  
 Display: 12-inch B&W monitor 8.4 x 11.6 in.  
 Storage: 0, 1, or 2 internal 175K floppy drives  
 External cassette @ 500 / 1500 baud  
 OS: BASIC in ROM, TRS-DOS on disk



## Smaller, thinner, lighter, and new interfaces for mobile



## And Cheaper!



### DataWind Prepared \$20 Tablet Computer for Indian Market

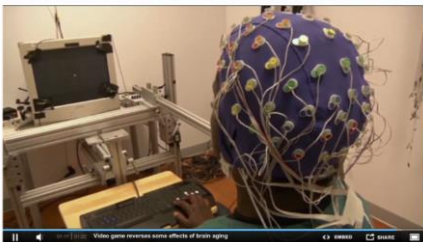
Jan 30, 2013 4:10 AM EST  
 A Canada-based company believes it can revolutionize education in India by rolling out a \$20 tablet computer.



## Some Technologies Go Overboard!

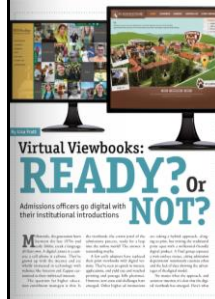
<http://www.usatoday.com/story/news/nation/2013/09/04/video-games-brain-power-dementia/2752523/>

Video games may improve brain power in older adults



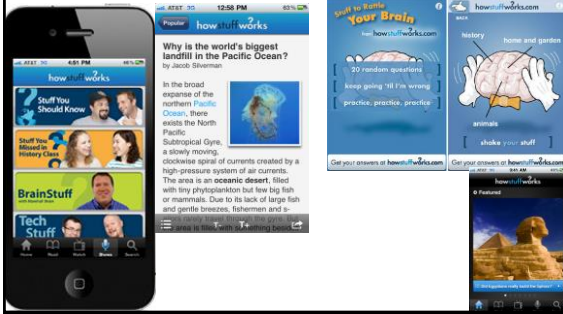
## Tech #1. Virtual Viewbooks: Ready or Not?, University Business, Sept 2012, Lisa Fratt

<http://www.universitybusiness.com/article/virtual-viewbooks-ready-or-not>





### August 18, 2011 HowStuffWorks, iPhone App, USA Today, Marc Saltzman



### Poll: Do you suffer from nomophobia?



### Tech #5. Web Conferencing (e.g., team projects, class meetings, language learning, etc.)

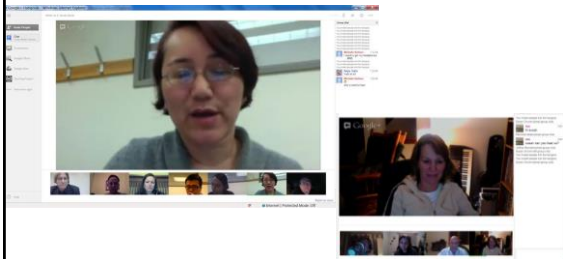


### Web Conferencing Language Learning

UC Irvine, *Fundamentals of Chinese*, Dr. Ying Petersen, Fall 2012, Winter 2013  
Tech-Enhanced: *EE Advance/WeSpace* (Dreamweaver), *Skype* video conferencing, *UCI Replay*, *Active Learning*  
Format: 4 - 1A lectures (24 student maximum); 2A - 3 lectures (24 student maximum); 3A - 1 lecture (24 student maximum)



### Using Google Hangouts for Class (January 2013)



### November & December 2012 Guest Speakers Designing a New Learning Environment Professor Paul Kim, Stanford University <http://venture-lab.org/education/lectures/45>



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## Tech #6. Videoconferencing

### Videoconferencing (first demo in 1964 at the World's Fair; use increased in 2003)

Tablets Rock On: Education Tech Through The Ages, Information Week, February 26, 2013  
<http://www.informationweek.com/education/instructional-2/blended-learning-improves-test-scores-31249159849/>

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## Cross-Institutional Wikibook Project (e.g., IU and the University of Houston)

## Tech #7. Digital Books

## OpenStax College

(OpenStax College offers students free textbooks that meet scope and sequence requirements for most courses. These are peer-reviewed texts written by professional content developers.)  
<http://openstaxcollege.org/>

## January 22, 2013

### Free digital textbooks surge in popularity, Sarah Langmead, Assistant Editor, eCampus News,

<http://www.ecampusnews.com/features/ecampus-news-free-digital-textbooks-surge-in-popularity/>

