Striking a balance between electronic educational tools and live sessions in integrated coastal zone management

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Introduction
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Training programmes should

- embrace all Integrated Coastal Zone Management (ICZM) approaches to expose students to diverse options
- better respond to the specific needs of different types of coastal practitioners and policy makers

http://www.coastalwiki.org
Consequences for curricula

- Personal study at the centre of achievement
- Towards a more flexible education in our present world
  - designing of courses,
  - teamwork,
  - interdisciplinarity,
  - communication,
  - problem solving, and
  - self-directed learning

What place to give to field work and practicals?
Comparing "traditional" teaching to "electronic" provision
Knowledge

- Generation
- Individual experience

- Transfer
- Communication
- Management

Rational consensus
Dialogic pluralism
Teachers

- Professor
- Hierarchy

- Teams of professor(s)
- Tutors
- Mentor(s) and peers

Face to face tutorials

E-mails
Material

- Sound theoretical development, illustrated by examples
- Problem solving from experience provided by examples
- Learning any necessary principles occurs along the way

Recognised sources

Multiple information channels
Learning environment

- Classroom
- Professor lectures
- Laboratory
- Field work
- Excursions
- Tutorials

- Seminars
- Project
- Presentations, work terms
- Practicum in addition to lectures
- Chatrooms

Group learning
Subject centered

Self directed learning
Student centered
Presentation

- Chalk & talk
- Overheads
- Video in the class room

- Power Point
- TV
- Internet clips (YouTube...)
- Multimedia (DVDs...)
- Chatrooms

Human relations

Isolated bodies
What could be an ideal learning environment?
Main axiom: people come to know what is 'out there' by representing it in the mind

- The brain operates as a computer in working upon information given through the senses
  - Brain = software
  - Body = hardware
- The body is considered as a processor constituted in advance of ontogenic development
- Cultural control mechanisms are compared to computer software
Most cultural learning takes place through trial and error acquired through PRACTICE

In SOCIALLY STRUCTURED SITUATIONS which give some rules

The rules structure the learning activity but do not constitute the knowledge itself in whole or in part

The skilled student consults the world rather than representations (rules and beliefs)
Connectionism

- There is not one big machine able to process huge amounts of information but small units which interact
- Learning is changing the connections between these small and simple processors: strength of connections

*Upper theories are grounded in Cartesian ontology: the ghost in the machine*
Reality consists of objects and events as they are perceived or understood in human consciousness.

Not of anything independent of human consciousness.
Life experience as a basis to salient science

Phenomenological approach after Husserl

Idealisation
Abstract approach

Own experience of nature

Forgetting
origins

Mixing up real and abstract worlds

Relating to senses

REAL WORLD

ABSTRACT WORLD
But, what is so special with ecology?

- A systemic approach to education
  - A robust scientific background
  - Ecology is more than just a discipline
  - To combine knowledge from science, ethics, industry
  - A culture of “complexity”

- Understanding the social context
Teaching on-line

- Transfer
- Communication
- Management of knowledge
- Problem solving from experience provided by examples

organise seminars, project presentations, field visits and practicals in the lab at certain stages of the studies
Practical issues

- Individual response to students
  - Generic issues but have to be keyed in every time
  - Comments tailored to individuals
  - Precision in writing

- Expectation of instant availability
  - Negative sense of engagement from tutors

- Time management
  - Many students fail to meet deadlines
How may coherence be drawn from such a diverse range of disciplines?

**the key problem facing the educator of coastal managers:**

*lack of funding and time to get professionals from all sectors to train students in their particular field of work*
Teaching large groups

- Large lecture halls/ amphitheatres (300 / 650 students).
- Microphones, laser pointers and electronic interactive teaching tools provide a distraction, but if used correctly, can aid teaching.
- Popular modules to benefit from innovative teaching methods, lightening the workload of teaching staff and improving access to information for students through on-line documents.
- Discussion groups formed facilitating the learning process.
To develop an innovative common core of graduate skills and knowledge

To promote the understanding of the environmental significance of the coastal zone

To develop teaching methodologies for good management practice
  ◦ Assessment strategies

THROUGH AN INTERDISCIPLINARY APPROACH
ABILITIES, SKILLS & COMPETENCIES

- communication / presentation skills
- working with others / flexibility
- problem solving
- planning & time management / decision making
- fieldwork related skills
  - interpersonal + organisational skills
  - safety + monitoring / recording skills
CURRICULA (re) DEVELOPMENT

- Content of courses
  Knowledge is essential

- Skills to be embedded in curricula
  Importance of field and laboratory work

- To take employment opportunities into account

- Tele-learning and the need for an infrastructure
  - Collaboration with employers

Learning requires a practised ability to notice and to respond to salient aspects of the environment