“Second Generation” e-Learning:
Design and Implementation

Jean Adams, Schulich School of Business
Institute for Research on Learning Technologies
York University - May 15, 2006

"TRAINED INCAPACITY" AND SELF-LIMITATION

Individuals and organizations often miss valuable opportunities for learning and development because they have been conditioned and trained to perform in ways that have outlived their usefulness. By recognizing the problem it is possible to challenge many self-imposed limitations.

… Does it feel like students are "parking their brain" when they come to class? …

FIVE WAYS THAT 'LEARNING LABS' CAN ACCELERATE PERFORMANCE

When faced with complex problems where the costs of failure are high, or difficult situations that require "hands on" learning, it is often possible to benefit from the use of formal and informal learning laboratories to accelerate learning and avoid costly mistakes.

Or, are they engaged in learning – eager to experiment and explore?

… My aim is to give you some ideas for using e-learning technologies to empower learning …

Overview & Agenda

- Introduction / Research Background
- Key Point #1: The distinction between “first” and “second generation” e-learning
- Key Point #2: The “Learning Triangle” and its importance
- Key Point #3: “Second generation” e-learning in practice
- Concluding thoughts …

Please feel free to ask questions throughout…

Your interests ?

- [] Technology issues / seeing the online system
- [] Design principles & system characteristics
- [] Pedagogy / Andragogy issues
- [] Web-based learning support issues
- [] Case studies / models for “blending”
- [] Other ? …

What is e-Learning?

- The definition has changed over the years. It used to refer to any materials that were offered electronically …

- Today it generally refers to *web-based products and services designed to support individual, team, and organizational learning.*

  e.g. e-content, e-gameware, e-cases, e-rooms, e-tools, e-videos, e-surveys, e-chatlines, e-groupware, e-videos, e-administration, etc.

Some Background: The *NewMindsets* Research Story …

- 1998 - The vision …
- 1999 - Concept testing …
- 2000 - Prototyping and pilot testing …
- 2001 to 2006 - *Continuous learning and exploration using blending strategies to maximize learning impact* in a variety of contexts including corporate, government, not-for-profit, financial, professional associations, healthcare, and education …

… FROM AN e-LEARNING INDUSTRY PERSPECTIVE …

FIRST GENERATION

- **A linear model**
- **Technology-driven**

Major disappointment ...

- Inflexible learning paths
- Poor ROI
- Crisis of confidence in e-learning

SECOND GENERATION:

- **A free-flow model**
- **Learning-quality driven**

LEARNING TO CHALLENGE "MENTAL MODELS"

Mental models are frames that we carry "in our heads." They embody deeply held images and assumptions that can shape our perceptions and actions. At times they also prevent us from taking action. By being aware of their influence, individuals and organizations can learn to challenge and change them when necessary.

… Challenging the underlying assumptions driving e-learning design and implementation …

Key Point # 1: The distinction between “first” vs. “second generation” e-learning

- **“First Generation” e-Learning:** a step-by-step *structured learning experience* based on a traditional classroom / course model with pre-determined learning paths and online tests for evaluating progress and retention …

- **“Second Generation” e-Learning:** a *free-flow learning experience* driven by learners’ immediate needs that invites and engages flexible, self-organizing learning focused on improving personal performance in context-specific daily work practice …

Key Characteristics and Design Principles

"First Generation"

- **Technology driven**
- **Linear-sequential logic (i.e. organized)**
- ***Instructor-in-control***
- **Evaluation based on content memorization, repetitive practice and "passing the test"**
- **Engagement through visual animation (e.g. bells and whistles)**
- **Separates theory and practice**
- **Separate systems for learning and knowledge capture / dissemination**

Key Characteristics and Design Principles

"First Generation"

- Technology driven
- Linear-sequential logic (i.e. organized)
- Instructor-in-control
- Evaluation based on content memorization, repetitive practice and "passing the test"
- Engagement through visual animation (e.g. bells and whistles)
- Separates theory and practice
- Separate systems for learning and knowledge capture / dissemination

"Second Generation"

- **Pedagogy driven**
- **Holographic-fractal; self-organizing**
- ***Learner-in-control***
- **Evaluation based on self-assessment, reflective practice and successful application**
- **Engagement through provocation / hooks / ideas**
- **Integrates theory / practice / work / learning in real-time**
- **Integrated learning, knowledge creation and knowledge sharing**

