

Active Learning with Technology: Myths, Magic, and Mucho Motivation



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Technology of the 1980s



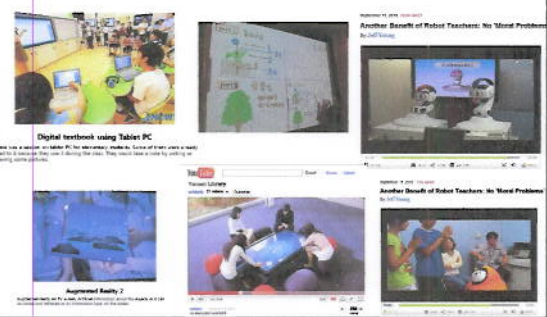
Radio Shack TRS-80 Model III
Introduced: July 1980
Price: US \$699 bare model
US \$1495 w/ 32K, dual drives.
CPU: Z80p Z-80, 2.83 MHz
RAM: 4K, 48K max.
Perf: Cassette tape, expansion, serial
Display: 12-inch GVM monitor, 64 K x 16 font
Storage: 0, 1, or 2 internal 1.7MB floppy drives;
External cassette @ 500 1.500 baud
OS: BASIC in ROM, TRS-DOS on disk



New technologies hit us everyday!



So much to keep track of!



Poll #1: Who finds it hard to keep track of all the technology-related changes???



It's Nature (i.e, technology) and Nurture (i.e., pedagogy)!



Part I. Some Online Motivational Ideas

We are not motivating students with the technologies that they love!

Intrinsic Motivation

“...innate propensity to engage one’s interests and exercise one’s capabilities, and, in doing so, to seek out and master optimal challenges
(i.e., it emerges from needs, inner strivings, and personal curiosity for growth)

See: Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. NY: Plenum Press.

What if students minds were on fire for learning? i.e., Jumbo Motivation!

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

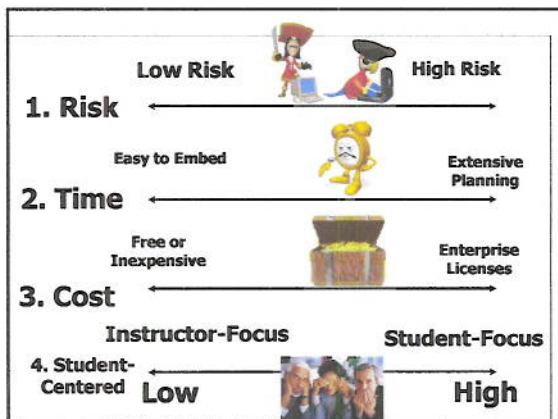
Motivation Research Highlights (Jere Brophy, Michigan State University)

1. Supportive, appropriate challenge, meaningful, moderation/optimal.
2. Teach goal setting and self-reinforcement.
3. Offer rewards for good/improved performance.
4. Novelty, variety, choice, adaptable to interests.
5. Game-like, fun, fantasy, curiosity, suspense, active.
6. Higher levels, divergence, dissonance, peer interaction.
7. Allow to create finished products.
8. Provide immediate feedback, advance organizers.
9. Show intensity, enthusiasm, interest, minimize anxiety.
10. Make content personal, concrete, familiar.

I even reflected on this for a moment...and then something magical happened...

Magic #1: TEC-VARIETY Model for Online Motivation and Retention

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



1. Tone/Climate: Social Ice Breakers

A. Public Commitments:
Have students share how they will fit the coursework into their busy schedules

B. Favorite Websites

- Everyone posts 1-2 of their favorite Websites and explain why.
- Peers comment on or rate them.

