Integration of E-Learning 2.0 into Education and Training

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Recent Trends
• Information explosion
• Net Generation and iGeneration
• Web 2.0 and social media
• Learner-centered design
• Connectivism
• Personal learning environment
• Open learning

Everyone creates and publishes content


What Happens in an Internet Minute?

Dr. Steve C. Yuen, Integration of E-Learning 2.0 into Education and Training,
24th Modern Engineering & Technology Seminar 2012, Taipei, Taiwan, November 11-13, 2012

Net Generation
- Born after 1980
- Also called Y Generation or Digital Natives
- Highly networked, interactive, and social
- See technology as an essential part of their lives
- 1st generation to be producers of content, not just consumers
- Prefer multi-tasking and quick, non-linear access to information
- Visually-oriented
- Rely heavily on communications technologies to access information and to carry out social and professional interactions.

iGeneration
- Generation Z or iGeneration – after 1997
- iGeneration has no OFF switch
- Technology is a part of their DNA
- Represent the “individualized” nature of their media
- Early introduction to technology
- Text me, don’t call me. Prefer texting and social networking for communicating than talk face-to-face or on the phone
- Desire for immediacy
- Technology is not a tool, but a part of life
- Ability to use technology to create a vast array of content

Learner-Centered Design
- Puts the learner and his/her learning process in the center of every decision during design and delivery
- Caters for diverse learner needs and characteristics
- Offers openness to experience and personal growth, co-creation of knowledge, and personal regard for each individual
- Facilitates learners in becoming active, self-directed and self-responsible participants in the learning process, in which peers and the instructor serve as facilitators, motivators and personal resources

Personal Learning Environment
- Personalization of learning
- Learner-centered technologies
- Learners develop, control, and organize their own PLE lifelong learning
- Collaborative, informal, and on-demand learning

Connectivism
- Knowledge is distributed
- Knowledge is interconnected
- Knowledge is personal
- Learning is a process of connecting specialized nodes or information sources

“...a form of knowledge and a pedagogy based on the idea that knowledge is distributed across a network of connections and that learning consists of the ability to construct and traverse those networks.” — George Siemens

Sources: Jayson, S.  Generation has no off switch. USA Today. Feb 10, 2010
Nizam. Rise Of The Generation: Don’t Call Me, Text Me. Feb 8, 2010
Emerging technologies and the future of post-secondary education. www.slideshare.net/deevin/
Today, our schools must prepare all students for college and careers - and do far more to personalize instruction and employ the smart use of technology.  
- Arne Duncan, United States Secretary of Education

An Example of PLE

Source: http://edtechpost.wikispaces.com/PLE+Diagrams

Open Learning Movements

- OpenCourseWar e Consortium
- MOOC
- edX
- Khan Academy
- OpenStudy
- OER Glue
- CK-12
- Flat World Knowledge
- Curriki

E-Learning 1.0

- Includes all forms of electronically supported or enhanced teaching and learning
- The early promise of e-learning has not been fully realized … (O’Hara, 2006; Downs, 2005)
- Learning content is provided by courseware authors, structured into courses by learning management system (LMS), and consumed by students
- Employs the use of LMS that is often cumbersome and expensive – and which tends to be structured around courses, timetables, and testing
- Often driven by needs of the institution rather than the individual learner
- Traditional e-learning is not flexible and is not integrated with the Web
E-Learning 2.0

- The second generation of e-learning
- Takes a “small pieces, loosely joined” approach that combines the use of discrete but complementary Web 2.0 tools to support the creation of ad-hoc learning communities
- Uses socially based software: collaborative, iterative, inclusive (discussion) = knowledge building and sharing
- Includes: blogs, Wikis, podcasts, social tagging and forums

E-Learning 2.0 Features

- Facilitation of content authoring
- Knowledge and information sharing
- Diversity of learning content and media
- Ease of collaborative learning


E-Learning 2.0 environments equip learners with a range of technologies which allow users to contribute content, connect, communicate, and collaborate with other learners.

From E-learning1.0 to E-learning 2.0

From distribution...

