Engaging Teaching with Technology: Introducing the TEC-VARIETY and R2D2 Models
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January 16, 2019
Survey: Online, Blended Dominate Today’s Learning Environments
Rhea Kelly, Campus Technology
Campus Technology’s 2018 Teaching with Technology Survey

12 Blended Learning Examples

Blended Solution #1.
Use the Media to Supplement Content (e.g., Accounting Coach; includes tests, Q&A, visuals, forms, definitions, etc.)
Blended Solution #2.
Analyzing Online Raw Data (e.g., Financials from Twitter)

https://finance.yahoo.com/q/is?s=TWTR+Income+Statement&annual
http://www.marketwatch.com/investing/stock/twtr/financials

May 31 and November 8, 2018
Blended Solution #3.
Online News and Videos
The Extremely Fast Peopling of the Americas
Ed Yong, The Atlantic

https://www.theatlantic.com/science/archive/2018/05/the-increasingly-intricate-story-of-how-the-americas-were-peopled/561638/

Blended Solution #4.
Reading from Open Access Journals (e.g., PLOS, IRRODL, etc.)


Blended Solution #5.
Sample Student Work
e.g., Interactive Archive/Gallery of Student Exemplary Work
(University of Notre Dame, Freshman Writing:
https://freshwriting.nd.edu/)

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

Blended Solution #7.
Online Database Activities
e.g., WolframAlpha
http://www.wolframalpha.com/
Blended Solution #8.
Online Practice Tests and Interactive Flash Cards
http://quizlet.com/

Blended Solution #9.
Flipping the Classroom
January 7, 2015
When a Flipped-Classroom Pioneer Hands Off His Video Lectures, This Is What Happens, Jeffrey R. Young, The Chronicle of Higher Education
http://chronicle.com/article/When-a-Flipped-Classroom/151031/

A student watches a video of Norman Nemrow’s accounting class. Mr. Nemrow started the video lectures nearly 15 years ago at Brigham Young U. He is now retired, but students still watch him on the screen.

Blended Solution #10.
Videos with Test Questions (e.g., TEDEd)
(Lessons about every single element on the periodic table)

Blended Solution #11.
Video Tutorials, Demonstrations, and How-To’s
Investopedia (videos, tutorials, etc.)
(Jing, GoView, Screencast-o-Matic;)
http://www.investopedia.com/video/play/deferred-revenue/

A student watches a video of Norman Nemrow’s accounting class. Mr. Nemrow started the video lectures nearly 15 years ago at Brigham Young U. He is now retired, but students still watch him on the screen.

Blended Solution #12.
Streaming Live Events
Keynote talks at EdMedia 2018:
World Conference on Educational Media and Technology
Zoom link: https://iu.zoom.us/j/263198784

Model #1: Best Practices for Online and Blended learning:
Introducing the TEC-VARIETY Model
http://tec-variety.com/
**Poll #1: What did Jean-Luc Picard say?**

Engage!

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**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.

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**Examples of TEC-VARIETY**

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**April 3, 2017**

1. **Tone/Climate:**
   A. Sli.do
   [https://www.sli.do/](https://www.sli.do/)

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**June 18, 2018**

1. **Tone/Climate:**
   B. Threaded Video Discussions and Questions (e.g., Flipgrid)
   Microsoft acquires social learning platform Flipgrid,
   Brian Heater, TechCrunch
1. **Tone/Climate:**

   **C. Instructor Course Introductions**
   (Theatre 10 Intro Video, October 7, 2014, Elizabeth Dale, West Valley College)
   [https://www.youtube.com/watch?v=40wES4B3G0I](https://www.youtube.com/watch?v=40wES4B3G0I)
   Chuck Severance, U Michigan/Coursera) in Barcelona
   [http://www.youtube.com/watch?v=sfHidSmv8T](http://www.youtube.com/watch?v=sfHidSmv8T)
   Chuck Severance, University of Michigan
   [https://www.coursera.org/course/pythonlearn](https://www.coursera.org/course/pythonlearn)