Key Characteristics & Design Principles Continuum

"First Generation"	vs.	"Second Generation"
- Technology driven	⟷	- Pedagogy driven
- Linear-sequential logic (i.e. organized)	⟷	- Holographic-fractal; self-organizing
- Instructor-in-control	⟷	- Learner-in-control
- Evaluation based on content memorization, repetitive practice and "passing the test"	⟷	- Evaluation based on self-assessment, reflective practice and successful application
- Engagement through visual animation	⟷	- Engagement through provocation / hooks / ideas
- Separates theory and practice	⟷	- Integrates theory / practice / work / learning in real-time
- Separate systems for learning and knowledge capture / dissemination	⟷	- Integrated learning, knowledge creation and knowledge sharing

Key Characteristics & Design Principles: Example

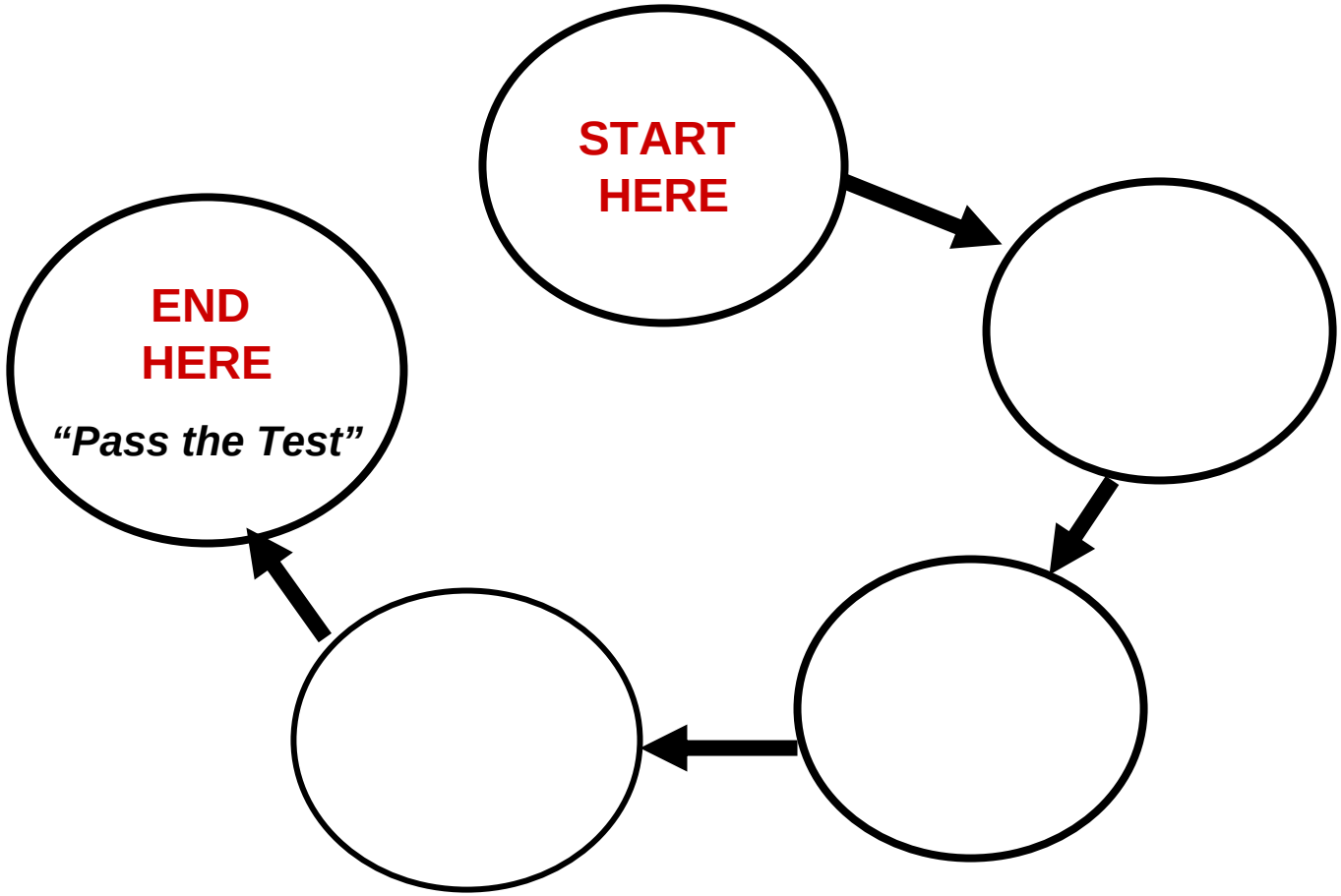
“First Generation”	vs.	“Second Generation”
- Technology driven		- Pedagogy driven
- Linear-sequential logic (i.e. organized)		- Holographic-fractal; self-organizing
- Instructor-in-control		- Learner-in-control
- Evaluation based on content memorization, repetitive practice and “passing the test”		- Evaluation based on self-assessment, reflective practice and successful application
- Engagement through visual animation		- Engagement through provocation / hooks / ideas
- Separates theory and practice		- Integrates theory / practice / work / learning in real-time
- Separate systems for learning and knowledge capture / dissemination		- Integrated learning, knowledge creation and knowledge sharing

