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The Truth about E-learning: Lessons Learnt for Architecture

Roisin Donnelly,

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Towards Truth...

“The best way to come to truth being to examine things as really they are, and not to conclude they are, as we fancy of ourselves, or have been taught by others to imagine.”

John Locke, An Essay Concerning Human Understanding
This presentation will introduce key ideas about designing e-learning experiences for students. It is organised around the following topics:

- Designing E-learning: Pedagogy and Practice
- Model of E-learning: Blended Learning
- Changing student and teacher roles: online tutoring
- Integrating Online Resources
- DIT Case Studies in the Built Environment:
  - WebCT Courses in Architecture
  - E-Portfolio Exploration
Not Using E-Learning effectively:

- Replicating existing courses on a computer
- Putting your training manuals in html
- Creating a multiple choice test that gives a score that says that you read something
Learning Requires...

- Emotion – how come?
- Exploration – what happened?
- Frustration – got to fix this
- Explanation – maybe that’s why
- Realisation – aha
- And above all, inspiring curiosity
Thinking about E-learning requires asking...

- Do I understand how my students learn?
- How do I facilitate my students reaching deeper levels of learning in my subject?
- How effective is e-learning in my subject area?
- What value will putting course material online bring to my students’ learning?
- Why am I putting material online?
The Importance of Pedagogy in E-Learning

- the importance of interactivity in the learning process
- the changing role of the teacher from sage to guide
- the need for knowledge management skills and for team working abilities, and
- the move towards resource-based rather than packaged learning.
Learning by doing

Through experience

Through dialogue

In the company of others

Socially situated

Key characteristics of learning

Constructivism

Laurillard

Mercer

Vygotsky

Papart

Kolb

Piaget

Dewey

Jarvis

Lave

Wenger

Communities of practice

Activity theory

Cognition

Conversational framework
Instructional Strategy: A Framework

- Encourage student reflection
- Encourage social interaction
- Address individual differences
- Provide hands-on activities
- Create a real-life context
- Motivate the student

- Cognitive Learning Theory
- Behavioural Learning Theory
- Constructive Learning Theory
- Social Learning Theory

Designing E-Learning: Pedagogy and Practice
Blended Solutions are Best?

- There are still classrooms and teachers... Motto: don’t throw anything out!

- Were there things you could do in a classroom that you couldn’t do with e-learning? What e-learning model were you using?
Blended - Definitions

- Mix instructional modalities: media (live virtual classroom, self-paced instruction, collaborative learning, instructor-led, streaming video audio, text, simulations) to accomplish an education goal.
- Instructor: on different campuses?
- To combine various pedagogical approaches (eg., constructivism, behaviourism, and cognitivism) to produce an optimal learning outcome with or without instructional technology.
- To combine any form of instructional technology (eg., videotape, CD-ROM, web-based training, film) with face-to-face instructor-led training.
- To mix or combine instructional technology with actual job tasks in order to create a harmonious effect of learning and working.
- Combine delivery methods: synch or asynch?

(Driscoll, 2002; Graham, Ure and Allen, 2003)
Blended can mean all of these!

The point is that blended learning means different things to different people, which illustrates is widely untapped potential.
A Blended Model

- Online pre-work
  - Classroom event
    - Online peer community
      - E-mentoring
        - Webliography

Extending the learning experience over time
Some examples of how to get started with blended learning are as follows:

- Put the assessment online
- Follow up with a community of practice - threaded discussions
- Make reference materials available
- Deliver pre-work online
- Provide online office hours
- Use mentoring/coaching as a tool
- Provide job aids
- Access experts
- Create a "lifeline"
- Maximise e-mail and messaging
Ingredients of the Blend

- **Synchronous physical formats**
  - Instructor led classrooms and lectures
  - Hands-on labs and workshops
  - Field trips

- **Synchronous online formats (live e-learning)**
  - E-discussions
  - Web seminars and broadcasts
  - Coaching

- **Self-paced asynchronous formats**
  - Documents and web pages
  - CBT modules
  - Simulations
  - Assessments/tests/surveys
  - Learning communities and discussions forums
Advantages

- Increased learning (better papers - more depth, higher scores)
- More effective pedagogy and interaction (depending on tutor!)
- Course access at one’s convenience and flexible completion (e.g. multiple ways to meet course outcomes)
- Reduction in physical class or space needs, commuting
- Increased opportunities for human interaction, communication and contact amongst students
- Introverts participate more
Disadvantages

- Procrastination: trouble managing time and requirements
- Problems with technology at the start (instructor tries to do too much)
- Can be overwhelming (too much work for tutor and students) or too novel
- Poor integration or planning
- Resistance to change
- Good ideas but lack time, money and support
- Confusion – learning not explicit enough
Blended Solutions are Best?

- E-learning allows for the creation of simulated environments that look like the real world
- Primary Processes
  - Real Projects/Problems
  - Socratic Mentoring
  - Goal-based Scenarios
  - Apprenticeships
Using Technology to Support Project and Problem-based Learning

Authentic Learning Activities

- Peer Interaction on tasks
- Socialising online (shared interests e.g. book club)
- Scaffolded tutor facilitation
- Formative peer feedback on reflective blogs

Constructivism

- Building Knowledge of Learning Issues
- Participation in discussion forums with guest experts
- Email and video conference contact

Learner Support

- Learner guides/e-handbooks
- Online Mentor support
- E-library
- Synchronous chat-guidance

Social Constructivism

Group Reflection and Feedback
The process continues...

