On-Line Learning in Water Education

Concepts, Tools, Experiences

and Lessons Learned

New Concepts And Tools For Education And Capacity Building To Achieve The MDG’s (UNESCO - IHE Session, 17th March)
Overview

1. What is e-learning?

2. Why on-line learning?

3. Rethinking learning and teaching

4. Online courses – UNESCO-IHE

5. Experiences and Lessons Learned
1. What is e-learning?

E-learning, sometimes referred to as computer-based training or online distance education, refers to structured, computer-enabled learning carried out by individuals or groups outside of a physical classroom, over the Internet or an internal network.

E-learning:

- can be an individual, group or class activity
- can be self-paced or instructor-led
- can be partime or fulltime
- can take place in the classroom, at home or at work
- is about accessing information as well as instruction
- is also about communication, collaboration and knowledge sharing between learners and teachers, and between learners themselves
E-Learning in Higher Education

- Gradually integrating the technology into a course - where appropriate - to create a blended approach:
- blending classroom-based approaches with independent and group-learning approaches
- blending face-to-face with online learning
- blending a mix of online learning solutions
- blending the best of the old with the best of the new

**Three ways of blending online with face-to-face**

1. Using the technology to support a traditional class
2. Integrating technology into a traditional class
   - information and reference material
   - online activities and exercises
   - online discussions
   - collaborative learning activities
3. Delivering a course completely online
<table>
<thead>
<tr>
<th>Innovation in educational delivery</th>
<th>Same time (synchronous)</th>
<th>Different time (Asynchronous)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same place</td>
<td>e.g. Classroom homework</td>
<td>e.g. Student’s + online learning</td>
</tr>
<tr>
<td>Different place</td>
<td>e.g. Video-conferencing learning</td>
<td>e.g. Online distance</td>
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</table>
Example 1

Water Policies, Law and Institutions module (Waternet and UNESCO-IHE) (April each year)

Duration 3 weeks (study load 3 weeks)

Subject
Question & Answer
Subject
Subject
Question & Answer
Concluding meeting

Local training at UNESCO-IHE, Dar ES-Salam and Harare (same time)

Three VC sessions to connect sites for lecture / Q&A sessions
Example 2

Online course on IRBM (2 times a year) (UNESCO-IHE Partnership of Water Education and Research)

Duration 4 months (study load 3 weeks)

Subject
Disc
Paper proposal
Test
Test
Paper

Registration & introduction
Internet-based e-learning, interaction & support

Download training material
Group discussions
Ask-Teacher
Email
Reflection on each others work
2. Why on-line learning?

Benefits of E-Learning

- Those for the learner
- Those for the academic and institution as a whole
Student benefits

- **Flexibility**
  Support can be made more flexible and different learning styles can be accommodated.

- **Access**
  No longer limited by time and location of courses available.

- **Communication**
  The importance of the social aspect of learning, the ability to develop learning communities.

- **Access to information**
  Internet information, together with the growing collections of e-journals and e-books, can be used to support e-learning.

- **Better link to daily work activities**

- **Enhanced learning .... ?**
  There is a growing body of evidence which suggests that e-learning can have a significant impact on the student learning experience.
Institutional benefits

- To enhance student learning;
- To increase market share, including reaching overseas markets;
- To improve access and widening participation;
- To support increased flexibility in learning as a key component in collaborative ventures with partner institutions on a regional, national or even international scale;
- To better organize training material and make exchange easier;
- To help reduce costs.......

3. Rethinking learning and teaching

**How are roles changing?**

The most popular use of Virtual Learning Environments (VLEs) is to deliver course handouts / information.

- no change in traditional roles of teacher and learner and the information transmission approach to teaching

Those involved in teaching using networked learning environments often share a common educational approach:

**The importance of:**
- collaborative learning,
- linking experience / practice and ideas from literature,
- engaging with the activity / task; and
- experiencing different tutoring and learning styles.
The roles of teachers in e-learning (Salmon, 2001)

1. Access and motivation
   - Setting up system and accessing
   - Welcoming and encouraging

2. Online socialisation
   - Sending and receiving messages
   - Familiarising and providing bridges between cultural, social and learning environments

3. Information exchange
   - Searching, personalising software
   - Facilitating tasks and supporting use of learning materials

4. Knowledge construction
   - Conferencing
   - Facilitating process

5. Development
   - Providing links outside closed conferences
   - Supporting, responding

- E-Moderating
- Technical support

amount of interactivity
Changing roles of students

- From passive receptors of hand-me-down knowledge to constructors of their own knowledge
- Students become complex problem-solvers rather than just memorizing of facts
- Students see topics from multiple perspectives
- Students refine their own questions and search for their own answers
- Students work as group members on more collaborative / cooperative assignments; group interaction significantly increased
- Increased multi-cultural awareness
- Emphasis on knowledge use rather than only observation of the teacher’s expert performance or just learning to pass the test.
UNESCO-IHE has made concerted efforts in the development of a distance learning approach to its educational programmes, conscious of its importance in maintaining the cutting-edge delivery modes for the 21st century.
Therefore, UNESCO-IHE has designed 8 high-quality online courses, which started from 2005 onwards.