A pedagogy-driven approach

Some important pedagogical drivers:

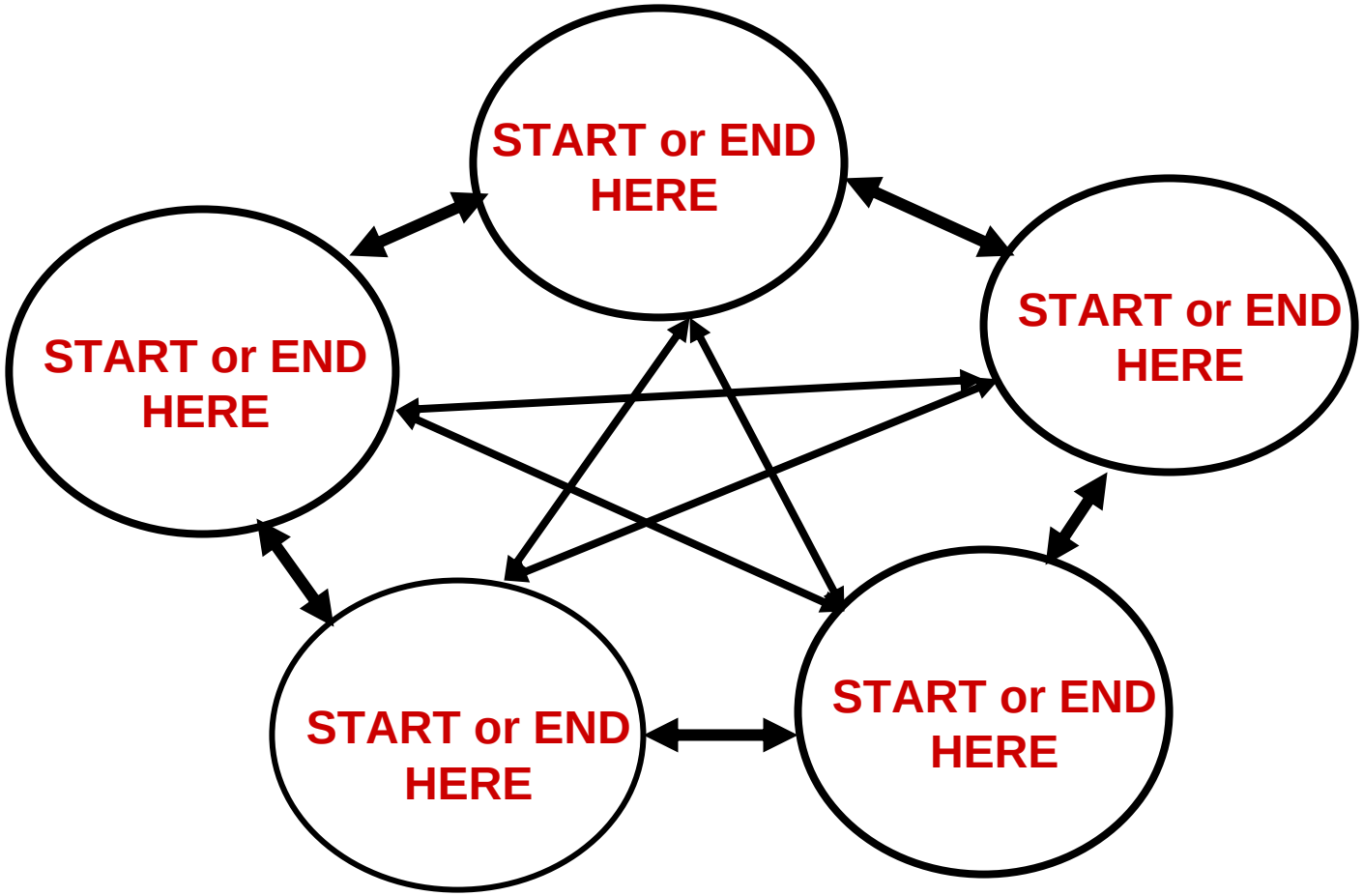
- *Learning styles* – people learn in different ways …
- The importance of *informal learning* …
- The importance of *provoking new insights to open up possibilities* …
- The need for *accelerated learning and performance improvement* …