- Problem/scenario
- Explicating thoughts and ideas, Brainstorming
- Grouping ideas
- Focusing/choosing the interest area
- Formulating learning task
- Knowledge acquisition
- Synthesising, Negotiating new knowledge
- Clarification, Comparing
- Assessment
  - Learning process
  - Problem solving
  - Group dynamics

Independent and supported studying

Communality, Group awareness, Tight interaction
- chat
- audio
- videoconference

Negotiating and outlining meanings, Knowledge constructing
- shared (visual) applications

Argumenting, Constructive discussion
- discussion forums
- comment tools

Information delivery, Publishing
- www
- materials
- documents

Synchronous collaboration

Asynchronous collaboration

Adapated from University of Tampere, Roisin Donnelly, 2005
Teacher’s Role

Anxiety: E-learning does not involve instructors

- Mentors are everywhere
- People are more used now to email and chat that ever
- Conversation has always been the main medium of instruction outside of experience
TUTOR CENTRED: Online

- Making statements
- Giving information
- Making suggestions
- Telling
- Instructing
- Proposing
- Talking
- Explaining
- Interrupting

PBL LEARNER CENTRED: Blended: Online and F2F

Starting point for Engagement:
reveal key questions to illuminate topic, clarifying, provoke ideas, continuous feedback,

Creating space for engagement:
asking open questions, provision of alternate perspectives, social and affective

Scaffolding: building on others comments, recapping

Motivating: acknowledging, accepting, listening, supporting

Closing: reflecting, evaluating

Continuum of Blended Tutor Communication Strategies
Integrating Resources

Resources
- Online
  - Cybrary: E-journals
  - Web Sites
  - CD-ROMs
  - CBT
- F2F
  - International Guest Experts

PBL Zone
- Online
  - Previous Participants Experiences
  - Books & Articles
  - Concept Mapping
  - Video Conferencing
  - Group Discussion Forums & Chat: Logical Inter-related Learning Activities
- F2F
  - PBL Group Tutorials

Supports
- Online
  - Reflective Journals/Blogs
- F2F
  - Tutor as Content Expert

Learning Thru Modeling
- Tutor as Content Expert

Learning by Practice
- PBL Group Tutorials

Self Directed Learning
- Concept Mapping
- Video Conferencing
- Group Discussion Forums & Chat: Logical Inter-related Learning Activities

Logical Inter-related Learning Activities

Previous Participants Experiences

Books & Articles

Cybrary: E-journals

International Guest Experts
### WebCT Courses in Architecture

**Number of lecturers/DIT staff who have attended WebCT training and have subsequently gone on to use WebCT with students**

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>No. who have attended training workshops</th>
<th>No. who have developed WebCT modules</th>
<th>% who have developed WebCT modules</th>
<th>Number of modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built Environment</td>
<td>44</td>
<td>22</td>
<td>50</td>
<td>33</td>
</tr>
</tbody>
</table>

- **FACULTY**: Built Environment
- **No. who have attended training workshops**: 44
- **No. who have developed WebCT modules**: 22
- **% who have developed WebCT modules**: 50
- **Number of modules**
  - Modules live: 33
  - Modules in development: 53
WebCT Courses in Architecture

Number of lecturers/DIT staff who have attended consultations sessions with LTT and have subsequently gone on to use WebCT with students

<table>
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<tr>
<th>FACULTY</th>
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<tbody>
<tr>
<td>Built Environment</td>
<td>19</td>
<td>13</td>
<td>68.4</td>
<td>20</td>
</tr>
</tbody>
</table>
WebCT Courses in Architecture

School of Architecture – Live WebCT Modules
- Architectural History Image Database
- FT101/1/2/3 Civilisation Studies
- FT101/1 Maths & Statistics
- FT102 /2 Surveying & Levelling

School of Architecture – In Development WebCT Modules
- FT101/2 Indoor Environmental Science
- DT102/1 Mechanics & Structures (not active)
- FT102/1 Studio Building Construction (not active)
- FT102/1 Studio: CAD (not active)
- FT102/1 Studio: Graphics
- FT102/1 Studio: Projects
- FT102/1/2/3 History of Technology
WebCT Courses in Architecture

Examples of note in Faculty of Built Environment
The Dept of Geomatics is using online learning extensively and lecturers there have developed a successful CPD course which has already been delivered to Ordnance Survey Ireland and also internationally.

Examples of note in School of Architecture
One lecturer has developed a significant image database composed of photos (mainly taken by himself) of structures of importance in architectural history. This resource is used specifically within FT101 Civilisation Studies but is also available generally to other interested DIT lecturers for use with their students in the School of Architecture.
An e-portfolio is an electronic format for learners to record their work, their **achievements** and their **goals**, to **reflect** on their learning, and to **share** and be supported in this. It enables learners to represent the information in different formats and to take it with them as they move into different aspects of their professions. The two main developers and users of e-portfolios are:

- **Students** - to present and reflect on work within courses or across programmes
- **Teachers** - to document and reflect on their classroom practice and enable comment by colleagues or others.
The intended outcomes of the project are to explore the potential of a web-based e-portfolio system in 2 schools in the Faculty of the Built Environment (Architecture & Construction). This will entail:

- conducting an impact analysis of e-portfolios internationally in supporting teaching, skills and capabilities development;
- identifying attitudes of Built Environment academics to the use of e-portfolios as an assessment mechanism; discovering students’ learning needs;
- exploring the potential uptake of the use of e-portfolios within specific courses in the Built Environment;
- investigating the potential integration of e-portfolios as a learning tool in specific courses in the Built Environment (teaching, learning and assessment, reflection, feedback, support and evaluation processes around individual needs);
- [setting up a project web site on WebCT to bring together the different elements of the project.]
References