1. Tone/Climate: C. Video Course Intros
(examples from Northern Virginia Community College and Indiana University KD (online MBA) program)

2. Encouragement, Feedback, etc.:

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

2. Encouragement, Feedback, etc.: B. Tutorials with Screen Capture (e.g., Jing, Screnr)

2. Encouragement, Feedback, etc.: C. Video Scenario Learning Accounting Interviews and Preparatory Course Review Modules (Franklin University, cost and forensic accounting course)

<http://video.franklin.edu/Franklin/acct/managerialAccounting/cost-behavior-please.html>
<http://video.franklin.edu/Franklin/acct/352/common/fraudScenario02.html>

2. Encouragement, Feedback, etc.: D. Self-Paced Learning (e.g., accounting lessons, Podcasting Lectures)

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

3. Curiosity, Fun: B. Online Experiments (e.g., psychology)

3. Curiosity, Fun: C. WolframAlpha (access knowledge)

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

4. Variety, Novelty: A. Cool Resource Provider or Tech Demos..MM

- Have students sign up to be a cool resource provider once during the semester.
- Have them find additional paper, people, electronic resources, etc.
- Share and explain what found with class.

P540 Cool Resource Provider and Moderator Sign Up Sheet

Instructions:

Please put your name in the box for the ONE WEEK that you will be completing your sign up for. Do NOT sign up for more than one week. Please check the sign up sheet before class.

Sign up for:

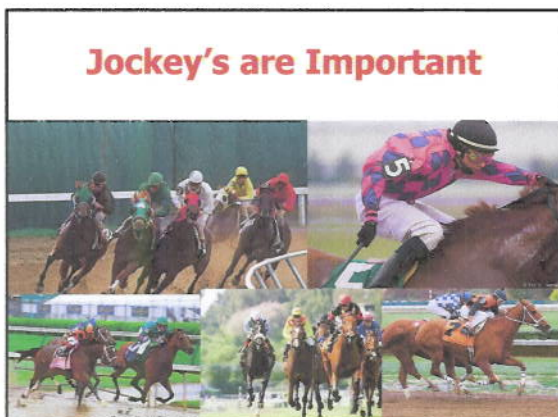
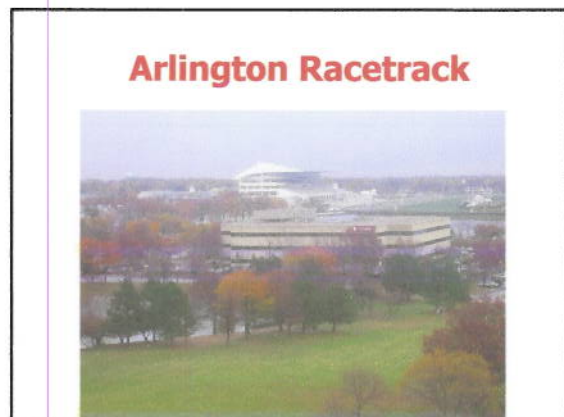
1. Introduction to the Study of Learning
2. Introduction
3. Social Learning Theory

4. Variety, Novelty: B. Synchronous Session with Guest Expert..MM

Finally, we have taken learning to people and places that have been beyond its reach.

4. Variety, Novelty: C. Bridges to World of Expert and Practitioners (e.g., Watch or Listen to Online Conferences, Expert blogs, chats, interviews)

Future Of Education: Is It Possible To De-School Society?
George Siemens



5. Autonomy, Choice: A. Online Information Search (Class Google Jockeys) (links to text, soundtracks, video clips, etc.)

5. Autonomy, Choice:
B. Famous Person Web Explorations, Searches, Twitter Tracking, and Interviews (e.g., Thomas Friedman, NY Times reporter)

The image shows a web page for Thomas L. Friedman. On the left, there is a video player with the title "Intro: What is the Flat World?". On the right, there is a Twitter feed showing tweets from @thomfriedman. The page also includes a search bar and various navigation links.

5. Autonomy, Choice:
C. Online Cases (e.g., Mark Braun, IU)

The image shows an online pathology case study interface. It features a list of cases on the left, a central area with a list of 30 cases, and a right-hand panel with a grid of microscopic images. The cases include various clinical presentations such as "A young woman with headache" and "A man with chronic cough".

