Stretching the Edges of Technology: Enhanced Teaching: From Tinkering to Tottering to Totally Extreme Learning

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Learning is More Interactive and Collaborative

The role of the instructor being disrupted...
(Instructor as Cat Herder?)

From Instructor as Credit Manager...to...

1. Instructor as Counselor

2. Instructor as Consultant
3. Instructor as Conductor

4. Instructor as Course Ambassador

5. Instructor as Curator

6. Instructor as Concierge

7. Instructor as Camping Trip Guide

8. Instructor as Cultivator
**Tinkering**

**March 7, 2016**
A Famous Tinkerer
Raymond Tomlinson, inventor of modern email, dies, USA Today
http://www.usatoday.com/story/tech/2016/03/06/tomlinson-inventor-modern-email-dies/81413414/

**Tinker #1.**
Human Embryology Animations
(Valerie O’Loughlin, Indiana University)

**October 16, 2015**
Tinker #2. Newseum Ed
https://newseumed.org/

**August 19, 2015**
Tinker #3.
Use the Media to Supplement Content
(e.g., CNN Money)
https://money.cnn.com/2015/08/19/retirement/retirement-savings-20s/index.html

**Tinker #4.**
Workplace Internship, Practicum, and Field Experiences Online Reflections
Tinker #5.  
Interactive Labs and Simulations  
http://phet.colorado.edu/en/simulation/energy-skate-park

Tinker #6.  
Online Role Play or Debate  
(e.g., documentary production)

Tinker #7.  
Reflect on Virtual Timelines  
(Dipity, xtimeline, Simile, etc.)  

Tinker #8.  
Online Database Activities  
(e.g., WolframAlpha)  
http://www.wolframalpha.com/

Tinker #9.  
Short Video Anchors  
(e.g., TubeChop of V-PORTAL: Video Primers in an Online Repository of e-Teaching and Learning)  
Curt Bonk: http://www.tubechop.com/watch/378752

Tinker #10.  
Videos with Test Questions (e.g., TEDEd)  
(Lessons about every single element on the periodic table)  
**Tinker #11. Video Tutorials, Demonstrations, and How-To's**
Investopedia (videos, tutorials, etc.)
http://www.investopedia.com/video/play/deferred-revenue/

**Tinker #12. Create Screencasted Tutorials**
(Jing, GoView, Screencast-o-Matic; see http://tec-variety.com/TEC-Variety_links-examples-resources.pdf)

**Tinker #13. Reading from Open Access Journals**
(e.g., PLOS, IRODOL, etc.)

**Tinker #14. Online Practice Tests and Interactive Flash Cards**
http://quizlet.com/

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**Tottering**

**Totter #1. Multiple Guest Experts**
Sara de Freitas and Jim Hensman, U of Coventry, UK
https://connect.iu.edu/p2ie1yx6z6x/

Jay Cross, Berkeley
https://connect.iu.edu/p4bytsoronh/
January 20 and 26, 2016 (Zoom)
Totter #2.
Weekly Guest Expert Chats
R511 Chat with Mike Molenda, IU
R511 Chat Charles Graham, BYU

Totter #3. Author Mobile Books
(e.g., BookRix, http://www.bookrix.com/)

We are entering a jumping off point...

You Want Totally Extreme?
Apple’s new ‘spaceship’ campus: What will the neighbors say?, Doug Gross, CNN, May 22, 2012

August 5, 2015
Totally Extreme #1. Shubham Jaglan
Overwhelmed by "Dream" Return Home After Double World Championship
Disha Chopra, NDTV Sports

Totally Extreme #2.
Teach from Vietnam to the World
BBC News Asia, August 14, 2013
Even though he is now very elderly Vinh Bao (age 96) still teaches music, using his computer to coach pupils across the globe.
Totally Extreme #3. Adventures of a Teenage Polyglot
http://www.nytimes.com/2012/03/11/nyregion/a-teenage-master-of-languages-finds-online-fellowship.html?_r=1&pagewanted=all

Timothy posts videos of himself speaking several languages on YouTube.

