Three generations of
Distance Education Pedagogy:
Past, Present and our Networked Future

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Overview

• Technological Determinism in Flexible Education
• Generations of Flexible Learning Pedagogy
• A Network and Connective future for Flexible Learning
Values

• We can (and must) continuously improve the quality, effectiveness, appeal, cost and time efficiency of the learning experience.

• Student control and freedom is integral to 21\textsuperscript{st} Century life-long education and learning.

• Current educational models do not scale for lifelong learning for all residents of our planet.
Dealing with Distance Education
Technological Determinism

The Man with the Magic Lantern,
a tribute to educator Ned Corbett
Distance Education is, by definition, technologically mediated and thus is influenced by technological determinism.

BUT....

- **Interpretative Flexibility**
  - each technological artifact has different meanings and interpretations

- **Relevant Social Groups**
  - many subgroups of users with different applications

- **Design Flexibility**
  - A design is only a single point in the large field of technical possibilities

- **Problems and Conflicts**
  - Different interpretations often give rise to conflicts between criteria that are hard to resolve technologically
    - (Wikipedia, Sept, 2009)

Three Generations of Flexible Learning Pedagogies

1. **Behaviourist/Cognitive**
   - *Self Paced, Individual Study*

2. **Constructivist** – *Groups*

3. **Connectivist** – *Networks and Collectives*
1. Behavioural/Cognitive Pedagogies

- “tell ‘em what you’re gonna tell ‘em,
- tell ‘em
- then tell ‘em what you told ‘em”

Direct Instruction
Gagne’s Events of Instruction (1965)

1. Gain learners' attention
2. Inform learner of objectives
3. Stimulate recall of previous information
4. Present stimulus material
5. Provide learner guidance
6. Elicit performance
7. Provide Feedback
8. Assess performance
9. Enhance transfer opportunities
Enhanced by the “cognitive revolution”

- Chunking
- Cognitive Load
- Working Memory
- Multiple Representations
- Split-attention effect
- Variability Effect
- Multi-media effect
  – *(Sorden, 2005)*

“learning as acquiring and using conceptual and cognitive structures” Greeno, Collins and Resnick, 1996
Focus is on the Content and the Individual Learner
Behaviourist/Cognitive Knowledge Is

• Logically coherent, existing independent of perspective
• Context free
• Capable of being transmitted
• Assumes closed systems with discoverable relationships between inputs and outputs
Behaviourist/Cognitive Technologies

Content is king
The End of Content Scarcity

• Massive Global decrease in costs, complexity and collaboration,

• Massive Increase in convenience and access
New Content Providers - iTune U

- “iTunes is not simply a repository of more than 8 million songs, audio books, videos and 70,000 or so iPhone applications.
- It also has the **world's largest, constantly available, free educational resource**” — iTuneSU.
Value of Good Canned content
“The Great Courses” - $69-$199 (Canadian)
New Information Competitors

• Publishers as full meal deal providers
  – Web sites; mobile quizzes, audio and video podcasts, interviews, online and mobile versions, Powerpoint slides, testing

• Professional & Academic
  – full service web sites
  – accreditation
New Developments in First Generation Systems

- Reflection Amplifiers
- Social Indicators
  - Digital footprints
  - Archives
  - Competition and games
- Multiple Representations
- Student modeling and adaptation
What is the role of postsecondary institutions in a world where content is available for free for everyone?
- Teaching what/how?
- Examining and credentialing?
- Prior learning assessment?