## Chegg (free textbooks)

<http://www.chegg.com/>



## Digital Books

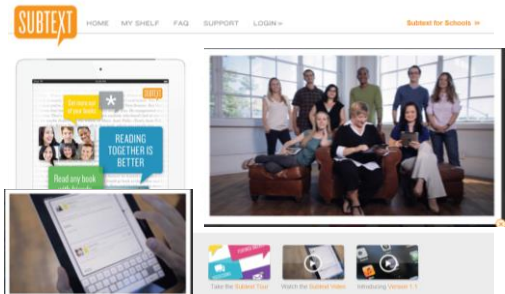


## Tech #8. User-Designed E-Books. How to turn Wikipedia into an e-book, John D. Sutter

[http://www.cnn.com/2012/09/18/tech/mobile/wikipedia-e-book/index.html?hp\\_hp\\_13](http://www.cnn.com/2012/09/18/tech/mobile/wikipedia-e-book/index.html?hp_hp_13)

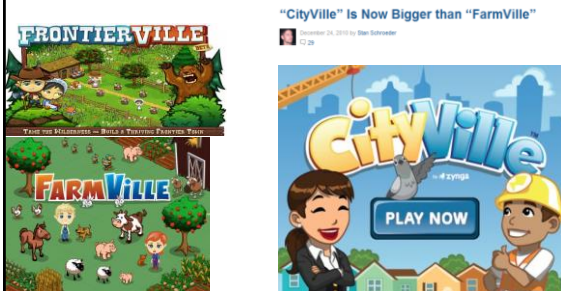


## Tech #9. Social Books (e.g., Subtext; <http://subtext.com/>)



## Tech #10. Social Networking Gaming

*CityVille* 16.8 million daily users, *FarmVille*'s 16.4 million. *CityVille* 61.7 million monthly users, *FarmVille* 56.8 million users. Mashable.



## Tech #11. Shared Online Video. February 21, 2012

### Rethinking Learning with Salman Khan Stanford Graduate School of Business

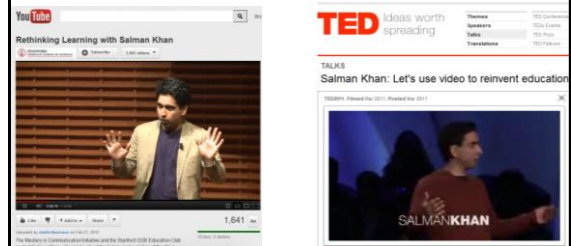
<http://www.youtube.com/watch?v=W-y68hQaW>

Khan Academy Founder Finds Simplicity Appeals in Online Education Experimentation

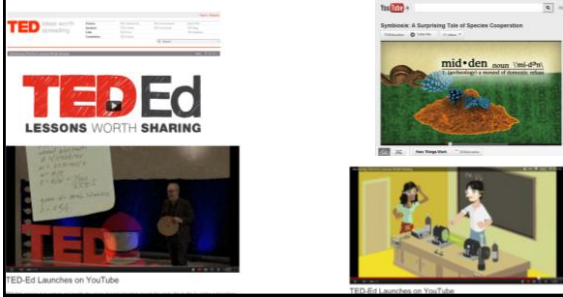
<http://www.gsb.stanford.edu/news/headlines/sal-khan-academy.html>

Let's use video to reinvent education, TED, March 2011

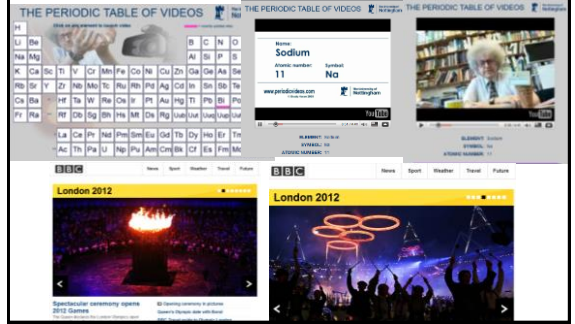
[http://www.ted.com/talks/salman\\_khan\\_let\\_s\\_use\\_video\\_to\\_reinvent\\_education.html](http://www.ted.com/talks/salman_khan_let_s_use_video_to_reinvent_education.html)



