Education 20/20:
En"vision"ing the LAST Principles
You’ll Ever Need

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Talk Overview
1. Education 20/20 and the Role of the Instructor
2. First and Last Principles of Instruction
3. 4 E-Learning Ages
4. Megatrends of Learning: Engagement, Access, and Customization (30 ways that learning is changing...)
5. Future Trends and Ideas

(Circa Confucius 551–479 BCE)
1. Instructor as Counselor

2. Instructor as Conductor

3. Instructor as Course Ambassador

4. Instructor as Curator

5. Instructor as Concierge

Bonk’s Last Principles of Teaching/Instruction (The PBL Instructor?)
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
http://www.applicadthai.com/articles/education-4-0/
20 New Roles of the Instructor

- Captain
- Course Ambassador
- Curator
- Conductor
- Consultant
- Community Organizer
- Cultivator
- Change Catalyst
- Consumer Advocate
- Cook
- Concierge
- Camping Trip Guide
- Coach
- Collaborator
- Chemist
- Care Giver
- Colleague

Merrill’s First Principles of Teaching/Instruction

1. The Principle of Flexibility

6. The Principle of Choice and Options

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

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

11. The Principle of Sharing
https://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

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

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

16. The Principle of Expanded Resources
https://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
Bonk’s 20 "Last" Principles of Instruction (LAST = Learning Activation System Template)

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

- Flexibility
- Support and Feedback
- Nontraditional Learning
- Choice and Options
- Spontaneity
- Passion and Inspiration
- Trial and Error (i.e., it is ok to fail)
- Conveniences
- Organization
- Relevance and Meaningfulness
- Collegiality
- Sharing
- High Expectations
- Human Connectedness
- Empowerment and Autonomy
- Early and Ongoing
- Purpose and Vision
- Expanded Resources
- Pollution
- Cognitive Apprenticeship

Clearly...
Learning is Changing!

Poll #1: Do you remember the days before e-learning?

Fast Forward 30+ More Years...
"Anyone can now learn anything from anyone at any time."

Education 3.0...Education 20/20

"In Education 3.0, classrooms would move away from lectures, such as this one, to having class time be spent on discussions and projects, using digital technology."
(Per Wikipedia: https://en.wikipedia.org/wiki/Education_3.0)
The World is Open: How Web Technology Is Revolutionizing Education

Thirty Ways Learning is Changing...
(i.e., it's more informal, video-based, ubiquitous, collaborative, self-directed, global, mobile, open, massive, etc.)

30+ Ways Learning is Changing: The Mega Trends

How Learning is Changing: Mega Trend #1. Learner Engagement

August 17, 2016
Learning is More Hands-On
Research: 3D Printing Market to Double by 2020
Joshua Bolkan, Campus Technology
February 7, 2017 (Engagement)
Learning is More Social
YouTube takes on Facebook with mobile live
Jefferson Graham, USA Today

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Jefferson Graham, USA Today

May 31, 2017
Learning is More Digital and Resource Rich
Enticing Students to Read Again
Ellen McCracken, The Chronicle of Higher Education
http://www.chronicle.com/article/Enticing-Students-to-Read/144347

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February 27, 2017 (Engagement)
Learning is More Immersive
Augmented and Virtual Reality Spending to Double in 2017, Sri Ravipati, THE Journal

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Augmented and Virtual Reality Spending to Double in 2017, Sri Ravipati, THE Journal

May 18, 2017
Learning is More Immersive
Google Cardboard
Google Expeditions Adds Augmented Reality for Classrooms
Sri Ravipati, THE Journal
https://thejournal.com/articles/2017/05/18/google-expeditions-adds-augmented-reality-for-classrooms.aspx

May 18, 2017
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https://thejournal.com/articles/2017/05/18/google-expeditions-adds-augmented-reality-for-classrooms.aspx

May 7, 2015 (Engagement)
Learning is More Adventurous
Aaron Doering, Chasing Seals, TEDx
http://chasingseals.com/
https://twitter.com/chasingseals

May 7, 2015 (Engagement)
Learning is More Adventurous
Aaron Doering, Chasing Seals, TEDx
http://chasingseals.com/
https://twitter.com/chasingseals

July 22, 2016 (Engagement)
Learning is More Game-like
When Pokémon Goes to Campus: The Good, the Bad, and the Ugly
Gabriel Sandoval, Chronicle of Higher Education
http://chronicle.com/article/When-Pokemon-Goes-to-Campus-/237219?cid=trend_au&elqTrackId=c60af7ea6da640ec98d260eb7af9ef66&elq=95ace8ab293b4a5ead1a353c0e6f0dfc&elqaid=9961&elqat=1&elqCampaignId=3667