Instructor-in-Control, *Compliance* Learning



There is *one logical, sequential path* through this content.

Learner-in-Control, *Empowered* Learning

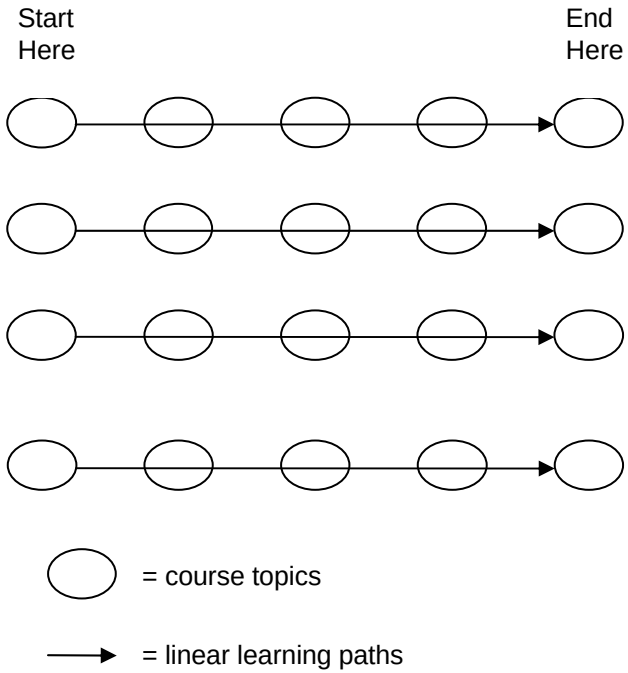


There are *over one hundred paths* through this content !

Typical “First” and “Second Generation” Learning Paths

“First Generation” Design

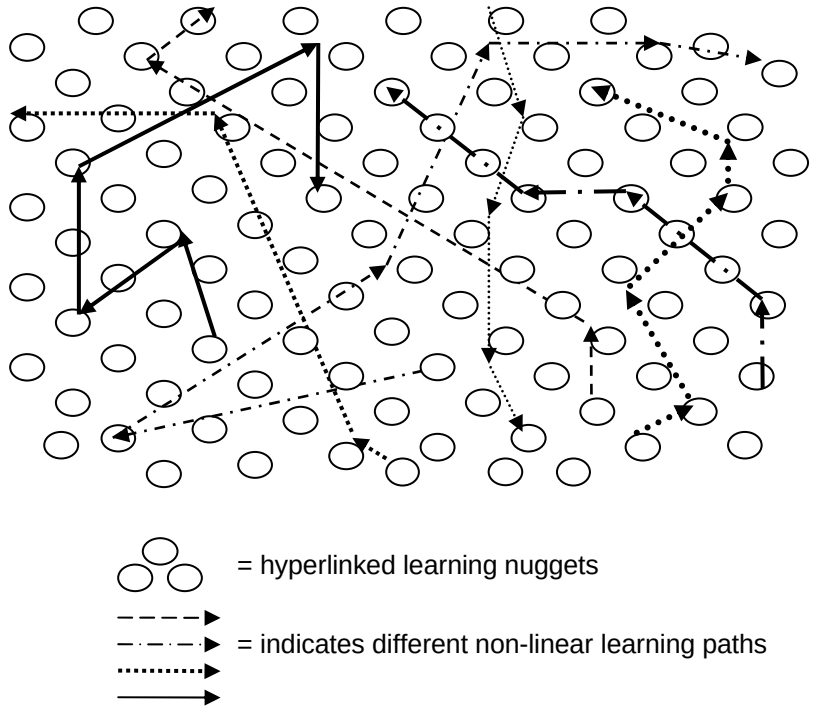
The Traditional Course Model



With this approach, there tends to be *one* sequential learning path with a predetermined start-end that has been pre-determined by the system.