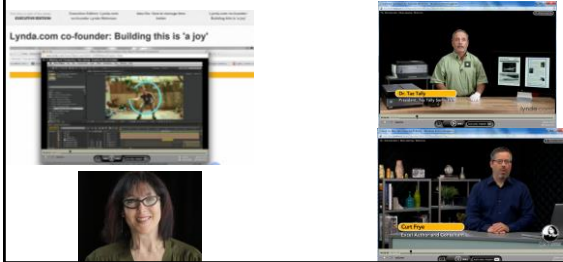
**March 13, 2012**  
**Educational Videos: TED-Ed**  
<http://education.ted.com/>



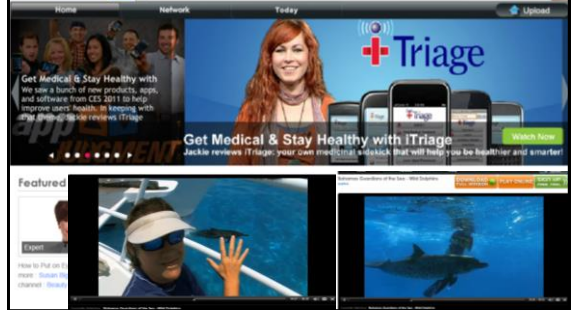
**Video is Popular in the UK**  
**(Videos of the Periodic Table, Univ of Nottingham)**



**April 23, 2013**  
**Video is Popular in the USA**  
**Lynda.com co-founder: Building this is 'a joy'**  
**USA Today, Jefferson Graham**  
<http://www.usatoday.com/story/business/2013/04/23/lynda-com-co-founder-interview/2279501>



**TV Lesson**  
**(expert videos)**



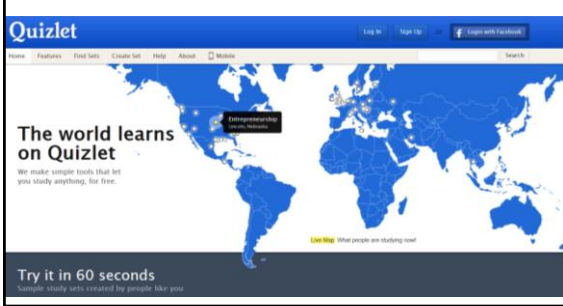
**Tech #12. Concept Mapping and Timeline Tools (Popplet, Bubbl.us, Cmap, Freemind, Glify, Mindmeister, or Mindomo)**



**Tech #13. Online Study Groups (e.g., Open Study: <http://openstudy.com/>)**



## Tech #14. Online Teaching (Quizlet; <http://quizlet.com/>)



## Tech #15. Mobile Dictionaries



## Tech #16. Collaborative Tools (e.g., Google Docs)

Google docs

Create and share your work online

- Upload from and save to your desktop
- Edit anytime, from anywhere
- Pick who can access your documents
- Share changes in real time
- Files are stored securely online
- It's free!
- [Take a tour](#) • [New Features](#)



## Tech #17. Collaboration and Sharing: SlideShare

slideshare

Home Browse My Slidespace Upload Community Widgets

Upload and share your PowerPoint presentations, Word documents and Adobe PDF Portfolios on SlideShare. Share publicly or privately. Add audio to make a webinar. [Take a tour](#) or [Start Uploading!](#)

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- EDUCATION
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ADORE ACADEMY'S **WORLD'S BEST PRESENTATION CONTEST!**

You voted, the judges decided, and **THE WINNERS ARE...**

[VIEW RESULTS](#)

Hot on Facebook

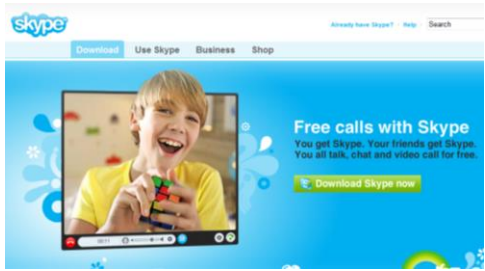
Healthcare, Indiana, IN | 1897 likes, 153 reviews

Search on the App Store | Get it on Google Play | 100+ users | 1 follower

## Tech #18. Collaborate using Wikis: PBworks



## Tech #19. Online Communication: Skype



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## Tech #20. Twitter (microblogging)

education

follow us on twitter

Follow me!