2. **Encouragement, Feedback:**

   **B. Voice/Audio Feedback**

3. **Curiosity, Intrigue, Unknowns:**

   **B. 1st woman to officially run Boston Marathon does it again, 50 years later**
   Emanuella Grinberg, CNN, USA Today

4. **Curiosity, Intrigue, Unknowns:**

   **C. Scientific Discoveries**
   New 26,000-pound dinosaur discovery was Earth’s largest land animal
   Ashley Strickland, CNN
4. Variety, Novelty, Fun, Fantasy:
   A. Random Lists
   (Random.org—clocks, coins, playing cards, dice, integers, passwords, jazz scales, lists, sequences, etc.)

4. Variety, Novelty, Fun, Fantasy:
   B. Online Test/Quiz Review Games
   (e.g., Jeopardy Rocks)
   https://www.jeopardy.rocks/r511merve/

4. Variety, Novelty, Fun, Fantasy:
   C. Kahoot!
   https://getkahoot.com/
   July 31, 2017

4. Variety, Novelty, Fun, Fantasy:
   D. Design or Play Games
   Mash Up and Republish Like It's 1923
   Greg Toppo, Inside Higher Ed

4. Variety, Novelty, Fun, Fantasy:
   E. FutureMe.org
   Write a letter to the future
   https://www.futureme.org/

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

   B. Beer Matters: Free Online Class With Meetups
      Karl Brown, Assistant Professor of History
      http://www.uww.edu/ce/beer-matters
      http://www.gazettextra.com/20150921/uw-whitewater_teacher_explores_links_between_germans_beer_politics
      https://vimeo.com/286408659
      Video: http://curtbonk.com/beer.html (1:11)

   C. FutureMe.org
      Write a letter to the future
      https://www.futureme.org/

January 14, 2019

February 21, 2019

March 15, 2019
5. Autonomy, Choice: B. Design Multimedia Glossaries
P540 Final Assignment: Nate Wynne, Supersized Personal Course Glossary
http://natewynne1982.wix.com/p540courseglossary
Ozgur Ozdemir, December 2012
http://r685glossary.shutterfly.com/
Umida Khikmatillaeva, Dec. 2011, P540
http://learningplanet.shutterfly.com/

Poll #2:
Any light bulbs going off in your head so far…?
A. Yes definitely***
B. Yes maybe!
C. Not yet (but hopefully soon…)

Poll #3:
Which of these ideas might you use?
A. Threaded video discussions (e.g., Flipgrid)
B. Enroll in a MOOC
C. Demonstrations and tutorials (Jing, Screenr, etc.)
D. Voice/Audio feedback (Vocaroo)
E. Designing multimedia glossaries
F. Something in the News
G. Summary and Comparison Maps
H. Immediate Science

6. Relevance, Meaningfulness:
B. Case-Based Learning: Instructor Cases (e.g., Mark Braun, IU)

Jan. 20, Oct. 13, & Nov. 2016 (Zoom)
6. Relevance, Meaningfulness:
A. Weekly Guest Expert Chats
R511 Chat with Mike Molenda, IU

March 20, 2018
6. Relevance, Meaningfulness:
C. Editing Wikipedia Pages
Women’s-Studies Students Across the Nation Are Editing Wikipedia
Emma Kerr, The Chronicle of Higher Education
https://www.chronicle.com/article/Women-Studies-Students/242866
Samantha Erickson, left, of the Wiki Education Foundation; Tina Brock, a dean of the School of Pharmacy at UC San Francisco, and professor Amin Azzam discuss implementing the integration of Wikipedia pages on medical topics with students’ work
7. **Interactive, Collaborative:**
   A. **Negotiate Meanings Online**
   (e.g., PiratePad: [http://meetingwords.com/](http://meetingwords.com/))
   MeetingWords, Google Docs, NowComment, MixedInk

7. **Interactive, Collaborative:**
   C. **Guest Speaker Quotes**
   (Rey Junco, February 25, 2013)