“Second Generation” Design

The Self-Organizing Ecology Model



With this approach, there are *hundreds* of non-linear learning paths – learners can start and end anywhere, according to their personal learning needs.

Creativity & Innovation

- Flexible thinking in practice
- How learning thrives on disruption
- Framing, reframing, and the dynamics of change
- Adopting the perspectives of key stakeholders
- Using the rules of one situation to reinvent another
- Developing new products and services
- Using powerful metaphors for creative breakthroughs

Leadership In Action

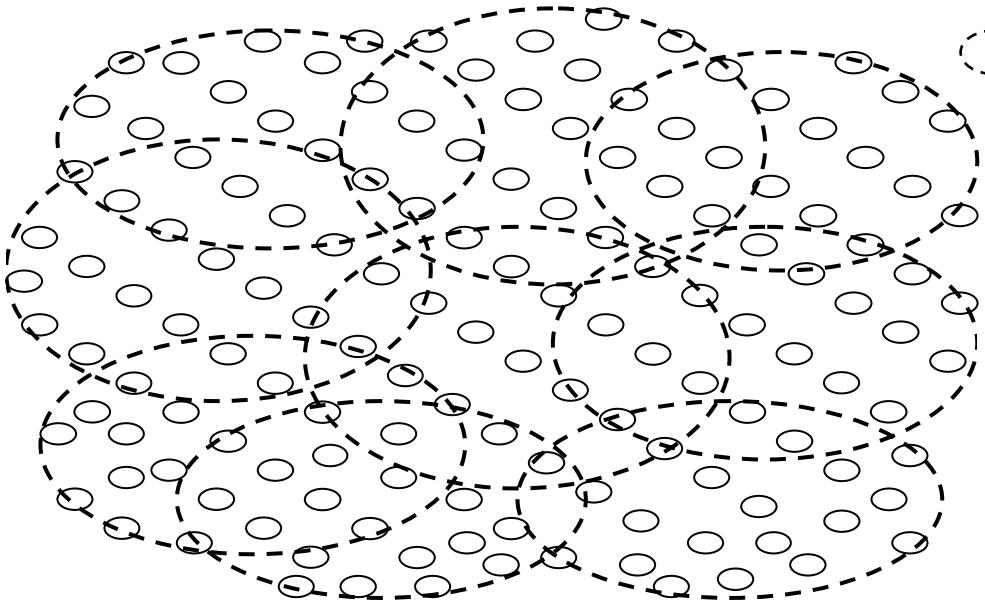
- The Basics: Leadership in action
- Balancing influence and control
- Cultivating trust
- Engaging people around vision and mission
- Understanding the ripple effect of words and actions
- Leadership in crisis situations

= granular learning nugget

= Sub-ecology

Continuous Improvement

- Use problems as opportunities
- Promote quality and continuous learning
- Create "stretch" benchmarks
- Anticipate and deal with "corporate earthquakes"
- Challenge conventional wisdom
- Use experiments to promote learning and change
- Use small changes too create large effects
- Create a learning culture



Building an Effective Team

- The Basics of building an effective team
- Establishing team ground rules
- Being an effective team leader
- Being an effective team member
- Balancing team and individual rewards
- Using teambuilding exercises that make the team a team

Overcoming Barriers to Change

- Common barriers to change
- Understanding and dealing with resistance
- Mobilizing the movable middle
- Picking your battles
- Creating focus and a sense of urgency
- Helping others deal with ambiguity
- Finding the right pace of change

Delegating Effectively

- The Basics: Six steps to effective delegation
- Overcoming your own barriers to delegating
- Recognizing when delegating will not work
- The art of creating ownership
- Being an effective delegate
- Delegating to your boss
- Knowing when and how to step in

Note: The allocation of titles to specific sub-ecologies in the above illustration is somewhat arbitrary since any single item can be used in more than one place simultaneously. (A three-dimensional diagram is needed to illustrate this.) For example, the title “Use small changes to create large effects” has been shown in the Continuous Improvement sub-ecology. However, this item can also be accessed from any of the other sub-ecologies (e.g. Leadership in Action, Teamwork; Creativity & Innovation) as well. The same flexibility is true for the majority of titles listed above, and all learning nuggets within the system.