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## GroupTweet (freely communicate and collaborate privately)

GroupTweet helps groups communicate privately via Twitter

How it Works

Get Started

Join a New Group

Configure an Existing Group

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## Tech #21. Facebook Fan Pages (class, department, university collaboration sites)

Macalester College Class of 2014

Facebook

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## Tech #22. Virtual Mentoring

South African teens get virtual mentoring from all over the world, By Danielle Berger, CNN, January 14, 2011  
<http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=72>

CNN Living

CNN HEROES

South African teens get virtual mentoring from all over the world

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## Tech #23. Adventure Learning (e.g., Aaron Doering, Univ of Minnesota)

Explore HELPING LEARNERS LEARN...

Trial Reports

Aaron Doering

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## Ice Stories Project (Exploratorium)

Ice Stories dispatches from polar scientists

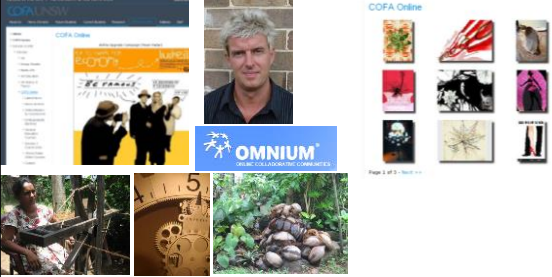
Melting Antarctica

MELTING ANTARCTICA: MEASURING ECOLOGICAL CHANGE AND WARMING AT THE ANTARCTIC PENINSULA



  
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## Tech #24. Online Photomedia Projects (Omnium, Univ of New South Wales)



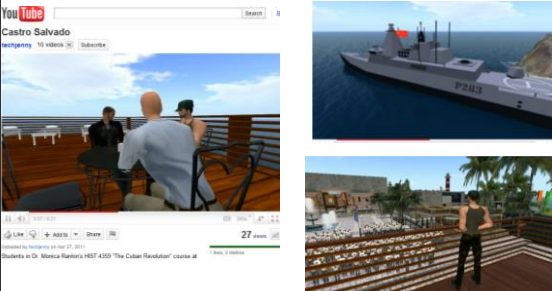
  
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## Tech #25. Virtual Worlds (Class Meetings with Experts in Virtual Worlds)



## Virtual World Simulations (e.g., Dr. Monica Rankin's class, UT Dallas, Cuban Revolution)

<http://www.youtube.com/watch?v=D4uBhZN9Oos>



## Virtual or Augmented Reality Training Web-based Land Navigation Trainer Tutorial

<http://www.youtube.com/watch?v=8-WY9nazoGU>  
See article: <http://www.delftconnect.com/article/2013/06/13/3016130023/acad-New-Masses>



  
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## Tech #26. Blogs (e.g., Blogger)



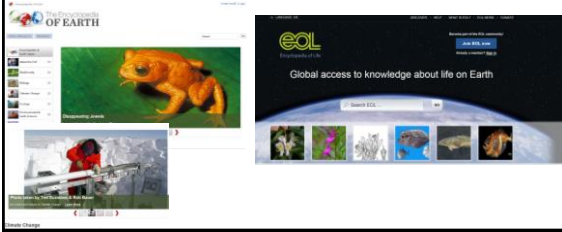
  
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## Tech #27. Vlogs (Blogs with video)



### Tech #28. Online Referenceware (Encyclopedias, Dictionaries, etc.) (e.g, the Encyclopedia of Life, Encyclopedia of Earth, etc.)

<http://www.eoearth.org/> <http://eol.org/>



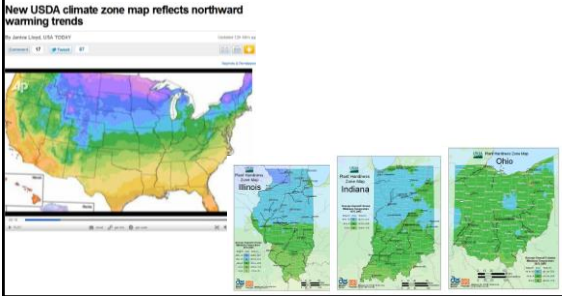
### Tech #29. Media Tools: Timelines, Maps, Pics, Videos, etc. (e.g., USA Today, August 26, 2011)

<http://www.usatoday.com/news/50thAnniversary/story/2011-08-25/Martin-Luther-King-Jr-Memorial-in-Washington-A-closer-look/52787142/1?img=34news>

