

Technology and Creativity

Curtis J. Bonk, Professor, Indiana University
 cjbonk@indiana.edu
<http://mypage.iu.edu/~cjbonk/>



What is the definition of creativity?



Creative Process (Paul Torrance, 1988)

- "I tried to define creative thinking as a process of
- (1) sensing difficulties, problems, gaps in information, missing elements, something askew;
 - (2) making guesses and formulating hypotheses about these deficiencies;
 - (3) evaluating and testing these guesses and hypotheses;
 - (4) possibly revising and retesting them; and finally,
 - (5) communicating the results."



TechTrends • September/October 2013

Volume 57, Number 5

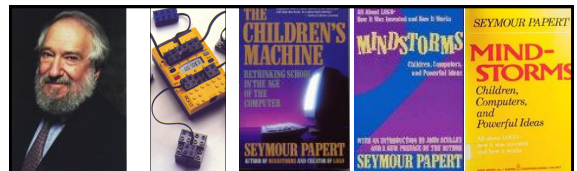
A NEW Approach to Defining and Measuring Creativity: Rethinking Technology & Creativity in the 21st Century

By Punya Mishra, Danah Henriksen & the Deep-Play Research Group, Michigan State University

Table 1. from Mishra & Koehler, 2008 (adapted from Besemer & O'Quin, 1999).

Creative solutions are OR Creativity is a goal driven process of developing solutions that are	
Novel	Fresh, unusual, unique, surprising, startling, astonishing, astounding, germinal, trendsetting, radical, revolutionary, influential, pioneering
Effective	Valuable, important, significant, essential, necessary, logical, sensible, relevant, appropriate, adequate, functional, operable, useful, user-friendly
Whole	Organic, ordered, style, arranged, organized, formed, complete, elegant, graceful, charming, attractive, refined, complex, intricate, ornate, interesting, understandable, meaningful, clear, self-explanatory, well crafted, skillful, well made, meticulous

What's unique about these 2 people?



15 Creativity Tools and Activities



1. Just Suppose a 6 year old girl could program a popular mobile application... S.T.E.M. education inspiring girls nationwide, February 10, 2013, Melissa Harris-Perry

Facebook and YouTube posts from Melissa Harris-Perry's 'S.T.E.M. education inspiring girls nationwide' page. The Facebook posts include a tweet and a video thumbnail titled 'FIRST GRADER CREATES MOBILE APP VIDEO GAME'. The YouTube post features a video thumbnail with a girl and text 'FIRST GRADER CREATES MOBILE APP VIDEO GAME'.

Why I spent 10th grade online. Sophia Pink, Washington Post, August 23, 2013

<http://www.washingtonpost.com/news/technology/wp/2013/08/23/2013-08-23-why-i-spent-10th-grade-online-2013-08-23/>

Why I spent 10th grade online



Video: Sophia Pink describes how she finished 10th grade online and why she's choosing to go back to the classroom.



2. Video Interviews and Documentaries

Honk If You Love Someone, Sophia Pink, January 1, 2013

<http://www.youtube.com/watch?v=1EvYLzmkUxc&feature=youtu.be>

3. Research Experiments and Presentations

Are You Feeling Sleepy?, Sophia Pink, April 30, 2013

http://www.youtube.com/watch?v=A8t1L0y_g8A&feature=youtu.be



YouTube video player for 'Honk If You Love Someone' by Sophia Pink, showing 53,525 views.



YouTube video player for 'Are You Feeling Sleepy?' by Sophia Pink, showing 297 views. Published on Apr 30, 2013.

4. Digital Books



5. Virtualize Words Used (e.g., Wordle, Taggedo, Tagul, WordSift, Word It Out)

<http://shellvirell.com/2010/02/14/12-word-cloud-resources-tips-tools/>



Figure 4. PLENK2010 Wordle.

