A framework for evaluating online learning in an ecology of sustainable innovation

George Bradford, PhD, University of South Australia
Ben Kehrwald, PhD, University of South Australia
Stuart Dinmore, PhD, University of South Australia

An emerging framework for evaluating online learning in an ecology of sustainable innovation

Develop your framework in 3 steps

George Bradford, PhD, University of South Australia
Ben Kehrwald, PhD, University of South Australia
Stuart Dinmore, PhD, University of South Australia

The Questions

- How does an organization know their practice of online teaching and learning is innovative?
- And, is innovation sustainable?
- Context is very pertinent (Allen & Seaman, 2010):
  - Large (and growing) number of institutions consider online teaching and learning to be strategic
  - In the US from 2009 to 2010, 1 million more students took a course online
  - Nearly 30% of all students take at least one course online
  - Institutional support requires “heavy lifting”: course / program development + material conversion and testing + academic readiness and support + student support = high resource requirements
  - High stakes future: Competition for students between institutions is no longer restricted by
    - Geography
    - Traditions

The sub questions

In context of online teaching and learning,

- What is *innovation*?
- What is to be evaluated?

Your reality…maybe not mine

- Evaluating implies a minimum of two reference points
- Comparative data may be… well, anything!
- Institutions will be different, implying difficulty with "between subjects" analysis

Framework for evaluation must…

- Answer "my" institution's questions
- Reflect "my" institution's vision, mission, values, and… organizational reality

Perspectives on innovative practice

- "Balance the projected costs against future value"

  (Dr. Joel Hartman, Vice Provost for Information Technologies and Resources, University of Central Florida)

- "Open up instructional design practices… Try the unconventional"

  (Dr. Larry Ragan, Director- Instructional Design & Development Continuing and Distance Education/World Campus, Penn State University)

- "Look to internal resources who experiment"

  (Dr. William Patterson, eLearning Innovations and Entrepreneurial Partnerships, University of South Florida)

- "Develop collaborative environments, let students own and innovate while you facilitate"

  (Dr. Howard Rheingold, Berkley & Stanford Universities, author of: *Tools for Thought* (http://www.rheingold.com/texts/tft/); *The Virtual Community* (http://www.rheingold.com/vc/book/); and *Smart Mobs* (http://www.smartmobs.com))

Reducing... two principal targets

- Characterize innovative practices of online teaching and learning

- Examine the organization that sustains innovative practices

Characterizing innovative practices

- Context of online learning and teaching

“Variety” complicates characterizing

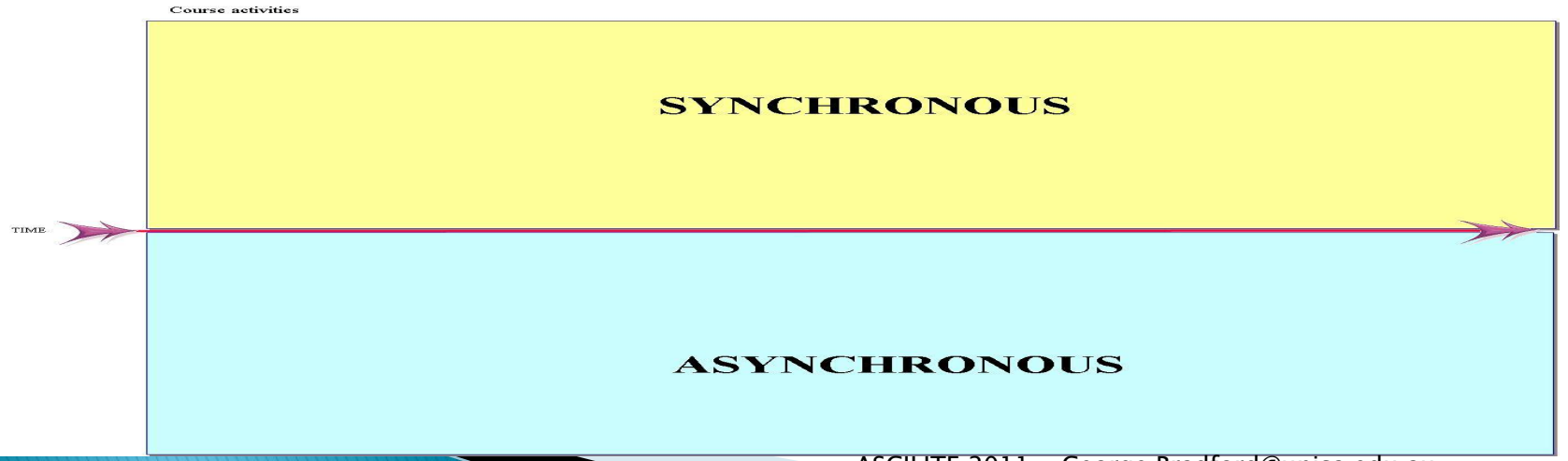
- “You” need to identify when innovation is taking place in “your” institution…whether it is…
  - A “new” technology
  - An “old” technology used differently
  - A “new” pedagogy
  - An “established” pedagogy used differently
- Innovation can be one of the above, some of the above, all of the above, or even none of the above