6. Relevance, Meaningfulness:
A. Tour an Online Oil Drilling Site or Role Play Situations (i.e., BP)

The image is a collage of images related to oil drilling and BP. It includes a large image of an oil rig at sea, a smaller image of a person on a beach, a map of the Gulf of Mexico, and a video player showing a scene from a BP advertisement.

6. Relevance, Meaningfulness:
B. 60 Second Recap, Jenny Sawyer
<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

The image shows a screenshot of the 60 Second Recap website. It features a video player with Jenny Sawyer, a list of books, and a "Recap for this book" section. The website has a blue and white color scheme.

7. Interactive, Collaborative:
A. Online Language Learning (Skype, MSN, ECpod, Mixer, Livemocha, Babbel, KanTalk etc.)

The image is a collage of images showing online language learning tools and users. It includes screenshots of the SpeakENG Course website, a video player showing a woman speaking, and several images of people using computers and mobile devices for language learning.

More Language Learning Tools (e.g., Paltalk, iTalkie, Palabea)

The image shows screenshots of various online language learning platforms. It includes the Paltalk website, the iTalkie website, and the Palabea website. Each screenshot shows the user interface of the respective platform, including chat windows and video players.

**7. Interactive, Collaborative:
B. Collaborative Groups (Ning, Google Groups, MSN Groups, Yahoo Groups)**

This collage features several screenshots of online group platforms. On the left, there's a Google Groups page for 'Business, Economics and Accounting Clubs (BEAC)'. In the center, a Ning group page for 'Purdue Android Programming' is shown. On the right, an MSN Groups page is visible. At the bottom, there are logos for Ning, a globe, and a network diagram.

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

This collage shows various Google Docs and Spreadsheets interfaces. It includes a Google Docs document editor, a Google Spreadsheets interface with a table of food items, and a Google Docs document with a pie chart. The table in the spreadsheet is as follows:

	A	B	C
1	Cheese	Sausage	Crackers
2	Mustard	Summer	BRI
3	Cheddar	Breakfast	Toucan
4	Swiss	Katibasa	Satine
5	Mozzarella	Mortadella	Mebe Toast
6	Efem	Sakani	Wheat Thins
7	Provela	Sweet Bahian	Goldfish

**8. Engagement, Effort:
A. Synchronous and Asynchronous Events (e.g., Breeze + Video + Online Forum + Online Papers) ...MM**

This collage displays various interfaces for synchronous and asynchronous events. It includes a video conference window with a woman's face, a forum post, and several online paper documents. The text '...MM' is highlighted in red.

**8. Engagement, Effort:
B. Flash, 3-D Visualization, & Laboratory Software**

This collage shows various interfaces for Flash, 3-D visualization, and laboratory software. It includes a 3-D molecular model, a laboratory software interface with a person, and a Flash animation showing a sequence of events.

**8. Engagement, Effort:
C. Tour a Museum (e.g., British Museum, Smithsonian, Louvre)**

This collage features virtual museum tour interfaces. It includes a 3-D virtual museum interior, a screenshot of the British Museum website, and a virtual tour of the Louvre Museum. A small image of the Mona Lisa is also present.

**8. Engagement, Effort:
D. Basic Acoustics of Musical Instruments (University of New South Wales)**

This collage displays interfaces for the basic acoustics of musical instruments. It includes a screenshot of the University of New South Wales website, a virtual instrument interface, and a photograph of a woman smiling.

Sing ALL the "Glee" Songs with iPhone or iPad!
<http://www.youtube.com/watch?v=z4G3BZIOudA>
 It provides the ability for you to sing along with the singers of the show Glee and realtime (less than 50 millisecond delay) correct your pitch and harmony - along with the ability to compile a group singing event from points around the world.
 (per Elliott Masie, Learning Trends #635, September 6, 2010, company is called "Smule")

**9. Tension, Challenge, etc.:
 A. Ethical Debates**

North Korea demands apology, reparations from Japan over colonization
 Museum for protest human body exhibit
 Far, deadliest long-range bombing done

**9. Tension, Challenge, etc.:
 B. Electronic Guests & Mentoring...MM**

Electronic Mentoring Healthcare
 Youth Mentoring

**10. Yields Products, Goals:
 A. Student YouTube Products...MM**

<http://www.youtube.com/watch?v=xiwS1ryPzsQ>
http://www.youtube.com/watch?v=x3FJy4Pn_E
<http://www.youtube.com/watch?v=eD1awpaSuP0>

Virtual Learning - Is it for You?
 Flip Micro
 Virtual Learning - Is it for You?
 Virtual Learning - Is it for You?