6. Student Collaborative Knowledge Building and Sharing

(e.g., Popplet: <http://popplet.com/>)

7. Concept Mapping and Timeline Tools (VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

8. Videos of the Periodic Table

Univ of Nottingham

9. History for Music Lovers

The French Revolution ("Bad Romance" by Lady Gaga)
 Trojan War ("Tainted Love" by Soft Cell)
 Charlemagne ("Call Me" by Blondie)
 The Vikings ("Personal Jesus" by Depeche Mode)
 The Crusades ("Eyes Without a Face" by Billy Idol)
 Constantine ("Come On, Eileen" by Dexy's Midnight Runners)
<http://www.youtube.com/user/historyteachers>

10. Online Learning Polyglots

March 9, 2012

<http://www.youtube.com/watch?v=3Z2uEgAaA>

Timothy posts videos of himself speaking several languages on YouTube.

11. Video Documentary in the Philippines

Lorma International School, the Philippines
 (Hannah Kimberly Obar, First Grade teacher)

<http://www.youtube.com/watch?v=1C33U1-5aA>
<http://www.youtube.com/watch?v=3Z2uEgAaA>
<http://www.youtube.com/watch?v=3Z2uEgAaA>

12. Tracking the Life of a Scientist (e.g., Brian J. Ford, independent scientist)

Origin of Humans: <http://www.youtube.com/user/tellymonitor#u/2j5WwVedl8cU>

Tellymonitor's Channel: <http://www.youtube.com/user/tellymonitor>

BBC programs omit living cells: <http://www.youtube.com/watch?v=rnpTh6C6dY>

Secret Weapons: <http://www.youtube.com/watch?v=FDc-Srja1M&list=UUFHjck-wUQ8s9pE14SGK&index=6&feature=plcp>

Dinosaurs (Laboratory News, April 1, 2012): <http://www.labnews.co.uk/news/prehistoric-revolution/>

LaboratoryNews



October 27, 2012

13. Traveling (YouTube) Office Hours (Chuck Severance)

U Michigan / Coursera in Barcelona

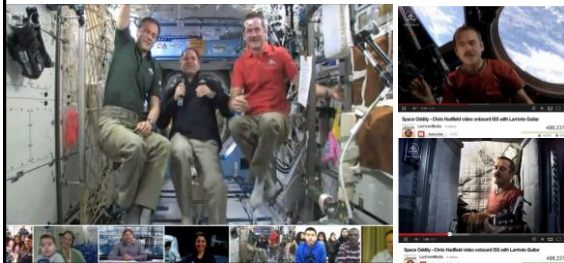
<http://www.youtube.com/watch?v=JzNHvmSv8TT>



February 22, 2013

14. NASA's spacey Google+ Hangout shows off zero-G antics – and cats!

http://comicon.aabcnews.com/_news/2013/02/22/17057588-nasa-space-google-hangout-shows-off-zero-g-antics-and-cats70a



15. Google Art Project

NBC Nightly News, April 3, 2012

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



Ten Creative Thinking and Exploration Activities



1. Course Readings are All Web Resources (and Free!)

- Post all articles to the Web or only use freely available ones.
- Let students select the ones that they want to read.
- Turn in final reflection papers.



2. Explore and Reflect on Virtual Timelines with Media

(Dipity, Simile, Xtimeline, Timeglider, Meograph)
<http://www.usatoday.com/tech/news/story/2011-09-22/steve-jobs-dies/50672498/1>



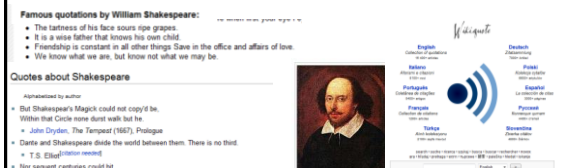
3. Flip Class with Webstreamed Lecture Reflections

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



4. Nominate Quotes (e.g., Shakespeare)

- Students can explore online quotes (Wikiquote).
- Suggest best ones.
- Respond to other suggestions.



5. Just Suppose or What If (L = Cost, L = Risk, M = Time)

- Imagine a situation or scenario and reflect on the consequences.
- "Just suppose this MOOC or one like it was available every month, what would online teaching be like?"



6. Wet Ink or Freewriting (L = Cost, M = Risk, M = Time)

Writing without reflecting or lifting your pen for a set period of time.

