Building Connected Learning for the Digital Age

Cyprien Lomas, Ph.D. and Ruben R. Puente, Ph.D.
# Key Trends Driving Ed Tech Adoption

<table>
<thead>
<tr>
<th>Fast (1-2 yrs.)</th>
<th>Growing Ubiquity of Social Media Integration of Online, Hybrid, and Collaborative Learning</th>
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<td>Agile Approaches to Change Evolution of Online Learning</td>
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# Important Ed Tech Developments

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<tr>
<th>Adoption: 1 yr. or less</th>
<th>Flipped Classroom Learning Analytics</th>
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# Significant Challenges Impeding Ed Tech Adoption

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<th>Solvable</th>
<th>Difficult</th>
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<td>understand and know how to solve</td>
<td>understand but solutions are elusive</td>
<td>complex to define, much less address</td>
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<td>Low Digital Fluency of Faculty Relative Lack of Rewards for Teaching</td>
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Connected Learning

- **Learning Principles**
  - *Interest-Powered*
    - Driven by learner interests and passions
  - *Academically Oriented*
    - Focused on intellectual growth & opening of social, economic, political opportunities
  - *Peer Supported*
    - Based upon an underlying ecology of peer participation, sharing, feedback

- **Design Principles**
  - *Production-Centered*
    - Learners as makers and doers
  - *Openly Networked*
    - All learning settings – school, home, community – linked and supported
  - *Shared Purpose*
    - Cross-generational, cross-community focus on common goals
An occasional paper on digital media and learning

Confronting the Challenges of Participatory Culture: Media Education for the 21st Century

Henry Jenkins, Director of the Comparative Media Studies Program at the Massachusetts Institute of Technology
with
Katie Clinton
Ravi Purnhota
Alice J. Robinson
Margaret Weigel
Participatory Culture

• **Forms:**
  • Affiliations
  • Expressions
  • Collaborative Problem-solving
  • Circulations

• **New Literacies, Requiring New Skills:**

• **Associated Concerns:**
  • The Participation Gap
  • The Transparency Problem
  • The Ethics Challenge

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Connected Learning

- Person in the street interview
Connected Learning

• How to make a streeter...
The Road to Agile

- **Brooks: The Mythical Man-Month (1975)**
  - “The man-month is a fallacious and dangerous myth, for it implies that men and months are interchangeable.”
  - “A small sharp team is best – as few minds as possible.”
  - “Plan to throw one away; you will, anyhow.”

- **Alexander et al.: A Pattern Language (1977)**
  - “Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice.”

- **Gamma, Helm, Johnson, Vlissides: Design Patterns (1995)**
  - Translates Alexander’s approach to design from architecture to programming.

- **Beck: Extreme Programming Explained (1999)**
  - Defines a programming methodology stressing:
    - small teams, working (preferably) in a single room in pairs, with expert customer representatives on-site;
    - short programming cycles, with emphasis on constant refactoring and usable code produced at the end of each iteration;
    - stories jointly developed and negotiated by the customer and the team as the basis for development and documentation.

- **The Agile Software Development Manifesto (2001)**
  - Comprises four values and twelve principles.
Agile: Four Values

• Agile Development Processes value:
  • Individuals and interactions over processes and tools;
  • Working software over comprehensive documentation;
  • Customer collaboration over contract negotiation;
  • Responding to change over following a plan.
Agile Methodologies: Timelapse
Agile Methodologies: Quick Research Pitch
Institutional Structures and Processes: Impact and Consequences

Customization of Learning

- Interest-Powered
- Openly Networked
- Academically Oriented
- Shared Purpose
- Production-Centered
- Peer-Supported

Maker Spaces

Institutional Objectives
Institutional Structures and Processes

- Global Resources Systems blogs

Volunteering at UBC Farm

Posted on June 5, 2014

A few days ago on June 3 was my first time volunteering at the UBC farm and it was a blast! I signed up for the volunteer shift a couple weeks ago, knowing that I wanted to volunteer with the Indigenous Health Gardens. I wanted to learn more about traditional and medicinal plants while as taking part in helping maintain the gardens. Nonetheless, I found it to be a very rewarding experience.
Institutional Structures and Processes