Useful strategy to consider

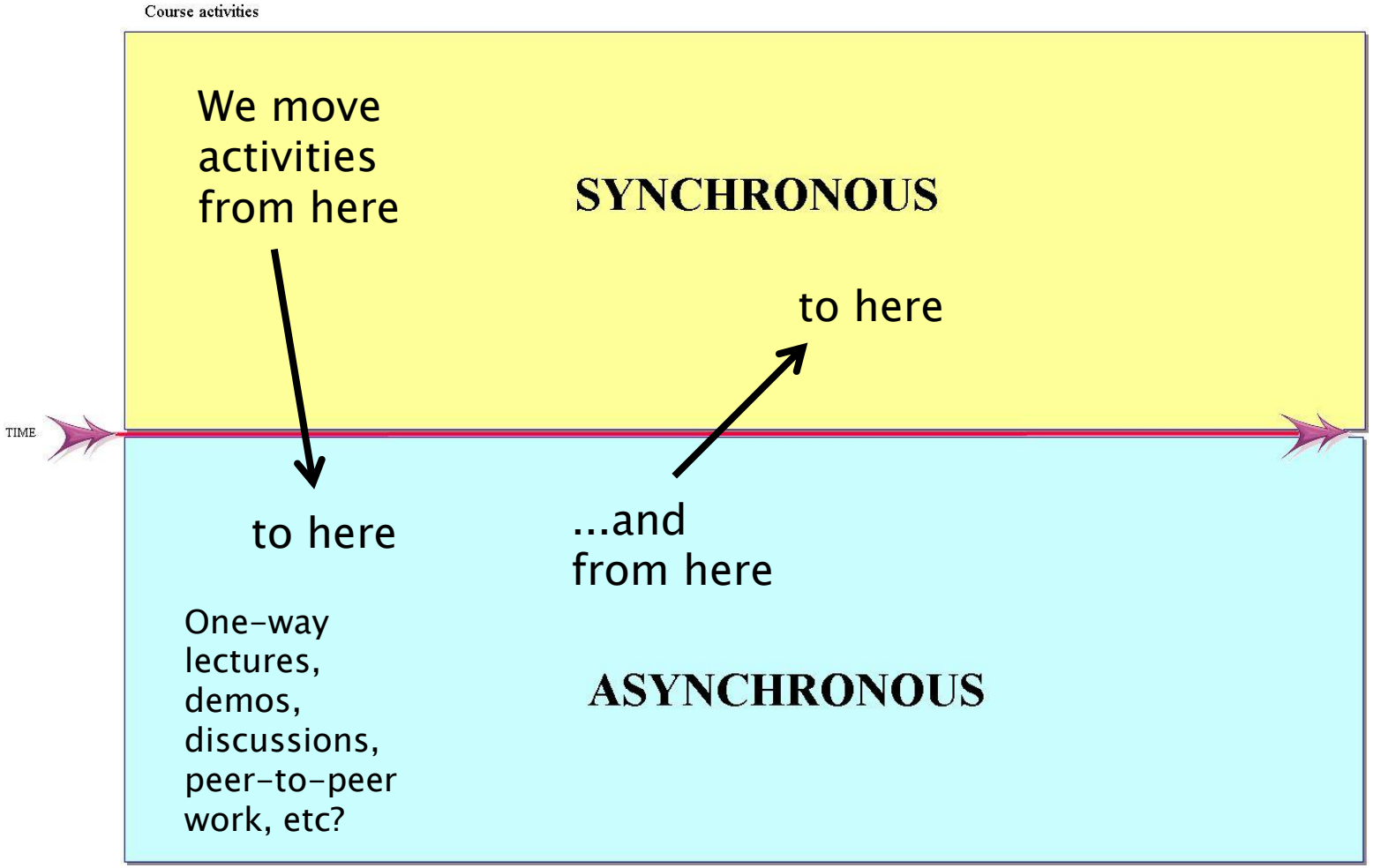
- Time-based model of teaching and learning