- Just imagine: imagine you have created a highly active teaching situation...What do you see? Can students wonder, question, speculate, take risks, active listening??? How is creativity fostered here? Describe environment. Physically, mentally, emotionally, etc...



7. Metaphorical thinking (L = Cost, M = Risk, M = Time)

- how is my class like:
 - a prison, a beehive, an orchestra, ghetto,
 - expedition, garden, family, herd, artist's palette,
 - machine, military camp, Olympic games, hospital, theater, etc.



8. Reverse Brainstorming (L = Cost, L = Risk, M = Time)

- Generating ideas to solve the reverse of a particular problem, issue, or concern.
- More is better and the wilder the better.
- Hitchhiking or piggybacking as well as combining ideas is encouraged. However, there is no evaluation of ideas allowed.
- For example, How can we decrease the use of active learning ideas in college settings?



9. Mock Trials with Occupational Roles (L = Cost, H = Risk, M/H = Time)

- Create a scenario (e.g., school reform, gov't protest).
- Get volunteers for diff roles (everyone must have role).
- Perhaps consider having one key person on the pro and con side of the issue make a statement.
- Discuss issues from role (instructor is moderator or one to make opening statement; he/she collects ideas on document camera or board). Come to compromise.
 - Online Option: volunteer for roles or assign roles to each team member or have them sign up for different roles.**



10. Historical Role Play or Mock Trial (L = Cost, H = Risk, M/H = Time)

- Assign roles after a lecture.
 - Have students read more about roles.
 - Come back dressed in costume.
 - Act out scene.
- Online Option: volunteer for roles or assign roles to each team member or have them sign up for different roles.**



15 Creative Student Projects



1. Design Multimedia Glossaries

Ozgur Ozdemir, December 2012
<http://r685glossary.shutterstock.com/>
 Umida Khikmatillaeva, Dec. 2011, P540
<http://learningplanet.shutterstock.com/>
 Umida Khikmatillaeva, Dec. 2011, P540
<http://learningplanet.shutterstock.com/>



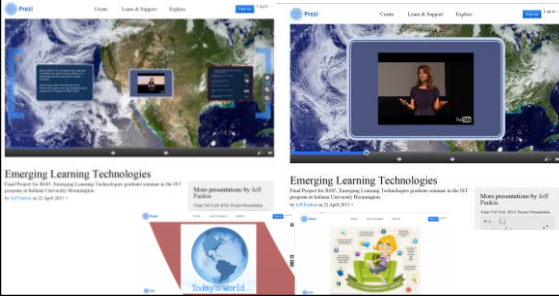
2. Design Reusable Web Resources

Umida Khikmatillaeva, Creating a Global Classroom
 World is Open for Language Learners
<http://hikmatnomax.wix.com/globalclassroom#home/c2df>



3. Course Recap Prezi Presentations

Jeff Pankin, MIT, Prezi, Emerging Learning Technologies
<http://prezi.com/tatwagm1/emerging-learning-technologies/>
Jeffrey Barretto, Today's World
<http://prezi.com/ijyotstst-r/r685-final-project>



4. Interactive Timelines

(e.g., The Big Sleep, Kate Hurd)

<http://hurdinsuranceagency.com/thebigsleep/>

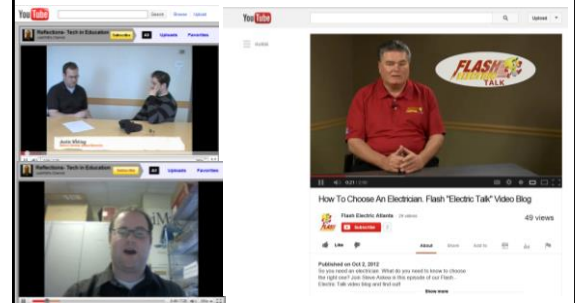


5. Uploading Mobile Books

(e.g., BookRix, <http://www.bookrix.com/>)



6. Video Blogs



7. Online Article Portals and Databases

<http://r685articledatabase.weebly.com/>
<http://ella.slis.indiana.edu/~bahallo/c/r685/>
http://php.indiana.edu/~cjbok/Syllabus_R685_Spring_of_2011.htm