A “Troublesome” Paradigm ...

Comment from an e-learning expert:

“The model of *non-compliant instruction says that the content is not in control of the instructor* … The technology allows for learner-control selection of content and learner-control assessment of whether I’ve learned or not. *And that, quite frankly, is a troublesome paradigm for a lot of e-learning people* …”

NewMindsets: A demonstration of a "second generation" system illustrating the key characteristics and free-flow nature of the learning experience...

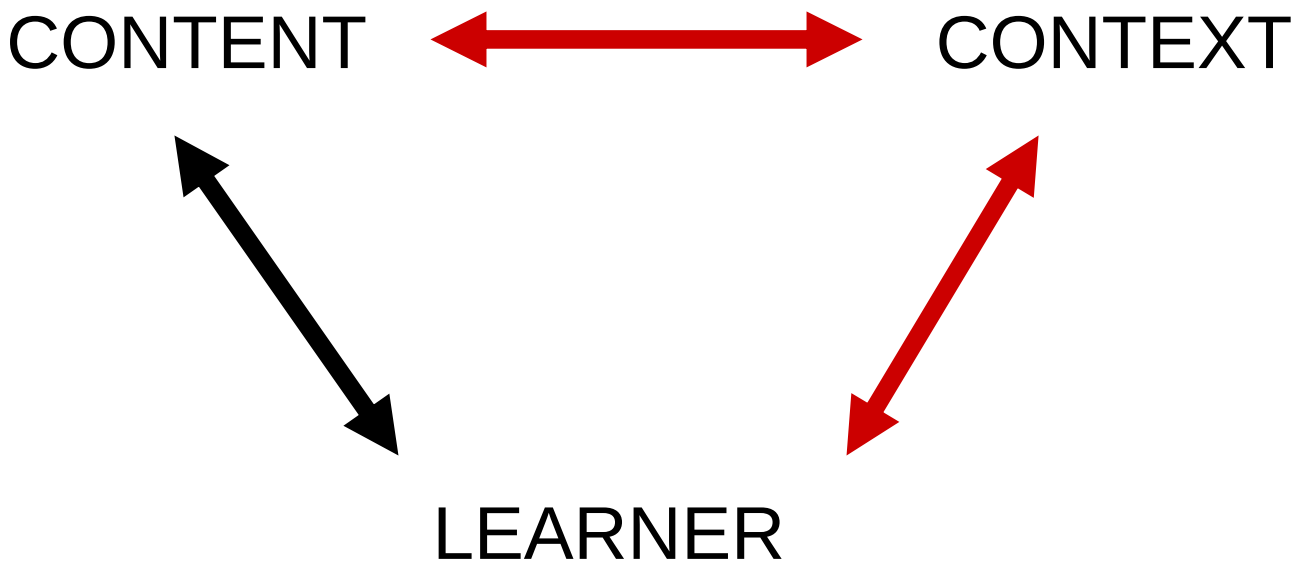
Recap: “Second Generation” e-learning offers *self-organizing* learning

Every learner takes ownership for his or her own learning …

He or she can cover the content lessons that are relevant where learning is driven by personal interest, development needs, or job problems …

Every lesson tightly integrates theory and practice encouraging learners to apply the lessons to daily issues or problems and, therefore, *empowering highly personalized learning …*

Key Point # 2 : The “Learning Triangle” and its importance for soft-skills development



“Learning Triangle” Interactivity

(Adams and Morgan – article in progress)

Hard-skills / Soft-skills

- The "*first generation*" of e-learning has worked for developing *technical* hard-skills (e.g. for using software).

- ***Developing soft-skills (e.g. leading, flexible thinking, etc.) requires a "second generation" approach …***

Is *your* primary goal to support:

- [] Hard-skills ?
- [] Soft-skills ?
- [] Hard-skills & Soft-skills ?
- [] Other …

For soft-skills, think “second generation” e-learning ...