October 31, 2014
Totally Extreme #4. Penguin Science (Penguin Cam), Jean Pennycook
http://www.penguinscience.com/
http://www.thistle.org/pcam2/images.shtml

Totally Extreme #5. October 27, 2012
MOOC Office Hours in Other Countries
Chuck Severance, (U Michigan/Coursera) in Barcelona
http://www.youtube.com/watch?v=JzNHvmSv8TI

Totally Extreme #6. Adventure Learning about the Environment
(e.g., North of 60, GeoThentic, Eartheducation, see Aaron Doering, Chasing Seals; http://chasingseals.com/)

Needed: New Models of Motivation and Engagement
What did Jean-Luc Picard say?

That’s right, Engage!

Poll: Million Dollar Question: What words come to mind when I say that I want to motivate learners?

Motivation Research Highlights
(Jere Brophy, Michigan State University)
1. Supportive, appropriate challenge, meaningful, moderation/optimal.
2. Teach goal setting and self-reinforcement.
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.

Drive: The Surprising Truth About What Motivates Us
Daniel Pink (2009)

Motivation 3.0

Mindset:
The New Psychology of Success
Carol Dweck (2006)
http://mindsetonline.com/index.html
http://mindsetonline.com/testyourmindset/step1.php
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).


Framework: TEC-VARIETY 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

Introducing the free “TEC-VARIETY” Framework...

http://tec-variety.com/

Examples of TEC-VARIETY

1. Tone/Climate: A. Threaded Video Discussions, e.g., Flipgrid
   http://flipgrid.com/#429f88c5

在线学习动机与激励：TEC-VARIETY 模型
——激励和留住在线学习者的 100 个活动

作者：Carrie Bork & Elaine Kho

Low Risk
High Risk

1. Risk
   Easy to Embed
   Enterprise Licenses

2. Time
   Free or Inexpensive
   Extensive Planning

3. Cost
   Instructor-Focus
   Student-Focus

4. Student-Centered
   Low
   High
1. Tone/Climate:
B. Share Visuals of Favorite Places
   (e.g., Panoramio, http://www.panoramio.com/)

2. Encouragement, Feedback, etc.: A. Demonstrations and Tutorials
   Emerging technology specialist, IU UITS, Nitocris Perez,
   May 29, 2014

3. Curiosity, Fun:
   A. Something in the News
   September 5, 2014 (Dreadnoughtus)
   March 3, 2016
   Scientists to drill at site of dinosaur-killing asteroid crater, Jareen Imam, CNN
   October 23, 2014: Goofy dinosaur blends Barney and Jar Jar Binks, SF Gate
   January 14, 2016
   3. Curiosity, Fun:
   B. Something in the News
   Move over T. rex, new dinosaur unveiled, Amanda Jackson, CNN
   http://www.cnn.com/2016/01/14/living/titanosaur-new-dinosaur-on-display/new-york-irpt/
December 28, 2015
3. Curiosity, Fun:
C. Something in the News
Creature from the deep surfaces in Japanese harbor, giant squid, Euan McKirdy and Junko Ogura, CNN

September 7, 2015
3. Curiosity, Fun:
D. Something in the News
New ‘Superhenge’? Remains found near Stonehenge, Monica Sarkar, CNN

March 7, 2015
3. Curiosity, Fun:
E. Something in the News
(e.g., This may be the oldest surviving Photo of a human, November 7, 2014, CNN, Brandon Griggs; But this image, taken in Paris, France, in 1838)
http://www.biography.com/people/steve-jobs-9354805
http://www.biography.com/people/ada-lovelace-20835323

June 12, 2015
3. Curiosity, Fun: G. Something in the News and Infographic
Twitter CEO Dick Costolo replaced by co-founder Jack Dorsey, Laura Onita
http://www.eschoolnews.com/?p=159458?ps=cjbonk@indiana.edu-0013000000j08pF-0033000000q5TNf
http://www.biography.com/people/steve-jobs-9354805
http://www.biography.com/people/ada-lovelace-20835323
4. Variety, Novelty, Fun, Fantasy:
A. Random Lists (Random.org—clocks, coins, playing cards, dice, integers, passwords, jazz scales, lists, sequences, etc.)