**10. Yields Products, Goals:
 B. Video Blogs...MM**

TechCrunch
 Video Marketing for Business: Ying

**10. Yields Products, Goals:
 C. Photo Festivals and Competitions (e.g., COFA at UNSW, Scrapblog, flickr, etc.)**

OMNIUM
 Flickr
 Country Club

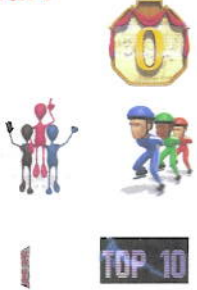
TEC-VARIETY Model for Online Motivation and Retention

Tone/Climate
Encouragement, Feedback
Curiosity

Variety
Autonomy
Relevance
Interactive
Engagement
Tension
Yields Products


Poll #1: How many ideas did you get so far?

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

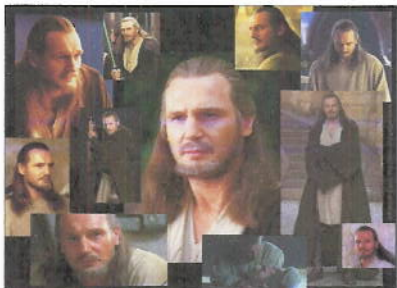


99 seconds: What have you learned so far?

- Solid and Fuzzy in groups of two to four



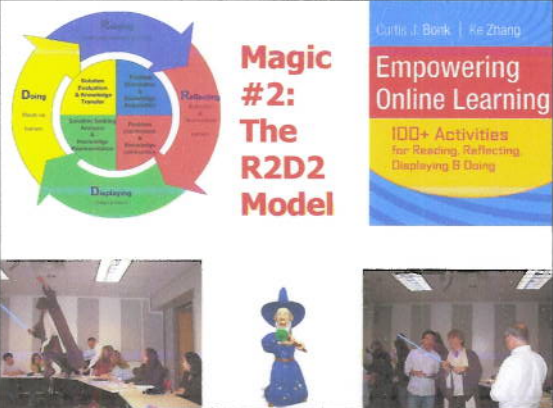
II. Addressing Diverse Learners



Magic #2: The R2D2 Model


Empowering Online Learning

IDD+ Activities for Reading, Reflecting, Displaying & Doing



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. Reading from Open Access Journals (e.g., PLOS)



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



Poll 2: Podcast Questions

- Who has listened to a podcast?
- Who listens to a certain podcast on a regular basis?
- Who has created a podcast?
- Who has created a vodcast?
- Who thinks podcasting is simply more talking heads?

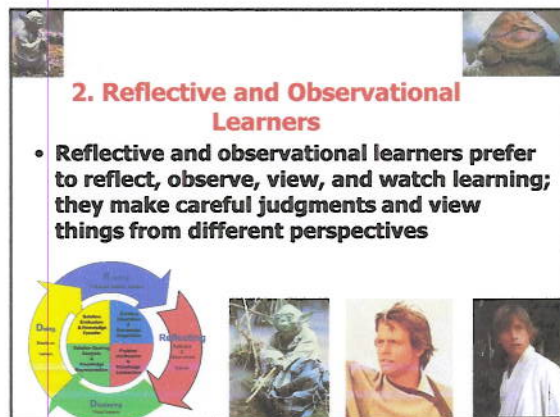


Read 1c. Podcast Paper Reflections



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. Critical Friend Blog Postings...MM

The screenshot shows a blog post from 'Deepali685's Weblog' dated October 10, 2007. The post is titled 'My 100th Blogger's Day' and discusses the author's journey in blogging. It includes a sidebar with a navigation menu and a photo of a group of people at the bottom.