- Videoscribe
Building Robust Frameworks to Evaluate and Assess New Practices

• Design Evaluation Phase
  • SAMR
  • TPCK
  • EdTech Quintet

• Assessment Phase
  • Formative Assessment Results
  • SOLO
  • Facione’s Critical Thinking Taxonomy
Redefinition
Tech allows for the creation of new tasks, previously inconceivable

Modification
Tech allows for significant task redesign

Augmentation
Tech acts as a direct tool substitute, with functional improvement

Substitution
Tech acts as a direct tool substitute, with no functional change

Ruben R. Puentedura, As We May Teach: Educational Technology, From Theory Into Practice. (2009)
<table>
<thead>
<tr>
<th>Social</th>
<th>Mobility</th>
<th>Visualization</th>
<th>Storytelling</th>
<th>Gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>200,000 years</td>
<td>70,000 years</td>
<td>40,000 years</td>
<td>17,000 years</td>
<td>8,000 years</td>
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Applying Seymour Papert’s Four Expectations

• **Expectation 1**: suitably designed formative/summative assessment rubrics will show improvement when compared to traditional instruction.

• **Expectation 2**: students will show more instances of work at progressively higher levels of the SOLO model.

• **Expectation 3**: student work will demonstrate more – and more varied – critical thinking cognitive skills, particularly in areas related to the examination of their own thinking processes.

• **Expectation 4**: student daily life will reflect the introduction of the technology. This includes (but is not limited to) directly observable aspects such as reduction in student attrition, increase in engagement with civic processes in their community, and engagement with communities beyond their own.

“Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited.”
The SOLO Model

Levels derived from SOLO (Biggs & Collis – Structure of Observed Learning Outcome)

- Tier 1: List, Name, Memorize (*Unistructural*)
- Tier 2: Describe, Classify, Combine (*Multistructural*)
- Tier 3: Analyze, Explain, Integrate (*Relational*)
- Tier 4: Predict, Reflect, Theorize (*Extended Abstract*)

<table>
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<th>Skill</th>
<th>Subskills</th>
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<td>Interpretation</td>
<td>Categorization</td>
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<td>Decoding Significance</td>
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<td></td>
<td>Clarifying Meaning</td>
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<tr>
<td>Analysis</td>
<td>Examining Ideas</td>
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<td>Identifying Arguments</td>
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<td></td>
<td>Analyzing Arguments</td>
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<tr>
<td>Evaluation</td>
<td>Assessing Claims</td>
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<tr>
<td>Inference</td>
<td>Querying Evidence</td>
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<td>Conjecturing Alternatives</td>
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<td>Drawing Conclusions</td>
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<tr>
<td>Explanation</td>
<td>Stating Results</td>
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<td>Justifying Procedures</td>
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<td>Presenting Arguments</td>
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<td>Self-Regulation</td>
<td>Self-examination</td>
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<td>Self-correction</td>
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SAMR SLAMR

Focus on:
- Process
- Creation

SLAM:
- 3 Case Studies
- Facebook

SLAMR Explainer:
- Substitution
- Augmentation
- Modification
- Redefinition

Spink Randomly Selects an App
1. Call Out SAMR Level
2. Invent!

SAMR Sample
- Podcast
- iBooks Content Distribution
- iMovie

Twitter: @braddock
Building Robust Frameworks to Evaluate and Assess New Practices

- New practices for flipped classrooms
  - games
  - community-based learning assignments
  - new ways of representing knowledge
    - sketchnotes (Brad Ovenell-Carter)
Building Robust Frameworks to Evaluate and Assess New Practices

• The Flexible Learning Team

• instructor, technologist, post doctoral fellow

• assessments - frequent

  • how was this assignment?

  • clickers

  • focus groups
Building Robust Frameworks to Evaluate and Assess New Practices

- Self aware students
- “How do you feel?”
Connected Courses is a collaborative community of faculty in higher education developing networked, open courses that embody the principles of connected learning and the values of the open web.
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• Ruben R. Puentedura, Ph.D. – rubenrp@hippasus.com
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