8. **Engagement, Involvement:**
   A. **Learning Chemistry in Virtual Reality**, Sarah Hardman, New Learning Times
   1:38 video: [https://vialogues.com/vialogues/play/38337/](https://vialogues.com/vialogues/play/38337/)
   All: [http://curtbonk.com/chemistry-vr.html](http://curtbonk.com/chemistry-vr.html)

8. **Engagement, Involvement:**
   B. **Interactive Labs and Simulations**

8. **Engagement, Involvement:**
   C. **Maps**
   (This map shows where more Americans are willing to support free speech, The Monkey Cage, The Washington Post)

7. **Interactive, Collaborative:**
   B. **Virtual Sharing Walls**
   e.g., Padlet (What is your secret recipe to engage?)
   [http://padlet.com/zaid_alsagoff/engage](http://padlet.com/zaid_alsagoff/engage)

**February 14, 2018**
8. **Engagement, Involvement:**
   C. **Maps**
   (This map shows where more Americans are willing to support free speech, The Monkey Cage, The Washington Post)
March 30, 2017

8. Engagement, Involvement:
   Interactive Timelines
   (Dipity, xtimeline, Simile, TimeLineCurator, etc.)
   Amy Cavender, The Chronicle of Higher Education

December 13, 2016

9. Tension, Challenge, Controversy, etc.:
   B. Controversial Issue Debates
   Librarians for Instructional Technology, Latrice Booker, R511, Fall 2016
   http://bookerlr2000.wixsite.com/librariansforit/cognitivism

10. Yields Products, Goals:
    A. Facebook Course Page (R546)
    https://www.facebook.com/JennyBELTT/

July 28, 2017

9. Tension, Challenge, Controversy, etc.:
   A. Scenario-Based Learning and Challenges
   Modern medicine breathes new life into virtual training

9. Tension, Challenge, Controversy, etc.:
   C. Yes, Mr. President, We Remade Our Atlas to Reflect Shrinking Ice
   Christine Dell'Amore, National Geographic, August 3, 2015

10. Yields Products, Goals:
    B. Database Collection Tools
    Design Article Database in Pinterest, Meina Zhu and Jennifer Weebeck
    https://www.pinterest.com/zhumeina0000/678-emerging-learning-technology/
    https://www.pinterest.com/jennifertwebeck/emerging-learning-technologies/
March 12, 2016

10. Yields Products, Goals:
   C. Student Generated Timelines, Taxonomies, and Concept Maps
   R678 John Falchi, Timoglider, An Abbreviated History of Distance Education

10. Yields Products, Goals:
   E. Goal Setting Tools
   (e.g., I Done This, Milestone Planner, and 43 Things)

Poll #4:
Which of these ideas might you use?

A. Mindmaps of online discussions
B. Edit Wikipedia pages
C. Guest chats with experts and former students
D. Negotiate meanings online (e.g., PiratePad)
E. Online case analyses
F. Facebook course page
G. Guest speaker quotes
H. Student website development

September 3, 2017

Yields Products, Goals:
D. Mindmap Recaps of Online Discussions
Mindmap of Week 2 of R511

10. Yields Products, Goals:
   F. Student Website Development
   R511 Final Projects, December 12, 2017
   "Cousins but Not Twins: Instructional Technology and Human Performance Technology,"
   Merve Basdogan and Brett Gary, R511, December 2016
   http://educbasdogan.wixsite.com/511final

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
Question: How can technology address diverse learner needs?

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

February 11, 2018
Read 1a. Online Referenceware
The Magical Power of Dictionaries
Alberto Manguel, The Chronicle of Higher Education
https://www.chronicle.com/article/The-Magical-Power-of/242513

January 20, 2016
Read 1b. Podcasts
IU Bloomington podcast series to launch Jan. 24, Steve Hinnefeld, IU Newsroom

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 |

The R2D2 Model
1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)
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.

October 6, 2016

Reflect 2b. What-if Reflections

What if Aaron Burr had missed Alexander Hamilton?, Thomas Fleming, CNN


February 14, 2018

Read 1d. Reading Online News

Tracing the tangled tracks of humankind’s evolutionary journey

Hannah Devlin, The Guardian


February 28, 2018

Reflect 2a. Reflect on and Debate News

Did Homo erectus speak?