8. Wikibooks: International Collaboration (Web 2.0 and Emerging Learning Technologies (The WELT))

Web 2.0 and Emerging Learning Technologies

From Wikibooks, the open-content textbooks collection



9. Student Class Documentaries

Umida's R546 Documentary Project

http://www.youtube.com/watch?v=EMLTzqCV_5A

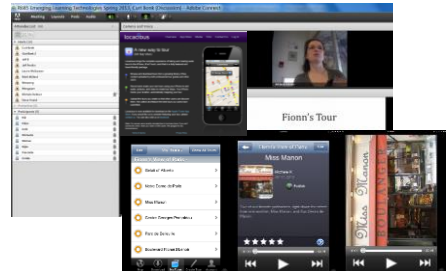


10. Mobile Audio Tours

Locacious Final Class Project

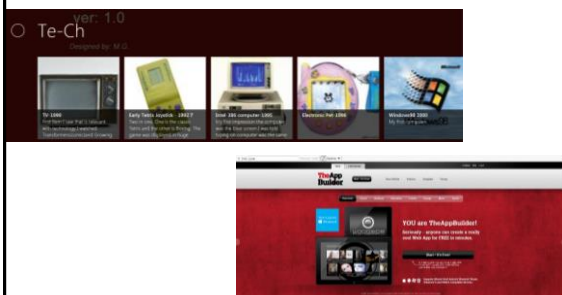
(Michele Kelmer, April 22, 2013)

<http://www.locacious.net/>



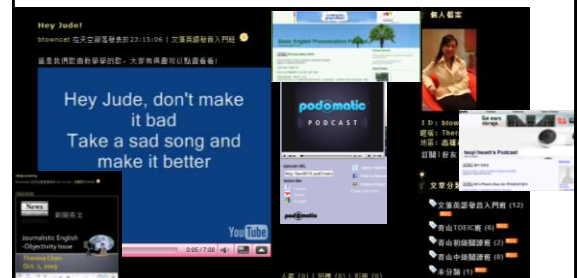
11. Student Mobile App Creation

The App Builder: <http://www.theappbuilder.com/>
Mintian Guo (April 2013): <http://myapp.is/r685final>



12. Podcasts for students of pronunciation class

(e.g., Tzu-Su Chen, Taiwan)



13. Reflect on Big Ideas

(on IQ Wall, April 22, 2013)

Final project, Mark Millard
Big Ideas in Distance and Flexible Learning (HD)

[http://www.podomatic.com/show?id=77645685-C57E-4684-907E-864949000A](http://www.podomatic.com/show?id=77645685-C57E-4684-907E-86484949000A)



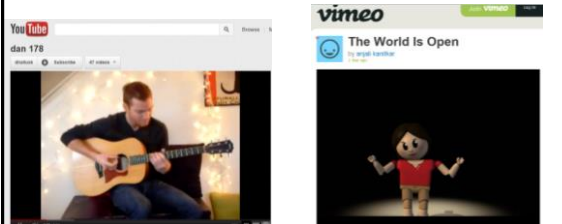
14. Final Product Video Summaries

Piercarlo Abate: <http://www.youtube.com/watch?v=-TURaH0aU>
Gagnam: <http://www.youtube.com/watch?v=7Q429lqxZaU&feature=youtu.be>
Miguel Lara (Web 2.0 FREEDOM): <http://www.youtube.com/watch?v=8cmCFW9lW8>



15. Student Songs, Films, and Documentaries

<http://vimeo.com/33990590/> (Verily)
<http://vimeo.com/33123125> (Anjali)
<http://www.youtube.com/watch?v=1QZHvuZ3rbw&feature=youtu.be> (Yue)
Daniel Halluska, P540, Fall 2011
<http://www.youtube.com/watch?v=tOL7lrGsqnw>



Questions and Comments?

Note: Curt Bonk's papers and talks at:
<http://www.publicationshare.com/>
<http://www.trainingshare.com/>