July 22, 2016 (Engagement)
Learning is More Game-like
When Pokémon Goes to Campus: The Good, the Bad, and the Ugly
Gabriel Sandoval, Chronicle of Higher Education
http://chronicle.com/article/When-Pokemon-Goes-to-Campus-/237219?cid=trend_au&elqTrackId=c60af7ea6da640ec98d260eb7af9ef66&elq=95ace8ab293b4a5ead1a353c0e6f0dfc&elqaid=9961&elqat=1&elqCampaignId=3667
**August 23, 2016 (Engagement)**

Learning is More Collaborative
e.g., reef videoconferencing
(Great Barrier Reef, Australia)


**February 15, 2017 (Engagement)**

Learning is More Synchronous
Shindig, Future Trends Forum, Bryan Alexander
https://bryanalexander.org/the-future-trends-forum/
http://www.shindig.com/
http://events.shindig.com/event/ftf-anniversary

**February 17, 2016 (Engagement)**

Learning is More Mobile
World's Cheapest Smartphone at $3.67

http://gadgets.ndtv.com/videos/freedom-251-launched-as-worlds-cheapest-smartphone-at-rs-251-

Samsung is hoping to have 10,000 apps by the time the Gear S3 launches this fall.

**How Learning is Changing:**

Mega Trend #2. Pervasive Access

informal global
free video-based
open ubiquitous
synchronous direct from experts
online immediate

**The Evolution of E-Learning (All 7 year cycles)**

Phase I, 1994:
The Age of Portals and Pages (Netscape Goes Public).

Phase II, 2001:
The Age of Openness (MIT OCW & Wikipedia Born).

Phase III, 2008:
The Age of MOocs (First MOOC Offered).

Phase IV, 2015:
The Age of Personalization.

Other prior significant e-learning dates:
1985: First Online Course, Linda Harasim, U. of Toronto
1987: Hypercard First Shipped.

**Learning is More Online (Access)**

June 15, 2014

Starbucks offers workers 2 years of free college, CNN Money, Gregory Wallace (from Arizona State online programs)

May 3, 2017
4 out of 5 Companies Have Hired a Coding Bootcamp Graduate
Sri Ravipati, Campus Technology

April 6, 2017
Learning is More Free and Open
Indiana University’s eText program saves students over $3.5 million (Program makes digital textbooks cost less and do more, grows 56 percent),
Indiana University Newsroom

March 27, 2017
Beyond Free: Harnessing the resonant value in open and collaborative practices for the public good
David Porter, CEO, eCampus Ontario,
Open Education Ontario Summit

July 2016
I. Elaine Allen and Jeff Seaman, Babson Survey Research Group

May 4, 2016
Learning is More Video-Based
What I Learned at the ASU GSV Summit
Kenneth Green, Inside Higher Ed

May 4, 2016
Learning is More Immediate...
Mastodon bones offer clues of earliest humans in North America,
Faith Karimi, CNN
January 20, 2016 (Customization)
Learning is More Blended
Universities tap growth of craft beer, offer classes, Chicago Tribune

March 23, 2017 (Customization)
Learning is More Personal
Arizona State U Launches Open, Adaptive Lessons on Space Exploration
Rhea Kelly, Campus Technology

May 20, 2016 (Customization)
Learning is More Massive
agMOOCs (India)
http://www.agmoocs.in/

April 20, 2015 (Customization)
Learning is More Massive
250 MOOCs and Counting: One Man’s Educational Journey, Chronicle of Higher Education
http://chronicle.com/article/250-MOOCs-Counting-One/229397/?cid=at

If the MOOC movement has faded, nobody told Jima Ngei. Mr. Ngei, who lives in Port Harcourt, Nigeria, has completed and passed 250.

Jima Ngei: “I had this unrelenting fear that this miracle of free access might evaporate soon.”

June 20, 2016
Coursera on a Mission to Help Refugees
Lauren Camera, US News and World Report

December 25, 2016
By The Numbers: MOOCs in 2016
Dhawa Shah, Class Central
December 25, 2016
Class Central

58M Students
700+ Universities
6850 Courses

June 15, 2017
MOOCs for Credit
Class Central
https://www.class-central.com/report/moocs-for-credit/

August 12, 2016 (Customization)
A Life of Happiness and Fulfillment
Indian School of Business, Rajagopal Raghathan

March 3, 2017 (Customization)
edX Expands MicroMasters Programs With Data Science (“nanodegrees”)
Digital Leadership and More, Sri Ravipati, Campus Technology

MOOCs and Open Education Around the World
http://routledge-rjy.com/books/details/9781138807419/

July 1, 2015 (Customization)
Chapter 14: Creating a Temporary Spontaneous Mini-Ecosystem through a MOOC
Paul Kim and Charlie Chung, Stanford University
Figure 2. Twitter thread announcing the MOOC
Chapter 15: Learning About MOOCs by Talking to Students
Charles Severance, Univ. of Michigan
Anuar Lequerica, Class Central

June 14, 2016 (Customization)

30+ Ways Learning is Changing:
Recapping the Three Mega Trends:
Engagement, Access, and Customization

Needed: New Models of Motivation and Engagement

Framework #1: 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/

在线学习动机与激励:
TEC-VARIETY 模型
2. Encouragement, Feedback:
   A. Demonstrations and Tutorials
      (e.g., Jing, Screenr, GoView, Screencast-o-matic, etc.)

