Universal and Ubiquitous Learning in an ICT Society for Enhancing the Right to Learn

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Outcomes from my research on a large class teaching in University

- Tangible products
  - Textbook
  - Instructional materials for team learning
  - A system compatible both to computer and mobile phone
- Knowledge for instruction
  - Iconic representations or figures for describing instructional events
  - A set of propositions = about 70 propositions for one lesson

Problems We Face Now

- A great number of students come to higher education
- Large classes in higher education
- Limited facilities and poor equipment
- Rapid technology development and constant technology divides
- We need
  - To realize autonomous learning for enhancing the Right to Learn
  - To mobilize human resources through conventional and inexpensive media such as printed materials, textbook, mobile phones and ordinary websites

How can we improve universal education through ubiquitous ICT?

- Should we improve learners’ external conditions at first?
  - or
- Should we improve learners’ internal conditions at first?
- Self-learning, autonomous practices and devoted occupation are always of our traditional and cultural heritage.

Computerizing Education vs. Humanizing ICT

Images of e-Learning

Laptop computers
Desk-top Computers

e-Network
INTERNET

Mainframe and Network
Management and instruction
ICT for enhancing human rights
Development of ICT
Citizens students children

Specialists
Personal Computer
Citizens students children
ub-learning in daily life
How can we design, evaluate and manage ubiquitous learning?

Ubiquitous ICT

How can we design, evaluate and manage ubiquitous learning?

Our society is characterized by diversities of learners, contents and needs.

Web sites and recent digital TV programs can be accessed through ubiquitous devices such as mobile phones and PDAs.

How can we design and evaluate such ubiquitous learning?

How can we organize and manage such diversified learning?

Ubiquitous learning, u-learning

- A variety of media for learning
  - e-learning including web learning
  - m-learning = mobile learning
  - t-learning = television learning
  - printed material learning

- Different styles of instruction
  - Lecturing in a large class
  - Team learning/group learning
  - Personal learning/individual learning

Lecturing

- Students make eye contact and enjoy communication each other, but poor visible outcomes from this learning.
Students surround their works without eye contact and produce outcomes more effectively.

36 teams are presenting their works to other teams within 6 groups of 6 teams of 6-7 students.

Personal learning

Expected outcomes from students

- Tangible outcomes
  - Intermediate presentation by teams
  - Final personal report of more than 10 pages

- Intangible outcomes
  - Communication skills
  - Presentation skills
  - Competence for report writing
  - Competence for team working
Hypothesis: If we succeed to arrange learners' internal conditions successfully, they can overcome inconveniences of external conditions and study on their own responsibility.

MACETO model

**Hypothesis** Experiential knowledge can be described in a set of iconic representations and propositions

**Conclusions**

- **Hypothesis generation approach**
- **Hypothesis 1**: If we succeed to arrange learners’ internal conditions successfully, they can overcome inconveniences of external conditions and study autonomously on their own responsibility.
- **Hypothesis 2**: Experiential knowledge can be described in a set of iconic representations and/or propositions