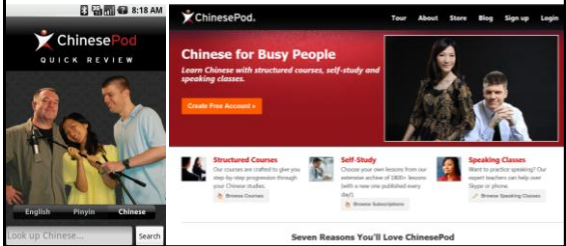


### Interactive Online Maps (e.g., New USDA climate zone map reflects northward warming trends, By Janice Lloyd, USA TODAY, January 26, 2012)

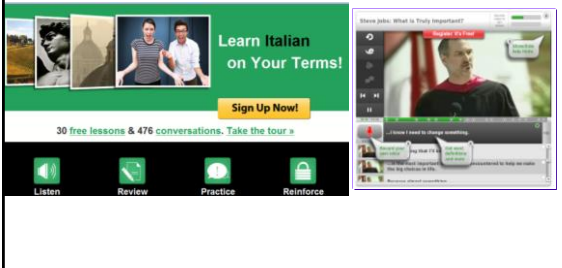
<http://www.usatoday.com/news/nation/environment/story/2012-01-26/USDA-climate-zone-map/52787142/1>



### Tech #30. Online Language Learning (e.g., 300,000 people per month listening to ChinesePod, co-hosted by Jenny Zhu, John Pasden, and Ken Carroll)



### Online Language Learning January 27, 2010 and Feb 5, 2010: The Web Way to Learn a Language, NY Times, ERIC A. TAUB (e.g., EnglishCentral, iTalki, Palabea, Babbel)



### Adventures of a Teenage Polyglot, New York Times, March 9, 2012, John Leland

[http://www.nytimes.com/2012/03/11/nyregion/a-teenage-master-of-languages-finds-online-relationship.html?\\_r=1&page=wantadot](http://www.nytimes.com/2012/03/11/nyregion/a-teenage-master-of-languages-finds-online-relationship.html?_r=1&page=wantadot)



Timothy posts videos of himself speaking several languages on YouTube.

## Language Training in the Military

**HAWAII ARMY WEEKLY**

Online language training ups the ante on promotion points





This software application is available for mobile devices, the first iPad pre-installed device, and includes a download of the Spanish language. Call or e-mail. Further assistance can be seen upon promotion points for using the online feedback. Language training program developed by US Army, Chatham, Florida.

## Tech #31. Tablet Computing





## March 13, 2011

### iPad Apps for Calculus, Math, Biology, etc.

Chronicle of HE, Ben Wieder

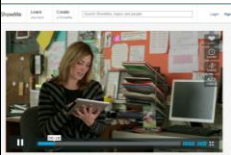


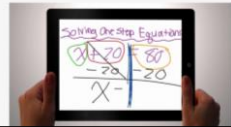
[http://chronicle.com/article/iPads-for-College-Classrooms-/126681?cid=at&utm\\_source=at&utm\\_medium=en](http://chronicle.com/article/iPads-for-College-Classrooms-/126681?cid=at&utm_source=at&utm_medium=en)

At Pepperdine U. Timothy Lucas, an assistant professor of mathematics, shows a class how to use iPads for calculus. Linda Johnson, an assistant professor of biology at Chatham U., for her plant-physiology

## Lessons on iPad

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



## Paul Kim, SMILE project, Thailand, December 26, 2012




## Tech #32. Virtual Choir

(e.g., Eric Whitacre)

<http://vimeo.com/22960177>  
<http://www.youtube.com/watch?v=D7o7BrlBaDs>

**Tech #33. Video Walls of Experts (IQ Wall)**



**Tech #34. Mobile Video Connections to Experts and Friends**



**Tech #35. Expert Access from Our Watches**

Samsung: We're making a smart watch, too

Doug Gross, CNN Tech, March 19, 2013

[http://www.cnn.com/2013/03/19/tech/mobile/samsung-watch/index.html?hpt=hp\\_bn5](http://www.cnn.com/2013/03/19/tech/mobile/samsung-watch/index.html?hpt=hp_bn5)



**September 4, 2013**

First impression: Galaxy Gear - welcome to wearable computing, USA Today, Edward Baig