“First Generation”

Ideal for:

- Hard-skill development
- *Routinized learning for tasks where conformance is needed* e.g. following a safety procedure, installing a piece of software, procedures where deviation can be illegal or lethal
- Memory-based learning / preparing to pass information-based tests, developing habits

“Second Generation”

Ideal for:

- Soft-skill development
- Personal, *reflective learning where new approaches are needed* e.g. to do one’s job more effectively, engage in critical thinking, cope with ambiguity, leadership development
- Innovation and performance-based learning, addressing complex issues

Key Point # 3: "Second generation" e-learning in practice

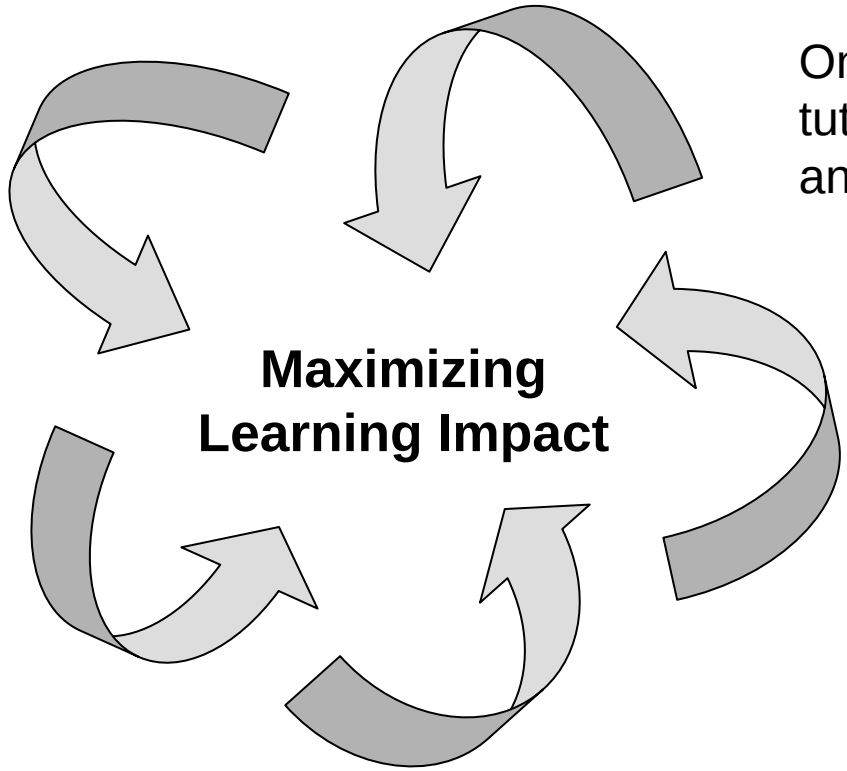
- We found that simply making e-learning available has minimum effect.

- To maximize learning impact, a *"tight-loose" framework* is needed ...

"*BLENDING*" *is essential !*

Face-to-face discussions and dialogue …

Online and offline tutoring, coaching and mentoring …



Synchronous communication technologies …

Asynchronous communication technologies …

Interactive online content that engages self-empowered learning

"Tight-Loose" Blending

- Structuring a *tight* framework of expectations up front is required to motivate ownership and accountability for learning …

- As the value of learning gets internalized, the framework can become more *loose* since learners will likely, though *not* necessarily, use the online system autonomously to sustain continuous learning and self-improvement – *making empowered learning a reality and positive force for change*.

"Four-Courses-in-One" Blending Model *

This is a robust blending strategy using e-learning to support:

- *Classroom* Learning
- *Personal Reflective* Learning
- *Team* Learning, and
- *Project-based* Action-Learning

… simultaneously.

* Schulich School of Business won Brandon-hall.com Excellence in E-Learning Best Practice (2002)

Classroom Learning

- Pre-work assignments using online materials where learners must bring evidence of their work
- Online system accessed “live” in class and strongly supported by the instructor
- Post-work assignments using online materials requiring learners to submit online work for formal or informal assessment

Personal Reflective Learning

- Self-directed learning assignment requiring learners to set a personal learning goal and pursue it. Work is done completely independently.

Here are a couple of examples:

a) Everyone writes a 2 page personal case about a current issue or problem. As the course proceeds, each person reflects on how the materials being covered relate to this personal case. Reflections are recorded in a personal online notebook using worksheets and job supports that prompt reflective learning.

b) Each learner completes a competence self-assessment as a focus for personal learning and self-development.