Daniel Everett, Bentley University, Aeon

https://aeon.co/essays/tools-and-voyages-suggest-that-homo-erectus-invented-language

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

Read 1c. Twitter Fed Class Discussions

Live-Tweeting Assignments: To Use or Not to Use? The Chronicle of Higher Education, Adeline Koh

http://chronicle.com/blogs/profhacker/live-tweeting-assignments-to-use-or-not-to-use/58949
April 13, 2016
Reflect 2d. Interpreting Interactive Graphs and Infographics

How much rainforest in that chocolate bar?
Tech billionaire announces $250 million in cancer immunotherapy funding.
Jayne O'Donnell, USA Today


July 5, 2018
Reflect 2e. Vialogues
EdLab Seminar--Engaging Educators with Digital Collections
Vialogue, Sara Hartman, New Learning Times
https://newlearningtimes.com/cms/article/5426/how-academic-publishing-is-changing-in-the

3. Visual Learners

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

Reflect 2f. Workplace Internship, Practicum, and Field Experiences

October 24, 2018
Reflect 2g. Session Recap Mindmaps
Emerging Online Learning Tools Research Session Mindmap
Learnlets, Clark Quinn
https://blog.learnlets.com/2018/10/emerging-online-learning-tools-research-session-mindmap/

Display 3a. Virtualize Words Used (e.g., Wordle, Tagzeda, Tagul, WordSift, Word It Out)
January 8, 2017
Display 3b. Summary and Comparison Maps
#GeoawesomeMapOfTheDay
https://twitter.com/geoawesome
https://www.instagram.com/p/B14ag32/
https://twitter.com/hashtag/GeoawesomeMapOfTheDay?src=hash

October 1, 2018
Display 3d. Detailed New National Maps Show How Neighborhoods Shape Children for Life
By Emily Badger and Quoctrung Bui, The New York times

Display 3f.
Short Educational Videos:
Anchored Instruction/Macrocontext
CNN, BBC, TED, TED-Ed, ForaTV
BBC One-Minute World News (August 31, 2015)
Weekly 1 minute updates: http://www.danpink.com/pinkcast/

Display 3c. (April 28, 2015)
Concept Mapping and Timeline Tools
(Bubbl.us, Cmap, Gliffy, Spicynodes, or Mindomo)
http://www.spicynodes.org/index.html

Display 3e. 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

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.
Do 4a. Student Music Recordings of Course Content

IST Groove Song, Jeffrey Jenkins, R511: https://soundcloud.com/jeffjenkins25/ist-groove
The World is Open, Jill Kaufman, R678: https://www.youtube.com/watch?v=ZRGV0Mg5Vmw&feature=youtu.be
Daniel Halluska, P540: http://www.youtube.com/watch?v=tOL7lrGsqnw
IST Paradise (2:52): (It all started with IST) https://drive.google.com/file/d/0B9YDNkNTIa4DaDNSVXdOeDM1SkU/view

Do 4b. Student Created Recap Videos

Piercarlo Abate: http://www.youtube.com/watch?v=7Q429lqxZaU&feature=youtu.be
Qi Li, Gangnam: http://www.youtube.com/watch?v=_TURZHO0aU
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

March 11, 2018
Do 4c. PBL in Puerto Rico
https://sites.google.com/iu.edu/pbl-in-puerto-rico/home

Poll #5:
Which of these ideas might you use?

A. Interactive map timelines
B. Visualize words used
C. Issue challenges, role plays, and debates
D. Student designed course recap videos
E. Student infographics
F. Interactive timeline tools
G. What-if reflections

Poll 6:
Which do you prefer…
(A) TEC-VARIETY or (B) R2D2?

Any Questions or Comments?
Slides at: TrainingShare.com
Papers: PublicationShare.com
Free book: http://tec-variety.com/
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http://curtbonk.com/