Do Behaviourist/Cognitive Pedagogies adequately guide learning designs that meet today’s student needs?
Behavioural/cognitive learning is necessary but not sufficient for quality education.
2. Constructivist Pedagogy of Flexible Learning

- New knowledge is built upon the foundation of previous learning,
- The importance of context
- Errors and contradictions are useful
- Learning as an active rather than passive process,
- The importance of language and other social tools in constructing knowledge
- Focus on meta-cognition and evaluation as a means to develop learners capacity to assess their own learning
- The importance of multiple perspectives - groups
- Need for knowledge to be subject to social discussion, validation and application in real world contexts
Constructivist Knowledge is:

• Socially constructed
• Arrived at through dialogic encounter
  – (Bakhtin, 1975)
• “Dialogic as an epistemological framework supports an account of education as the discursive construction of shared knowledge”
  – (Wegerif, R., 2009)
Where does Constructivist learning Happen?

• “learning as located in the contexts and relationships, rather than merely in the minds of individuals”
  – Greenhow, Robelia, & Hughes, (2009)

• The Context of the our age is increasingly online
Assessing students using Constructivist Learning

• “What is important is the process of knowledge acquisition, not any product or observable behavior.”

– Jonassen, 1991
Constructivist Evaluation

• the frequency with which students participate in activities that represent effective educational practice, is a meaningful proxy for collegiate quality and, therefore, by extension, quality of education.

• What are effective practices?
  – Level of academic challenge
  – Active and collaborative learning
  – Student-faculty interaction
  – Enriching educational experiences
  – Supportive social interaction.  (National Survey of Student Engagement, 2003)
Constructivist learning is Group Learning

- Motivation
- Feedback
- Alternate viewpoints
Taxonomy of the ‘Many’ –
A Conceptual Model
Dron and Anderson, 2007

Group
Conscious membership
Leadership and organization
Cohorts and paced
Rules and guidelines
Access and privacy controls
Focused and often time limited
May be blended F2F

Metaphor:
Virtual classroom
Why Groups?

• “Students who learn in small groups generally demonstrate greater academic achievement, express more favorable attitudes toward learning, and persist ...

• small-group learning may have particularly large effects on the academic achievement of members of underrepresented groups and the learning-related attitudes of women…”

• Springer; Stanne, & Donovan, (1999) P.42
Why Groups?

- Athabasca University’s learner-paced undergraduate courses averaged 63.6% completion rates for the 2002-2003 academic year. Completion rates for the same courses offered in seminar format (either through synchronous technologies or face-to-face) averaged 86.9% over the same period (Athabasca University, 2003, p.12).
Constructivist Learning in Groups

- Long history of research and study
- Established sets of tools
  - Classrooms
  - Learning Management Systems
  - Synchronous (video & net conferencing)
  - Email
- Need to develop face to face, mediated and blended group learning skills

Cohort Communities of Practice

- Wenger’s ideas of Community of Practice
  - mutual engagement – synchronous and notification tools
  - joint enterprise – collaborative projects
  - a shared repertoire – common tools, Moodle, resource and doc sharing
Problems with Groups

• Restrictions in time, space, pace, & relationship - NOT OPEN
• Often overly confined by leader expectation and institutional curriculum control
• Usually Isolated from the authentic world of practice
• “low tolerance of internal difference, sexist and ethicized regulation, high demand for obedience to its norms and exclusionary practices.” Cousin & Deepwell 2005
• “Pathological politeness” and fear of debate
• Group think (Baron, 2005)
• Poor preparation for Lifelong Learning beyond the course

Paulsen (1993)
Law of Cooperative Freedom
• Groups are necessary, but not sufficient for advanced forms of learning.
3. Networked Learning using **Connectivist Pedagogy**

- Learning is building networks of information, contacts and resources that are applied to real problems.
Connectivist Learning Principles

George Siemens, 2004

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process.
Connectivist Knowledge is

- Emergent
- Distributed
- Chaotic
- Fragmented
- Non sequential
- Contextualized
Connectivist focuses on Networks - - not Groups

Network
- Shared interest/practice
- Fluid membership
- Friends of friends
- Reputation and altruism driven
- Emergent norms, structures
- Activity ebbs and flows
- Rarely F2F

Group

Metaphor: Virtual Community of Practice

Dron and Anderson, 2007
Networks Add diversity to learning

“People who live in the intersection of social worlds are at higher risk of having good ideas” Burt, 2005, p. 90
Communities of Practice

- Distributed
- Share common interest
- Mostly self-organizing
- Open – Learning beyond the course
- No expectation of meeting or even knowing all members of the Network
- Little expectation of direct reciprocity
- Contribute for social capital building, altruism and a sense of improving the world/practice through contribution.

