Empowering human connected communities

Outline #0
1. What to do and why to do it?
2. How to do it?
3. Ongoing projects

Outline #1: What and why?
1. Human communities
   - Isolation → My own team in space and time
   - Empowerment
2. Aphorisms: teaching, learning, science, technology
3. Serendipity
4. Mass learning

Outline #2: How?
1. AGORA 2005
   - The Shared Desktop
2. Content is often there!
3. Conversational processes and enhanced presence
4. AGORA 2008 – 2012

Outline #3: Ongoing projects
- Sharing the ideas
- Human Discovery
  - (in science: chemistry)
  - (in science: ecology)
- Human Learning
  - (in education: formal and informal)
- Human Creativity
  - (in art: music)

Acknowledgments
- 1964-71: Pisa
- 1971-80 Amsterdam
- 1981-85 Pisa
- 1985-99 Milano
- 1999-2015 Montpellier
- 1985 Brussels

« isolated » in space-time: my professional life
Innovation is within us

- The best way to predict the future is to invent it.

Science: from chaos to cosmos

- All science is either physics or stamp collecting.
- Great Rutherford, physicist
- 1871, Nelson, New Zealand; 1937, Cambridge, England
- 1908 Nobel Prize in Chemistry
- All scientific processes move from stamp collecting to physics as it was the case in Biology

Collaborative innovation and pull economy

- John Seely Brown
- http://www.johnseelybrown.com/

Mass Learning: levels and objectives

Learning is real and development needs

- 105 papers is 45 journals reviewed
- 85 journals reviewed science literature

Serendipity in scientific discovery

- A "happy accident" or a pleasant surprise
- The accident of finding something good or useful but not specifically searching for it
- Persian fairy tale The Three Princes of Serendip, whose heroes were always making discoveries by accidents and sagacity, of things they were not in quest of.
- Serendip, an old name for Sri Lanka

The teacher as a champion

- The first principle of true teaching is that nothing can be taught. The teacher is not an instructor or taskmaster, he is a helper and guide. His business is to suggest and not to impose.
- Sri Aurobindo
- Calculus 1673, Pendlebury 1960
- in: "The Human Mind, 1910"
- (courtesy of my student Namrata Patel)

Learners do learn

- The greatest sign of success for a teacher is to be able to say, "The children are now working as if I did not exist."»
- Maria Montessori
- Chiaravalle, Ancona, Italy, 1870; Noordwijk aan Zee, the Netherlands, 1952

Empowering human communities

- Educaçáo
- LIRMM: University of Montpellier & CNRS, France
- Stefano A. Cerri
- Di Castri, 2003: a champion in presence
- Noelle, Venezia, 1930 - Montpellier, 2005
- Francesco Di Castri

Local empowerment of isolated communities is enabled by bidirectional access to information with a champion playing a catalytic role.
The right questions (from Tonneau et al)

- Who are the actors asking for the learning system?
- Why do they need/want to change? What is the main issue at stake?
- What are the changes desired by the actors? Do they have a project?

The same as Di Castri’s empowerment

The answers

- Different approaches:
  - Traditional, digital and/or society building, community learning, project based learning...
  - Main issue: guarantee that the actors are able to develop the appropriate learning for their needs.
  - Not the methods and approaches that are new, but the situations the actors are faced with.
  - Important to enable them to build tools and understanding that will enable them to cope in these situations.
  - Building an awareness of the construction of a learning society in which knowledge creation and sharing are central elements.

Outline #2: How?

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... and the sources?

- Champions know where sources are
- Champions know how to transform them
- Champions interact
- Champions motivate
- Champions help
- Champions suggest
- Champions look from behind the scene

Sources are on the web!

Sources are on the web!

Di Castri, 2003, EJENVIE: a champion in presence
Sources are on the web!

Freely available Learning Resources (courtesy of Beverly Woolf)

Universal access to education. Creative Common

Examples:

40,000 K-12 resources: Curriki for teachers, learners - 40,000 modules available in Curriki, a repository and collaborative platform that breaks down larger collections, e.g., textbooks and courses, into modules.

20,000 modules available in Connexions, a repository and collaborative platform that breaks down larger collections, e.g., textbooks and courses, into modules.

Universal access to education

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More Examples

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• Who else is facing a similar problem?
• Where can I find what I need?
• Has anyone solved a related problem?

Find me the person who can really help me now.

AGORA: essential functionalities

Cloud architecture facilitating security and ubiquity: lightweight client

AGORA: model + software services

AGORA (2008) - 4 layers of services

View: holistic analysis, co-adaptation, motivation

Model + software services

Ubiquity: lightweight client

Complementary approaches?

Why?

Motivation

Co-adaptation (nice example of failures in services)

Holistic views

Advanced Learning Technologies

Mashup

Eisenstadt’s contribution

Shutup or Learn


Eileen W. J. O’Shea’s contribution

O’Shea’s (2007). « In Advanced Learning Technologies » in Shutup or Learn

Clancey’s approach

Holistic Towards the Learning GRID: advances in Human Computing


of Educational Technology 30, P.

IEEE International Conference on Advanced Learning Technologies

ILes Graves, and S. Salerno, Eds. Amsterdam, NL: IOS Press, pp. 8-16.


AGORA (2008) : 4 layers of services

Scanning the horizon - relevant research DUE

- Agents, Groups, Organisations, Resources, Activities
- Ubiquitous Collaborative Space (UCS)
- Awareness and Immanence
- The Grid Shared Desktop service
- Lightweight client
- Cloud architecture
- ~ 10^10 users, multiple sites (Montpellier, Pisa, Brasilia)

Immanence

Empowering human communities

9/11/07 17:21

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AGORA 2012

- Fundamental interaction protocols:
  - Delegation
  - Habilitation
  - Implication
  - Cooptation

- From stamp collecting to physics?
  - Primitives representing human social computation