3. Curiosity, Intrigue, Unknowns:
   A. Meet Corythoraptor: Newly found dinosaur resembles ostrich gone bad
      Traci Watson, USA Today

4. Variety, Novelty, Fun, Fantasy:
   A. Kahoot!
      https://getkahoot.com/
      I'm in 'Kahoots' with Technology in the Classroom
      Cassandra OSullivan Sachar, Faculty Focus

5. Autonomy, Choice:
   A. 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/

6. Relevance, Meaningfulness:
   A. MOOC Class Meet-Ups
      Beer Matters: Free Online Class With Meetups
      (September 6, 2017-October 21, 2017)
      Karl Brown, Assistant Professor of History
      http://www.gazettextra.com/20150921/uw_whitewater_teacher_explores_links_between_germans_beer_politics
      Video: http://curtbonk.com/beer.html (1:11)

7. Interactive, Collaborative:
   A. Guest Speaker Quotes
      (Rey Junco, February 25, 2013)
July 17, 2017

8. Engagement, Involvement:
A. Learning Chemistry in Virtual Reality, Sarah Hardman, New Learning Times
1:38 video: https://vialogues.com/vialogues/play/37237
01-43: https://vialogues.com/vialogues/play/37237
01-13: https://vialogues.com/vialogues/play/37237
2-1: https://vialogues.com/vialogues/play/37237

July 28, 2017

9. Tension, Challenge, Controversy, etc.:
A. Modern medicine breathes new life into virtual training
Videos:
01-21: http://curtbonk.com/vr-medicine.html
01-37: http://curtbonk.com/vr-medicine2.html
01-57: http://curtbonk.com/vr-medicine3.html

March 12, 2016

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

December 13, 2016

9. Tension, Challenge, Controversy, etc.:
A. Controversial Issue Debates
Librarians for Instructional Technology, Latrice Booker, R511, Fall 2016
https://bookerlr2000.wixsite.com/librariansforit/cognitivism
R511 Midterm Video How to Create an Authentic Environment in a Content-Driven School?, R511, Nick and Nik
https://www.youtube.com/watch?v=Bcr3_aZT_xQ&feature=youtu.be

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

Model #2: The R2D2 Model:
Read, Reflect, Display, Do…
May 28, 2015
Read. Immediate Science and Open Access Science
Ancient jawbones put new species on the human family tree, researchers say, Laura Smith-Spark, CNN
http://www.nature.com/nature/journal/v521/n7553/full/nature14448.html

Reflect. Big Issue Reflections
(Big Questions Online (BQO)), Feb 3, 2015
(e.g., Can a Living Creature Be As Big as a Galaxy?)
https://www.bigquestionsonline.com/

July 21, 2017
Display. A total solar eclipse is happening Aug. 21 and here's what you need to know
Sarah Kaplan, The New York Times

Do 4. Student Website Development
R511 Final Projects, April 2016
IT and HPT Comparison (Website), Doug Hsu
http://dougandindira.wix.com/r511finalproject
IST Construction, Co.
Rob Elliot, Patrick Walsh, Erin Milanese, R511, December 2016
http://relliott.net/istconstruction/index.php
http://educbasdogan.wixsite.com/511final

Poll #2: Which Model or Framework do you Prefer?
http://tec-variety.com/

What motivates?
1. Creativity, Psychological Safety, Control, Sense of Belonging
2. Engagement, Feedback, Recognition, Praise, Support
3. Community, Recognition, Insight, Information
4. Trust, Novelties, Fun, Challenge
5. Autonomy, Choice, Control, Feedback, Opportunities
6. Knowledge, Mastery, Autonomy, Intrinsic
7. Interactivity, Collaboration, Team-Based, Community
8. Engagement, Effort, Instrumental Investment
9. Success, Challenge, Emotional, Environment
10. Valuing Predictability, Goal-Directed, Frustration, Vision, Commitment
Poll #3: Who is now interested in Education 20/20…?

We are entering a jumping off point…
(South University of Science and Technology of China, Wednesday June 10, 2015)

Things are heating up…

Education 20/20 is coming within reach!

Remember for Education 20/20 to make an impact:
“I cannot do this alone.”
“ I cannot do this alone.”
“ I cannot do this alone.”

Any Questions or Comments?

Slides at: TrainingShare.com
Papers: PublicationShare.com
Free book: http://tec-variety.com/
Email: curt@worldisopen.com