...to reflection and collaboration

E-Learning 2.0

Is essentially about:
- Social/Collaborative/Network learning environments
- User-generated content
- Aggregating (RSS) & tagging
- Knowledge sharing
- Personal learning environments
- Collective intelligence (Wisdom of the Crowds)
- Using a network of diverse technologies
- Creativity and innovation

http://www.slideshare.net/zaid/elearning-talk

Learning Tools for E-Learning 2.0
- Mostly free
- Wikis
- Blogs
- Learning Activity Management System
- Virtual classrooms
- Podcasts
- RSS
- Mashups
- Content authoring
- Social bookmarking
- Social learning networks
- Personal learning spaces
- Virtual social worlds
- Open learning content

E-Learning 2.0 in Training
- A study by Guild Research (2008)
  - 40% of respondents indicate they are making some use of e-learning 2.0 approaches
  - 70% of respondents plan to apply more e-learning 2.0 approaches over the next 12 months
  - younger workers demand e-learning 2.0 approaches to performance support


Guild members currently using e-Learning 2.0 are reporting that it works

Source: The E-Learning Guild Research.
My E-Learning 2.0 Study

- Involved the design, development, and implemented of two online courses based on e-learning 2.0 concepts
- Investigated the students’ opinions, experiences, and interactions in online courses based on an e-learning 2.0 instructional approach
- Examined students’ preferred Web 2.0 tools in online courses

Collective Intelligence

- Knowledge is distributed
- Knowledge is interconnected
- Knowledge is personal
- Learning is a process of connecting specialized nodes and information sources

- Steven Downes

E-Learning 2.0 Course Design

- Private social networking site
- Class blog
- Students’ blogfolios
- Online forums and presentations
- Podcast channel
- Social bookmarking
- Wiki
- YouTube videos
- Mashup
- Tweets

Students Opinions on E-Learning 2.0 Courses

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage in 5-point Likert scale</th>
<th>Mean &amp; SD (n=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>E-learning 2.0 instructional approach encourages students to express individuality and creativity.</td>
<td>4 0 0 40 50 60 6.4 0.9</td>
</tr>
<tr>
<td>2</td>
<td>E-learning 2.0 instructional approach encourages hands-on, student-centered activities.</td>
<td>4 0 0 35 55 65 4.6 0.9</td>
</tr>
<tr>
<td>3</td>
<td>E-learning 2.0 instructional approach promotes collaborative learning opportunities.</td>
<td>4 0 4 24 68 4.1 0.9</td>
</tr>
<tr>
<td>4</td>
<td>E-learning 2.0 instructional approach promotes knowledge sharing.</td>
<td>4 0 0 25 55 65 4.6 0.9</td>
</tr>
<tr>
<td>5</td>
<td>E-learning 2.0 instructional approach promotes class communication.</td>
<td>0 5 0 25 60 65 4.4 0.9</td>
</tr>
<tr>
<td>6</td>
<td>E-learning 2.0 instructional approach facilitates group learning.</td>
<td>0 4 8 45 60 65 4.3 0.8</td>
</tr>
</tbody>
</table>
Students Opinions on E-Learning 2.0 Courses

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage of Students</th>
<th>Mean &amp; SD (n = 47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding &amp; instructional approach for human-computer interaction</td>
<td>4</td>
<td>4.6 &amp; 0.5</td>
</tr>
<tr>
<td>Efficacy and instructional approach for human-computer interaction</td>
<td>3</td>
<td>3.8 &amp; 0.7</td>
</tr>
<tr>
<td>Preferences in taking online courses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean = 4.6 Standard Deviation = 0.3

Usefulness of Web 2.0 Tools

<table>
<thead>
<tr>
<th>Web 2.0 Tool</th>
<th>Percentage of Students</th>
<th>Mean &amp; SD (n = 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>0</td>
<td>4.4 &amp; 0.6</td>
</tr>
<tr>
<td>Chat</td>
<td>0</td>
<td>4.4 &amp; 0.6</td>
</tr>
<tr>
<td>Class Blog</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>Class Social Network</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Forums</td>
<td>0</td>
<td>4.5 &amp; 0.6</td>
</tr>
<tr>
<td>Groups</td>
<td>0</td>
<td>4.5 &amp; 0.6</td>
</tr>
<tr>
<td>Podcasts</td>
<td>0</td>
<td>4.5 &amp; 0.6</td>
</tr>
<tr>
<td>Photos</td>
<td>0</td>
<td>4.5 &amp; 0.6</td>
</tr>
<tr>
<td>Fluid</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>Social Bookmarking</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Twitter</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>Videos</td>
<td>0</td>
<td>4.4 &amp; 0.6</td>
</tr>
<tr>
<td>Wikis</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
</tbody>
</table>