  (Norberg, Dziuban, & Moskal, 2011: http://www.emeraldinsight.com/journals.htm?articleid=1947845&show=abstract)

  - Two categories only: courses taught completely online and courses that blend
  - From a student's experience, any course can be fully described by its synchronous and asynchronous activities



Innovation may be...



Norberg: A Time-Based Blended Learning Model
16th Annual Sloan-C Conference, November 5, 2010

Innovation opportunities

- Support
  - for asynchronous type work, look to using Learning Management Systems (LMS), blogs, drop-boxes, forums, twitter, and other Web2.0 technologies
- Migration
  - typical course designs tend to group activities as taking place during the meetings (i.e., synchronous sessions) or on the student's own time (i.e., asynchronous sessions). With a time-based model and leveraging TEL or online infrastructures, traditional course elements offer an opportunity to innovate: sessions can be translated from one format to another to better advantage of resource use (eg the flipped classroom)
- Synchronous location
  - traditional course designs tend to assume co-location as a requirement. However, co-location should be thought of as an opportunity for innovation: co-location should not always be a requirement of synchronous meetings, as ICT can be used to provide access to distant students
- Flow
  - between instructional strategies. Examine flow to recognize and manage how activities are connected and supported
- Learner empowerment
  - students are most effective when they can access all course content anywhere and at anytime. Also, their social networks can be useful for enhancing their studying or for clarifying directions from synchronous meetings (e.g. Lectures) or interactions during those meetings

Framework construction – Step 1: Characterize innovation

- In the context of your institution, describe *innovation*
  - Identify / articulate characteristics of innovative practice
  - Consider connecting practices with – institutional / division / school – target goals / objectives
  - Set a suitable timeframe for the study
  - Identify suitable study opportunities – specific courses or programs

Examine the organization

- What are the key influences that support innovative practice?