- Wetlands Management
- Flood Modelling for Management
- Cleaner Production and the Water Cycle
- Water Transport and Distribution
- Public and Private Partnerships
- Water and Environmental Law and Policy
- Integrated Coastal Zone Management
- Integrated River Basin Management
### Announcement

<table>
<thead>
<tr>
<th>Topic</th>
<th>Start Date</th>
<th>End Date</th>
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<tr>
<td>Welcome to UNESCO-IHE i-Learning System</td>
<td>2003/12/1</td>
<td>2009/9/9</td>
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<tr>
<td>Welcome to the on-line IRBM course</td>
<td>2003/3/3</td>
<td>2005/8/30</td>
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<tr>
<td>'Module' or 'Course' ..... ?</td>
<td>2003/3/3</td>
<td>2005/8/30</td>
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<tr>
<td>End of Course 1</td>
<td>2003/3/14</td>
<td>2005/9/30</td>
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<tr>
<td>Start of Course 2 'The River System and Human Interferences'</td>
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<td>Tutor assignment Course 2</td>
<td>2005/3/17</td>
<td>2005/9/30</td>
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<tr>
<td>Start of Course 5 'Operational Management'</td>
<td>2005/5/9</td>
<td>2005/8/30</td>
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<td>Start of Course 6 'Analytical support for IRBM'</td>
<td>2005/5/23</td>
<td>2005/8/30</td>
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<tr>
<td>Start of Course 7 'Organisational and institutional framework'</td>
<td>2005/6/7</td>
<td>2005/8/30</td>
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<td>Start Discussion Assignment Course 7 - How to bridge the gap between actual and ideal?</td>
<td>2005/6/14</td>
<td>2005/8/30</td>
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<td>Online IRBM - The last 2 weeks !!!</td>
<td>2005/6/20</td>
<td>2005/8/30</td>
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### Course List

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<thead>
<tr>
<th>No.</th>
<th>Course Name</th>
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<th>End Date</th>
<th>Intro.</th>
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<tbody>
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<td>Introduction to the Online IRBM Training Course</td>
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<td>2</td>
<td>The River System and Human Interferences</td>
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<td>5</td>
<td>Operational Management of River Basins</td>
<td>2005/5/9</td>
<td>2005/8/30</td>
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<td>7</td>
<td>Organisational and Institutional Framework</td>
<td>2005/6/6</td>
<td>2005/8/30</td>
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<td>8</td>
<td>IRBM Case Study: Upper-Citarum Indonesia</td>
<td>2005/6/20</td>
<td>2005/8/30</td>
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<tr>
<td>10</td>
<td>IRBM paper assignment</td>
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5. Experiences and Lessons Learned

First results of IRBM online-course, March 2005 run

- 12 participants (full-distance learning)
- China, Indonesia, Vietnam, Ethiopia, Egypt and Tanzania

Evaluation by participants

- Very good and positive evaluation
- Material / assignments clear
- No (serious) problems with downloading
- Linking theory to daily work is very interesting
- Contacts with many different people
- More interesting than traditional learning
- But, sometimes problem finding time to work on module
Outcomes

• Transferring knowledge and experience on developing and managing on-line modules on different levels (short courses, MSc. Courses,…)

• Building a group of 21 online trainers and facilitators from different UNESCO-IHE partner institutes.

• Developing proposals for online courses in different disciplines:
  • Water quality management planning at the Water Resources University – Ha Noi-Vietnam
  • E-course on water supply and sanitation
  • Online Master Programme on IWRM
  • Online course on information systems for water management-HRI-Egypt
To organize an on-line course:

- Levels and scope of course
- Scope of e-learning process
- Levels of course organization
- Target group perspectives
- Levels of using ICT
- Levels of trainer-learners interaction
- Levels of using distance learning technology
- Ways of cooperation
- Using partnerships and networks
- Ways of funding
- Marketing strategy
- Top management support
Don’t Wait, Start developing your Own On-Line Courses!

Thanks For Your Attention