Mean = 4.6 Standard Deviation = 0.5

Overall Experience on the E-learning 2.0 Course

<table>
<thead>
<tr>
<th>User Interface</th>
<th>Poor</th>
<th>Average</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td>Design &amp; Layout</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Content</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>84</td>
</tr>
<tr>
<td>Reliability</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>Support</td>
<td>0</td>
<td>0</td>
<td>48</td>
<td>52</td>
</tr>
</tbody>
</table>

Mean = 4.6 Standard Deviation = 0.3

Connectedness Subscale of Classroom Community

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage of Students</th>
<th>Mean &amp; SD (n = 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>4.1 &amp; 0.7</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
<tr>
<td>13</td>
<td>0</td>
<td>4.2 &amp; 0.6</td>
</tr>
</tbody>
</table>

Mean = 4.1 Standard Deviation = 0.7
Learning Subscale of Classroom Community

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage in Original Language</th>
<th>Mean &amp; SD in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5 of 10 respondents</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>6 of 10 respondents</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>7 of 10 respondents</td>
<td>0.0</td>
</tr>
<tr>
<td>4</td>
<td>8 of 10 respondents</td>
<td>0.0</td>
</tr>
<tr>
<td>5</td>
<td>9 of 10 respondents</td>
<td>0.0</td>
</tr>
<tr>
<td>6</td>
<td>10 of 10 respondents</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Perception of Learner-to-Instructor Interaction

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5.0</td>
<td>1.6</td>
</tr>
<tr>
<td>5</td>
<td>5.0</td>
<td>1.4</td>
</tr>
<tr>
<td>6</td>
<td>5.4</td>
<td>0.9</td>
</tr>
<tr>
<td>7</td>
<td>5.8</td>
<td>1.7</td>
</tr>
<tr>
<td>8</td>
<td>6.5</td>
<td>0.0</td>
</tr>
<tr>
<td>9</td>
<td>6.2</td>
<td>1.3</td>
</tr>
<tr>
<td>10</td>
<td>5.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Overall</td>
<td>5.8</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Perception of Learner-to-Learner Interaction

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
</tr>
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<tbody>
<tr>
<td>11</td>
<td>5.6</td>
<td>1.7</td>
</tr>
<tr>
<td>12</td>
<td>6.2</td>
<td>1.2</td>
</tr>
<tr>
<td>13</td>
<td>5.9</td>
<td>1.3</td>
</tr>
<tr>
<td>14</td>
<td>6.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Overall</td>
<td>6.0</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Conclusion

• Students’ online course experience based on e-learning 2.0 concepts were very positive and encouraging
• Students preferred e-learning 2.0 environment because they could easily access course content, interact content with others, construct new knowledge, and collaborate with others to form a learning network
• Students could communicate with others and access knowledge in ways that encouraged creative and reflective practices that extended beyond traditional online learning
• Students had very positive and favorable feelings toward overall interaction, learner-to-instructor interaction, and learner-to-learner interaction

Final Thoughts

• Is not about further development nor about a new technology. Is a new model of learning or a new, separate, innovative variety of e-learning
• Describe a number of developments, trends and points of view, which require change from teaching to learning
• Learning = generating content + communicating with people (Learner driven, focused on group learning)
• Build on the metaphor of “participation” – learning is perceived as an interlinked, social process in which Web 2.0 tools are used to develop learning results through collaboration and communication
Final Thoughts

- Focus on **constructive** activities
  Allow learners to interact with content, to share their thoughts and comments with instructors and other learners, to gain from their learning experiences, and construct their own knowledge.
- Create **personal learning environments**
  Enable the participation and collaboration of learners in content creation, sharing, and interaction.
- The future of **LMS**

The End

Questions or Comments?

My Blog - http://stevetyuen.org

My Tweets - http://twitter.yuen.us