5. Autonomy, Choice:
A. Enroll in a MOOC and Reflect (e.g., see Class Central)

December 8, 2015
5. Autonomy, Choice:
B. Design Multimedia Glossaries
P540 Final Assignment: Nate Wynne, Supersized Personal Course Glossary
http://natewynne1982.wix.com/p540courseglossary
Ozgu Ozdemir, December 2012
http://r685glossary.shutterfly.com/
Umida Khikmatillaeva, Dec. 2011, P540
http://learningplanet.shutterfly.com/

5. Autonomy, Choice:
C. Video Repositories and Portals (e.g., Khan Academy, Computer Programming)
https://www.khanacademy.org/computing/computer-programming

Poll:
Any light bulbs going off in your head so far…?
A. Yes definitely***
B. Yes maybe!
C. Not yet (but hopefully soon…)

6. Relevance, Meaningfulness:
A. Guest Chats (e.g., Emily Hixon, January 20, 2015)
https://connect.iu.edu/p259wpia9b9/
7. Interactive, Collaborative: A. Negotiate Meanings Online
(e.g., PiratePad: http://meetingwords.com/)
MeetingWords, Google Docs, NowComment, MixedInk

  e.g., Padlet (What is your secret recipe to engage?)
  http://padlet.com/zaid_alsagoff/engage

7. Interactive, Collaborative: C. Backchannel Chat (TodaysMeet)
  https://todaysmeet.com/
  R678_Emerging_Learning_Technologies
  https://todaysmeet.com/R678_Emerging_Learning_Technologies

8. Engagement, Effort: D. Interactive Timeline Maps,
   October 22, 2014,
   Second immigration wave lifts diversity to record high, Edward Greg Toppo and Paul Overberg, USA Today

8. Engagement, Effort: E. Interactive Map Timelines
   (adults with college degrees by county, May 7, 2012)

8. Engagement, Effort: F. Simulations
March 13, 2015

9. Tension, Challenge, etc.:
   A. Controversial Issue Debates
   RS11 Midterm Video: How to Create an Authentic Environment in a Content-Driven School?, RS11, Nick and Nik
   https://www.youtube.com/watch?v=Bcr3_6ZT_xQ&feature=youtu.be

10. Yields Products, Goals:
   A. Student Created Mobile Apps
      The App Builder: http://www.theappbuilder.com/
      Mintian Guo: http://myapp.is/r685final
   B. Student Created Videos
      Piercarlo Abate: http://www.youtube.com/watch?v=_-TURzHO0aU
      Qi Li, Gangnam: http://www.youtube.com/watch?v=7Q429lqxZaU&feature=youtu.be
      Miguel Lara (Web 2.0 FREEDOM): http://www.youtube.com/watch?v=8cmCFWi9lW8
      Kendal Rasnake (Is IT Right For You?): https://www.youtube.com/watch?v=MJ3GUDICIGw

Commitments:
Stop and Share:
Which principle(s) of TEC-VARIETY will you use?
   - Tone/Climate
   - Encouragement, Feedback
   - Curiosity
   - Variety
   - Autonomy
   - Relevance
   - Interactive
   - Engagement
   - Tension
   - Yields Products

Time to Stop and Think:
Explore Websites from this Session!
Find the lieu...
Take a break...
Last but not least:
Framework #2: The R2D2 Model

Addressing Learning Styles with R2D2

Question: How can technology address diverse learner needs?

August 12, 2015
Create Engaging Learning Experiences

Curtis J. Bonk | Ke Zhang
Empowering Online Learning
100+ Activities for Reading, Reflecting, Displaying & Doing.

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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. Collect and Listen to Interactive Stories
(e.g., Meograph: http://www.meograph.com/)

Read 1b. Exploring the Life of a Prominent People (Wikipedia)

Read 1c. Grammar Checkers
(e.g., Grammarly, Ginger, GrammarCheck, PaperRater, and SpellCheckPlus)
http://www.grammarly.com/

Read 1d. Podcasts
IU Bloomington podcast series to launch Jan. 24, Steve Hinnefeld, IU Newsroom

January 20, 2016

IU's Media School dean James Shanahan, at left, will host a new campus podcast. Senior Luqmann Ruth will read the news for the inaugural podcast.