Poll 3: Blogging Questions

- a. Who has a blog?
- b. Who regularly reads other people's blogs?
- c. Who assigns blogging tasks?
- d. Who has created a video blog?
- e. Who thinks it is an utter waste of time to blog?

Reflect 2b. Cultural Blogs (e.g., Dr. Kim Foreman, San Fran State University, Come and See Africa Blog; <http://comeandseeafrica.blogspot.com/>)

The screenshot displays the 'Come and See Africa (CASA)' blog. It features a header with the blog's name and a URL. The main content area is filled with several photographs showing groups of people, likely students or community members, in various settings.

Reflect 2c. Expert and Domain Specific Blog Reflections (English, Health, Business, etc. blogs)

This block contains a collage of four different blog screenshots. From top-left to bottom-right: 'The English Blog' with a person jumping, 'ER Nurse' with a medical-themed graphic, and '375' with a large number graphic. The fourth screenshot is partially obscured.

Reflect 2d. Analyze Online Cases (problems, solutions, etc.) ...MM

The screenshot shows a website titled 'Shaping The Future Of Medical Education'. It has a blue header and contains text, images of medical professionals, and a sidebar with additional content.

Reflect 2e. Workplace and Field Reflections...MM

This block features a collage of images related to healthcare and workplace environments. It includes photos of medical students, nurses, and doctors in various settings, as well as smaller icons representing different medical fields.

Reflect 2f. ORL or Library Day
(e.g., The Thompson Library at Ohio State University)
...MM

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

Reflect 2h. Topical Lectures from Famous People (e.g., Big Think; Academic Earth)

Reflect 2i. Life of a Scientist or Famous People Website (e.g., Brian J Ford, independent scientist)
<http://www.youtube.com/user/tellymonitor#p/u/1/LhGeApsKlar>

3. Visual Learners

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

Display 3a. Pubcasts! (videos of scientific papers and science)
NSF, the Public Library of Science, and the San Diego Supercomputing Center created a YouTube for scientists to help demystify important research papers. See SciVee.

Display 3b. Anchored Instruction Discussions (YouTube, CNN, BBC, TeacherTube, CurrentTV) ...MM

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

Display 3d. Videos of the Periodic Table

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

Display 3f. Timeline Tools (e.g., SMILILE from MIT, Learning Tools from UBC)

Timeline of Technology for Teaching, NY Times, September 15, 2010
<http://www.nytimes.com/interactive/2010/09/19/magazine/classroom-technology.html?ref=magazine>

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

The map shows the growth in scientific research of American nations, 2000 and 2005. It shows a significant increase in scientific publications that territory size no area for the map.

In 1990, 61 scientific papers were published per million people living in the world, the increased to 200 per million in 2005. This increase was accompanied by a significant shift in the leading scientific research. However, the United States, with the highest total publications in 2005, experienced a smaller increase since 2000 than that in Japan, China, Germany and the Republic of Korea. Singapore had the greatest per person increase in scientific publications.

Visitors to display interact in the interactive science research, as an product available for the globe. Knowledge center economy, and for our next phase of development as a world. Twitter: @WorldMapper, 2010

- Open PDF poster: designed for printing. You need Acrobat Reader.
- View detailed territory: map or projection map for comparison.
- Data File: Download (large with map), Download (small), Openable format (see notes)
- Technical notes for this data.
- All of the data we use is attributed; see data page.

Display 3h. 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.)

Display 3i. Weather-Related Visuals and Animations

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

Display 3L. Medical Animations and Videos (e.g., YouTube, CNN, BBC)

Display 3n. Download and Use Online 3D Sketches (Art, Drawing, Architecture, etc. Google SketchUp)

Display 3o. Mash-Ups (Indexing Sounds in Cities with Google Maps in Sociology)

A screenshot of a web application titled 'Mash-Up: Sound Indexing in Cities with Google Maps in Sociology'. It features a Google Maps interface with various colored markers and callouts overlaid on a city map. A sidebar on the left lists different sound categories. A video player in the top right shows a man speaking, with the title 'THE CHRONICLE'.