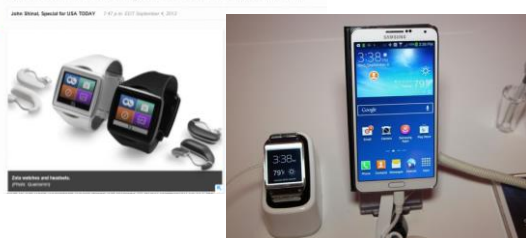
<http://www.usatoday.com/story/tech/gear/2013/09/04/future-for-samsung-smart-watch/2764887>



**Qualcomm is seeding market for the smartwatch, USA Today, John Shinal, September 4, 2013**

<http://www.usatoday.com/story/tech/columnist/2013/09/04/qualcomm-smartwatch-seeds-tech-economy/2763871/>

Qualcomm is seeding market for the smartwatch



**Tech #36. Science on a Sphere (interactive globe), January 7, 2013,**

Digital Globes Offer a Dynamic Vision, NY Times, Mark Vanhoenacker

[http://www.nytimes.com/2013/01/08/science/digital-globes-a-new-way-to-view-the-world.html?\\_r=1&hp&headlines&emc=edit\\_10\\_20130108B\\_r=1](http://www.nytimes.com/2013/01/08/science/digital-globes-a-new-way-to-view-the-world.html?_r=1&hp&headlines&emc=edit_10_20130108B_r=1)



**September 19, 2013**

**Science on a Sphere offers new way to visualize data on a global scale, Indiana University Press**  
<http://iitnews.iu.edu/articles/2013/10/19/science-on-a-sphere-offers-new-way-to-visualize-data-on-a-global-scale.php>



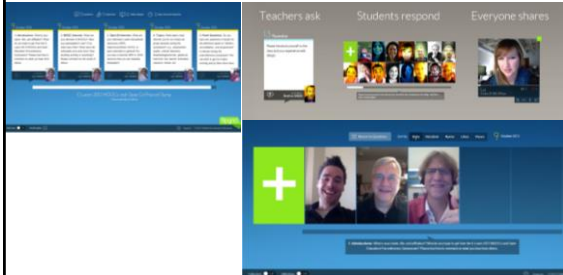
**Tech #37. Interactive Globe with News**

[http://www.mytimes.com/2013/01/08/science/digital-globes-a-new-way-to-view-the-world.html?ci=1&daysheadlines&mc=sd01\\_10\\_20130108B\\_r=1](http://www.mytimes.com/2013/01/08/science/digital-globes-a-new-way-to-view-the-world.html?ci=1&daysheadlines&mc=sd01_10_20130108B_r=1)



**Tech #38. Video-Based Online Discussions (e.g., Flipgrid; see**

<http://flipgrid.com/#429f88c5>)

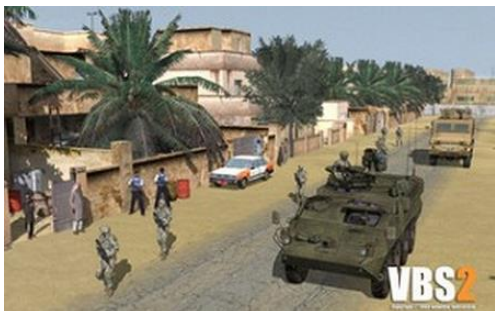


**Tech #39. Voice Feedback**

Vocaroo; <http://vocaroo.com/>  
<http://vocaroo.com/i/s11SEn81ZMC> (U of Taipei)



**Tech #40. Simulation Games**



**Tech #41. Talking Dictionaries**  
**Oral Online Dictionaries Help Preserve Languages, Cultures Muted by Modernity, The Wall Street Journal, February 18, 2002**

<http://online.wsj.com/article/SB10001424052970204880404577228982976760026.html?articleTab%3Dinteractive>



### Tech #42. Remote Animal Streaming

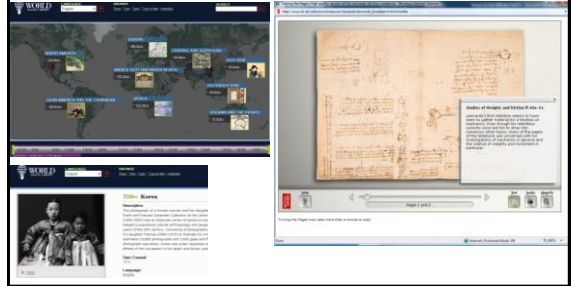
Remote Maine puffin colony up close on HD web cam  
Clarke Canfield, The Statesman, June 27, 2012

<http://www.statesman.com/business/technology/remote-maine-puffin-colony-up-close-on-hd-2405247.html>



This still frame from streaming online video, provided by explore.org, the Annenberg Foundation and the National Audubon Society, shows puffins on the shore of Seal Island, Maine, Wednesday, June 27, 2012. The island is the habitat for the largest puffin colony in the U.S.