Useful strategy to consider

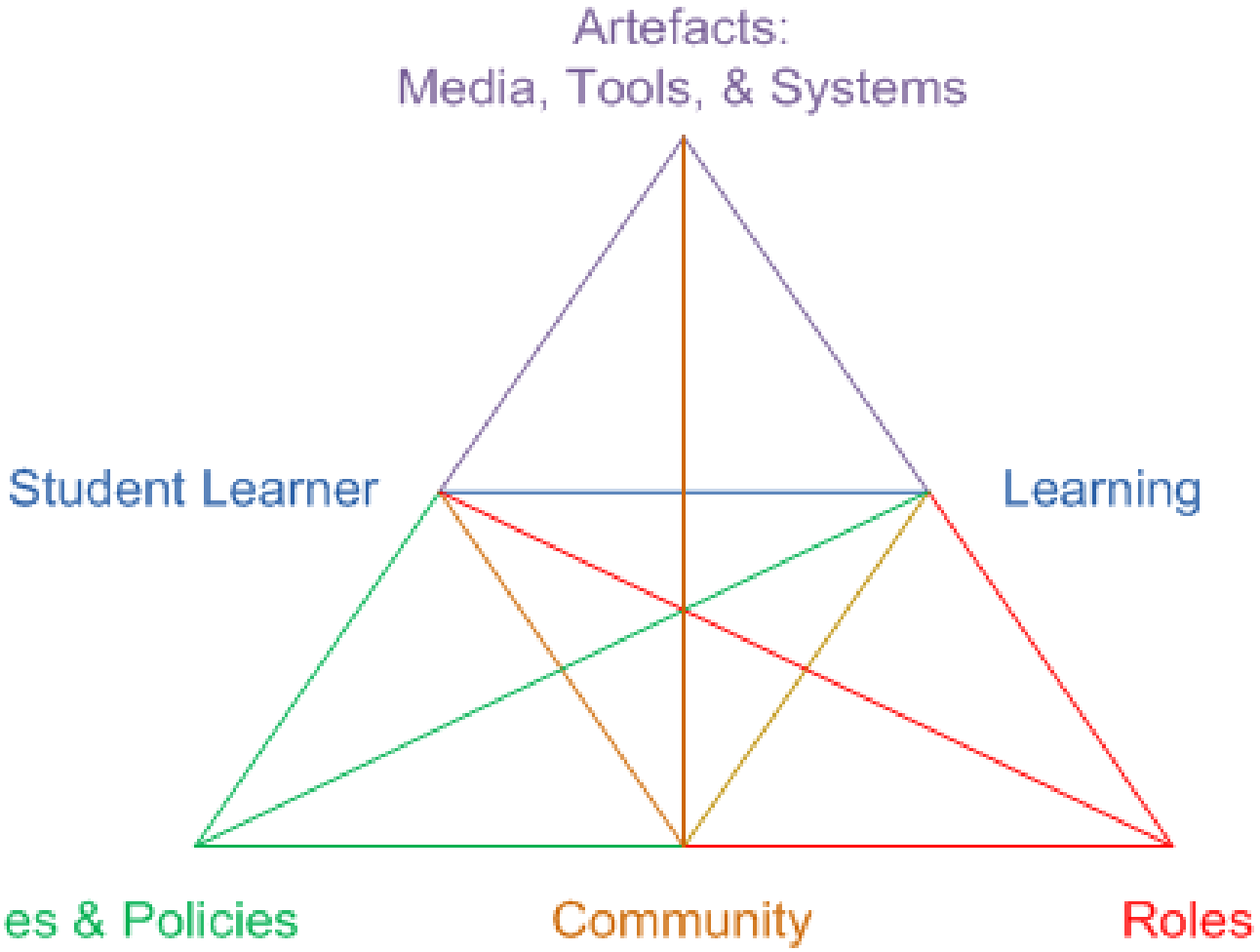
- Unbundling conceptually a social focus on ecology requires identifying key actors and recognizing the relationships between them

- Consider Activity Theory

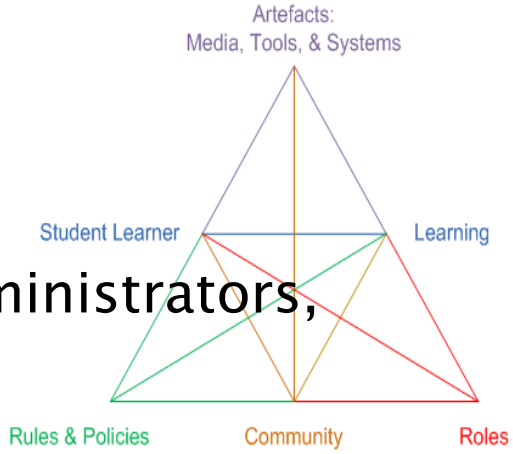
  (Leont'ev (1932), Luria (1928, 1932), and Vygotsky (1929) in the cultural-historical school of psychology; see Cole & Engeström (1993))