Team Learning

- Learning Teams are created and mandated to “learn together” as they tackle a team project that is too big to do alone, and insufficient time is available to do the project face-to-face.
- Diversity and resource-constraints are critical factors.
- Teams share ideas using a shared online notebook, and other collaborative technologies.
- Results are assessed e.g. class presentation, project paper or report is submitted

Project-based Action-Learning

- An individual or team project requiring learning gets applied to “real” situations in a safe and conscientious manner

Here are a few examples:

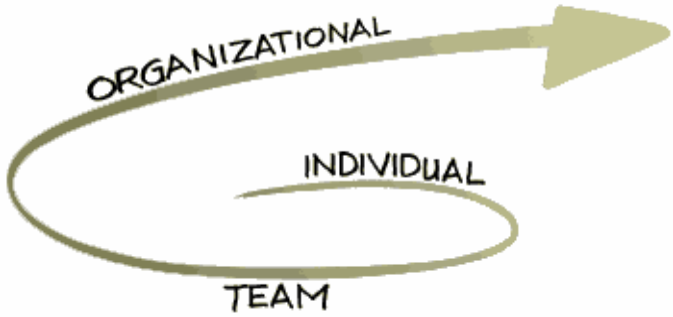
- Individuals are challenged to “make a leadership difference” on a job-related issue or problem
- Learning Teams are challenged to find a leverage point to improve business sustainability in a “real” company
- Learning Teams are invited to consult on real business problems and issues as part of an eight-month program where there are ***no*** face-to-face classes

… simultaneously …

- The same online system is used to support a wide range of needs by tightly integrating learning with personal competence development, projects and job-related issues.
- The online notebook becomes a personal record of everything that is learned.
- The *more people see the value of the online system, it is hoped the more they will use it for independent learning* when the program is over – i.e. the essence of the tight-loose model for empowering continuous learning.

PROMOTE INDIVIDUAL, TEAM, AND ORGANIZATIONAL LEARNING

Individual or team learning is not enough. There has to be an organizational dimension that distributes learning throughout an enterprise.



… Some of the learning outcomes …

My Next Challenge

… 350 – 400 undergrads !

Can self-organizing, empowered learning work in the undergrad context?

- [] Yes
- [] No
- [] Don’t know …

Concluding thoughts about ...

- ***Pedagogy:*** A “first generation” approach to e-learning design and implementation has worked for technical training. But a “second generation” design and implementation, founded on completely different assumptions about learners and learning, is needed for developing soft-skills.

- ***Technology:*** The development and potential impact of “second generation” e-learning invites a re-thinking of technology standards that seem to be locking the e-learning industry into a “first generation” mindset and locking out required pedagogical exploration and innovation.

Comments …

Questions ?

For more information, please contact me at:
jadams@schulich.yorku.ca

A few additional references…

- **Adams, J. and G. Morgan. "Second Generation" E-Learning: Characteristics and Design Principles for Supporting Management Soft-Skills Development."** ***International Journal on E-Learning*****, (forthcoming)**
  http://www.newmindsets.com/resources/2ndGenELearning.pdf

- **Adams, J. "Thinking about learning as a bonusable objective …"** ***Learning Circuits.*** **ASTD. 7(8), Sep 2005. [Online]. Available:**
  http://www.learningcircuits.org/2005/sep2005/adams.htm

- **Adams, J. "No time for collaboration? Consider using an I-C-E-C-A-P model."** ***Learning Circuits*****. ASTD. 2005.[Online]. Available:**
  http://www.learningcircuits.org/2005/aug2005/adams.htm

- **Adams, J. "Today's challenge: Slowing down, to get results up to speed."** ***Learning Circuits*****. ASTD. 7(6), July 2005. [Online]. Available:**
  http://www.learningcircuits.org/2005/jul2005/adams.htm

- **Tibbett & Britten Group 2003 Excellence in Practice Citation – "Using second generation e-learning to support top team development" [Online]. Available:** http://www.astd.org/NR/rdonlyres/A85F0977-3CD5-4527-BE3C-9A87A3748476/3770/TibbettBrittenGroup2003EIPEntry.pdf

- **Bradshaw, P. and J. Adams. "Using a 'Second Generation' e-Learning System at a Graduate and Executive Level: Supporting Profound Learning" in T. Werner (ed.),** ***Excellence in E-Learning 2002 Best Practices Report*****. brandon-hall, 2003.**

- **Adams, J. "E-Learning about E-Learning: The journey continues." in** ***Experience e-Learning: An Online Expedition - Report of the efmd e-Learning Group*****. Nov, 2002: 14-53. [Online]. Available:**
  http://www.efmd.org/html/Knowledge/publ_detail.asp?id=040929yuch&aid=041103kicm&tid=3