(Brown and Duguid, 2001)
Related Pedagogies

- **Participatory Pedagogy** (Bruns, A. (2008). *Blogs, Wikipedia, Second Life, and Beyond: From Production to Produsage.*)
  - Students as content co-creators

- **Complexity** (Davis, B., & Sumara, D. (2006). *Complexity and Education*)
  - the unfinished course
  - Learning in environments in which activities and outcomes emerge in response to authentic needs creates powerful learning opportunities
  - Learning at the “edge of chaos”
  - *Complicity: An International Journal of Complexity and Education*

- **Transparency** (Dalsgaard, C., & Paulsen, M. (2009). Transparency in Cooperative Online Education. *International review of Research in Open and Distance Learning, 10*(3))

See the [Networked Student](#) by Wendy Drexler
How do we Build Networks of Practice?

• Motivation – marks, rewards, self and net efficacy, net-presence

• Structural support
  – Exposure and training
  – Transparent systems
  – Wireless access, mobile computing

• Cognitive skills – content + procedural, disclosure control

• Social connections, reciprocity
  – Creating and sustaining a spiral of social capital building
    • Nahapiet & Ghoshal (1998)
New Yorker Cartoon

by Alex Gregory

"I had my own blog for a while, but I decided to go back to just pointless, incessant barking."

Creating Incentive to Sustain Contribution to Networks

The New Yorker September 12, 2005
Connectivist Tools

http://www.go2web20.net/
Connectivist Technology
Examples from Athabasca

• Elgg – Landing.athabascau.ca – Social networking
• Easy M-Cast (Podcast, videocasts, screen casts)
• Tutor “office hours” & recorded via Elluminate
• Athabasca presence in immersive worlds ie Second Life
• AU on FaceBook
• AU on RateMyProfessor
• Media Lab at AU – Communication tool chests
• New Pedagogical Model for AU self-paced courses
Challenges of Connectivist Learning Models

• Privacy
• Control
• Institutional Support
• Sustaining motivation and commitment
• Dealing with disruptive change
Network Tool Set (example)
Access Controls in Elgg

The idea of the Landing is to spawn and support a participatory culture at Athabasca. We have been trying to do this with faculty and talking (but doing little) to encourage this with tutors and nothing at all to allow the majority of our self-paced learners to engage and participate in our academic culture.

Jenkins et al. (2009) describe a participatory culture as one:

- With relatively low barriers to artistic expression and civic engagement
- With strong support for creating and sharing one’s creations with others

For help with Blogs, please click here.
Athabasca University

- AlFresco CMS
- Moodle
- Registry
- Library
- Course Development

Open Net

- OERs, YouTube
- Research/Community Networks
- Athabasca Landing
  - E-Portfolios
  - Profiles
  - Networks
  - Bookmarks
  - Bookmarks

MY AU Login

Discovery
Read & Comment

Passwords

Sample CC
Course units and
Branded OERs

ALGG

Media lab

Single Sign on

Secondlife campus

Passwords

Library

Sample CC
Course units and
Branded OERs

Secondlife campus
Conclusion

• Behavioural/Cognitive models are useful for memory and conceptual knowledge
• Constructivist models develop group skills and trust
• Connectivist models and tools introduce networked learning and are foundational for lifelong learning in complex contexts
• All of us need to develop our personal learning networks
"He who asks a question is a fool for five minutes; he who does not ask a question remains a fool forever.”

Chinese Proverb

Your comments and questions most welcomed!

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