- The Actors:
  - subject, mediating artefacts, object, division of labour (or the different roles that exercise an influence on the subject), community, and rules

An Activity Theory Representation



Breaking it down



- Roles
  - Students, teachers, designers, tutors, administrators, leaders, ...
- Community
  - peers in the course(s) currently engaged, as well as study groups, or other clubs, family, culture, ...
- Rules & Policies
  - course requirements, moral and ethical obligations associated with study and research, institutional policies, ...
- Media, Tools, & Systems
  - books, paper articles, audio and video materials, a myriad of technologies, such as learning management systems, both synchronous and asynchronous, computer programs, and...pedagogy*

* for simplicity, pedagogy can be considered a mediator for learning

Framework construction – Step 2: Examine your organization

- Match which organizational actors have strongest influence on innovative practice
  - Short term
  - Longer term

- Identifying the actors and examining their influence on practice over time permits opportunities for improvement / refinement

Evaluating

- Formalize study plan

Framework construction – Step 3: Select suitable study methodology

- Consider methodology – What will be your end goal?
  - Collect data
  - Conduct analysis
  - Detail findings
  - Suggest interpretative explanations
  - Disseminate results
  - Discuss suggested improvements / next steps
  - Act – Implement improvements
  - Repeat steps

- Some formal approaches...
  - Design and Development Research (Richey & Klein, 2007)
  - Formative Research (Reigeluth & Frick, 1999)
  - Action Research

- Or an informal approach...
  - Check lists, scored spreadsheet, ...
  - Simple qualitative strategies

In a nutshell

- Characterize innovation
- Review the organization that will sustain innovation
- Select targets and timeframe for study
- Conduct data collection and analysis
- Report the findings within the context of effectiveness and sustainability
  - Does innovation yield desired results?
  - What will be required to sustain innovation?
- Act on the knowledge

Questions

- Let's collaborate:

- George – George.Bradford@unisa.edu.au

References

- Allen, I. E., & Seaman, J. (2008). *Staying the course: Online education in the united states, 2008*. Olin and Babson Colleges, MA: Sloan-C.
- Cole, M., & Engeström, Y. (1993). A cultural-historical approach to distributed cognition. In G. Salomon (Ed.), *Distributed cognitions: Psychological and educational considerations* (1st ed., pp. 1-46) Cambridge University Press.
- Ellis, R., & Goodyear, P. (2010). *Students' experiences of e-learning in higher education: The ecology of sustainable innovation*. New York, NY: Taylor & Francis.
- Leont'ev, A. N. (1932). Studies in the cultural development of the child, 3: The development of voluntary attention in the child. *Journal of Genetic Psychology, 37*, 52-81.
- Luria, A. R. (1928). The problem of the cultural development of the child. *Journal of Genetic Psychology, 35*, 506.
- Luria, A. R. (1932). *The nature of human conflicts.* New York: Liveright.
- Norberg, A. (2010). A Time-Based Blended Learning Model. 16th Annual Sloan-C Conference, Orlando, Fl.
- Norberg, A., Dziuban, C., & Moskal, P. (2011). A time-based blended learning model. *On the Horizon*. UK: Emerald Group Publishing Limited.
- Reigeluth, C. M., & Frick, T. W. (1999). Formative research: A methodology for creating and improving design theories. In C. M. Reigeluth (Ed.), *Instructional-design theories and models: A new paradigm of instructional theory* (pp. 633-652). Mahwah, NJ: Lawrence Erlbaum Associates.
- Richey, R. C., & Klein, J. D. (2007). *Design and development research: Methods, strategies, and issues*. Mahwah: Lawrence Erlbaum.
- Vygotsky, L. S. (1929). The problem of the cultural development of the child, II. *Journal of Genetic Psychology, 36*, 415-434.

Course Elements and Communication Environments (Norberg 2010)