### Tech #43. Online Portals of Rich Data United Nations Opens World Digital Library, Turning the Pages from the British Library, etc. (history, culture, literature, writing, art, etc.)



### Learning Portals, April 3, 2012 Google Art Project, NBC Nightly News

<http://www.msnbc.msn.com/id/3032619/vp/46945508#46945508>



### Tech #44. Google Glass. June 27, 2012 ABC News, Google I/O Conference: Project Glass Prototype For Sale

<http://abcnews.go.com/Technology/google-project-glass-prototype-offered-people-to-conform/story?id=15663376>



### Tech #45. Google Wi-Fi from the Sky, Steven Levy, pp. 126-131, Wired, September 2013

<http://www.wired.com/gadgetlab/2013/08/googlex-project-loon/>



Google X chief Astro Teller (left) and Project Loon's first leader, Rich DeVaul, holding the system's ground-based antennas.

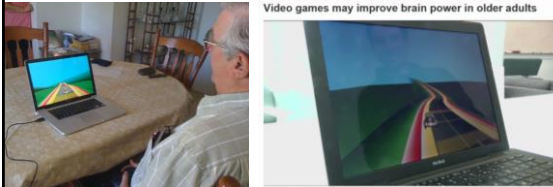
### Tech #46. Video games How Video Games and Social Media Fuel Students' Passion for Art, Katrina Schwartz Mind/Shift, August 8, 2013

<http://thelearningtechnologycenter.com/newsroom/guest-writers/mind-shift-systems-artists-passion/>



### Video games may improve brain power in older adults

Video games may improve brain power in older adults, September 5, 2013  
<http://www.usatoday.com/story/news/health/2013/09/04/video-games-brain-power-Science/2764522/>



### Tech #47. Broadcast Yourself Google+ Hangouts On Air: broadcast your conversation to the world

<http://googleblog.blogspot.com/2012/05/people-hangouts-on-air-how-to-use-it.html>



### Tech #48. Expert Tutors as Mobile Apps (e.g., Tutor.com)

**Tutor.com To Go™ Releases the First Education App that Connects Students to an Expert Tutor**

NEW YORK, April 2, 2012 - Tutor.com, the largest online tutoring and homework help center, today announced a new service, Tutor.com To Go™. The app, the first education app of its kind, will allow students to connect to expert tutors for real-time help on their phones, tablets, iPads, and iPod touches.

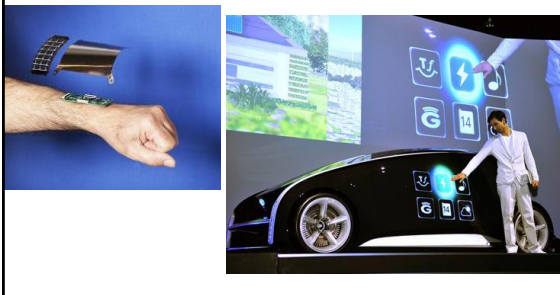
Tutor.com To Go™ connects students to get the high quality help they have come to expect from Tutor.com on the go. The app, which is available for free, will be available on the iTunes App Store and the Google Play Store. The app is available for free, and will be available on the iTunes App Store and the Google Play Store. The app is available for free, and will be available on the iTunes App Store and the Google Play Store.

**Tutor.com To Go™**  
 for iPhone, iPad & iPod Touch

### Tech #49. Robots Teaching English (Meeyong Kim, South Korea)



### Tech #50. Flexible Displays Flexible displays bend what's possible for computers, Jon Swartz, USA Today (May 4, 2012)



### Any Questions?

- 😊 Slides at: [TrainingShare.com](http://TrainingShare.com)
- 😊 Papers: [PublicationShare.com](http://PublicationShare.com)
- 😊 Book: <http://worldisopen.com/>
- 😊 Email: [curt@worldisopen.com](mailto:curt@worldisopen.com)