PHOTO BY JENNIFER PIUREK, OFFICE OF THE PROVOST
January 28, 2015

Read 1e. Twitter Fed Class Discussions
Live-Tweeting Assignments: To Use or Not to Use?
http://chronicle.com/blogs/profhacker/live-tweeting-assignments-to-use-or-not-to-use/58949

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

Reflect 2b. Interpreting Infographics
August 5, 2015
How much rainforest in that chocolate bar?
Global Forest Watch, Nancy Harris, Octavia Payne and Sarah Mann
http://blog.globalforestwatch.org/2015/08/how-much-rainforest-is-in-that-chocolate-bar/

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

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

Display 3a. Virtualize Words Used (e.g., Wordle, Tagzeda, Tagul, WordSift, Word It Out)
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.
December 8, 2015
Do 4a. Take a MOOC
PS 40 Final Assignment for Meina Zhu: MOOC, Coursera, Introduction to Psychology, University of Toronto
https://www.coursera.org/course/psych

Do 4b. Student Final Project Videos
PS 40 Final Assignment: Learning Theories and Psychotherapy, Shu-Yi Wang
https://www.youtube.com/watch?v=PNM6q0sXAJM

Do 4c. Student Music Recordings of Course Content
April 26, 2015
IST Groove Song, Jeffrey Jenkins, RS 11: https://soundcloud.com/jeffjenkins25/ist-groove
The World is Open, Jill Kaufman, R 678: https://www.youtube.com/watch?v=ZRGV0Mg5Vmw&feature=youtu.be
Daniel Halluska, PS 40: http://www.youtube.com/watch?v=ESL7r6OnQw

March 12, 2016
Do 4f. R 678 John Falchi, Timeglider, An Abbreviated History of Distance Education
http://timeglider.com/t/50843d8903a48008?min_zoom=1&max_zoom=100

Poll: Which do you prefer...
(A) TEC-VARIETY or (B) R2D2?

Overcoming the Resistance Movement
1. Incremental Change

2. Shared Success Stories and Best Practices

3. Training and Development

4. Just-in-Time Support

5. An Atmosphere of Sharing

6. Awards and Incentives
7. Modeling

8. Mentoring and Coaching

9. External Supports

10. Frameworks and Models

Merrill’s First Principles of Instruction
http://mculated.com/Papers/FirstPrinciplesBeigalskiCar.pdf

Bonk’s Last Principles of Teaching/Instruction
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
1. The Principle of Flexibility
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

2. The Principle of Convenience
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

3. The Principle of Collegiality
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

4. The Principle of Cheerfulness and Optimism
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

5. The Principle of High Expectations
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
6. The Principle of Choice and Options
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

7. The Principle of Empowerment and Autonomy
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

8. The Principle of Support and Feedback
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

9. The Principle of Spontaneity
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

10. The Principle of Organization
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

11. The Principle of Sharing
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
12. The Principle of Nontraditional Learning
http://travelinedman.blogspot.com/2011/05/boke-last-principles-of-instruction.html

13. The Principle of Passion and Inspiration
http://travelinedman.blogspot.com/2011/05/boke-last-principles-of-instruction.html

14. The Principle of Relevance and Meaningfulness
http://travelinedman.blogspot.com/2011/05/boke-last-principles-of-instruction.html

15. The Principle of Trial and Error (i.e., it is ok to fail)
http://travelinedman.blogspot.com/2011/05/boke-last-principles-of-instruction.html

16. The Principle of Expanded Resources
http://travelinedman.blogspot.com/2011/05/boke-last-principles-of-instruction.html

17. The Principle of Human Connectedness
http://travelinedman.blogspot.com/2011/05/boke-last-principles-of-instruction.html
18. The Principle of Cognitive Apprenticeship
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

19. The Principle of Purpose and Vision
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

20. ??? (what is missing)
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

Poll: 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.

Debriefing of Bonk’s Last Principles of Instruction and New Instructor Roles
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

Who is Stretched Now?
Try TEC-VARIETY...Try R2D2
Slides at: TrainingShare.com
Papers: PublicationShare.com
Book: http://tec-variety.com/
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