Display 3p. Virtual History (e.g., Archaeology from Brown University)

A collage of images related to virtual history and archaeology. It includes a classical building facade, a 3D reconstruction of a person, a person using a handheld device, a 3D model of a small house, a person's face, and a 3D architectural site plan.

Display 3p. Science/Medicine in Action (e.g., Foldit for Biology)

(puzzles that explain the shape that proteins fold into; the results can have huge impacts on scientific discoveries needed for Alzheimer's, AIDS, Cancer, etc.) <http://fold.it/portal/> http://www.youtube.com/watch?v=5w5d6_0Uv3I (visual excerpt from interview below: 1:23 minutes) <http://www.youtube.com/watch?v=5Z1XurOqnuE&feature=youtu.be> (Stanford Project Interview: 5 minutes)

A screenshot of the Foldit protein folding game interface. It shows a 3D molecular model of a protein being manipulated. The interface includes various controls and information panels.

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.

A diagram showing four learning styles: Visual, Auditory, Reading/Writing, and Kinesthetic/Tactile. The Kinesthetic/Tactile style is highlighted in red. Below the diagram are several images illustrating tactile/kinesthetic learning activities, including a person in a white protective suit, a person using a handheld device, and a person in a dark vest.

Do 4a. Wikibooks: International Collaboration (Web 2.0 and Emerging Learning Technologies (The WELT)) ...MM

Web 2.0 and Emerging Learning Technologies
From Wikibooks: the open content textbooks collection

A screenshot of a Wikibooks page titled 'Web 2.0 and Emerging Learning Technologies'. The page features a 'Table of Contents' and a 'Part: Position' section. A large graphic on the left shows icons for Web 2.0 (play button, RSS, @, and a document icon).

Do 4b. Syllabus, Glossary, etc. in wiki: Students sign up for tasks (Ron Owston, York University) ...MM

A screenshot of a wiki page for a syllabus and glossary. The page includes a table of contents, a list of tasks, and a section for 'Student Learning'. A photo of Ron Owston is visible in the bottom right corner.

Do 4c. Survey Research and Market Analysis (e.g., Mister Poll, MicroPoll, Zoomerang, SurveyShare)

The image displays several screenshots of online survey and market analysis tools. On the left, there are screenshots of SurveyShare.com and Zoomerang. In the center, there is a screenshot of misterpoll. On the right, there is a screenshot of micropoll with the text 'Create Your Web Poll - Free'.

Do 4d. Online Warm-ups Activities Just-In-Time-Teaching (JiTT)

The image shows the cover of the book 'Just-In-Time Teaching' by Robert M. Gagne and Michael J. Bruff. To the right of the book cover is a black and white photograph of a man looking at a map of the United States.

Do 4e. Podcast Productions and Virtual Performances for students of pronunciation class (e.g., Tzu-Su Chen, Taiwan)

The image is a collage related to podcasting and virtual performances. It includes screenshots of podcast production software like Audacity and Podomatic, as well as images of virtual performances, including one for 'TWEET NIGHT LIVE PLAY'.

Do 4f. International and Global Education and Competitions (e.g., Global Game Jams, online role play, Global Videoconferencing)

The image shows a collage of activities related to international and global education. It includes photos of people participating in 'Global Game Jam' events, online role-playing sessions, and global videoconferencing setups.

Poll #2: How many ideas did you get from the second part of this talk?

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

The text is accompanied by a small cartoon illustration of two characters and a hurdle.

**Try the R2D2 Method!
Try TEC-VARIETY!
And hope for some magic!!!**

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

The image includes a small cartoon of R2-D2 and several screenshots showing people engaged in activities related to the R2D2 Method and TEC-VARIETY, including one person holding a lightsaber.