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?

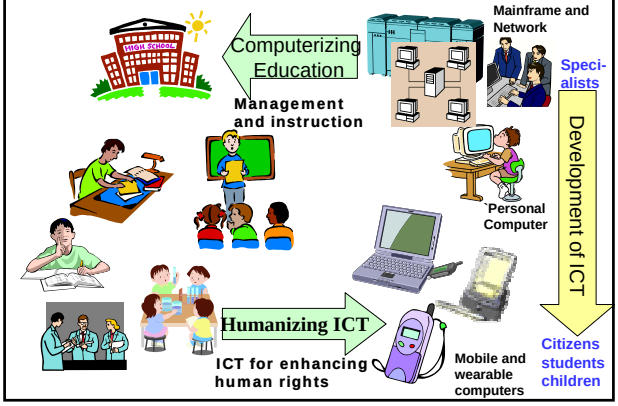
- Should we improve learners' external conditions at first?

or

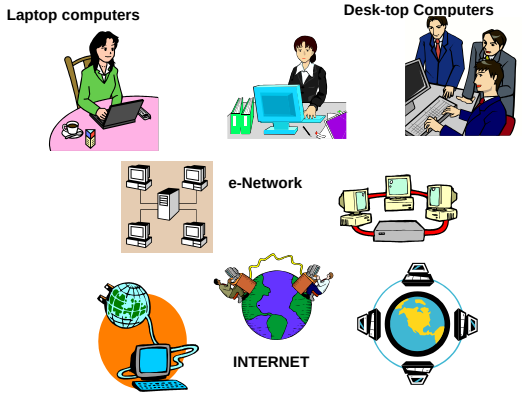
- Should we improve learners' internal conditions at first?

- Self-learning, autonomous practices and devoted occupation are always of our traditional and cultural heritage.

Computerizing Education vs. Humanizing ICT

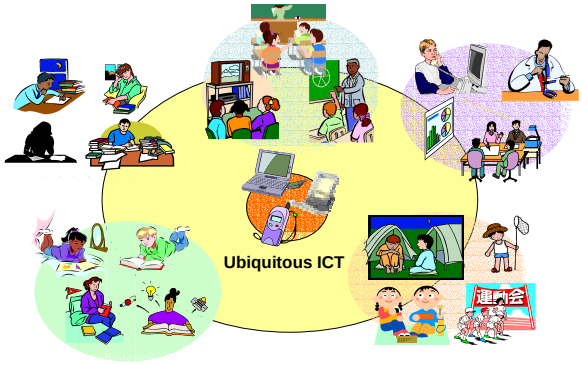


Images of e-Learning



u-learning in daily life

How can we design, evaluate and manage ubiquitous learning?



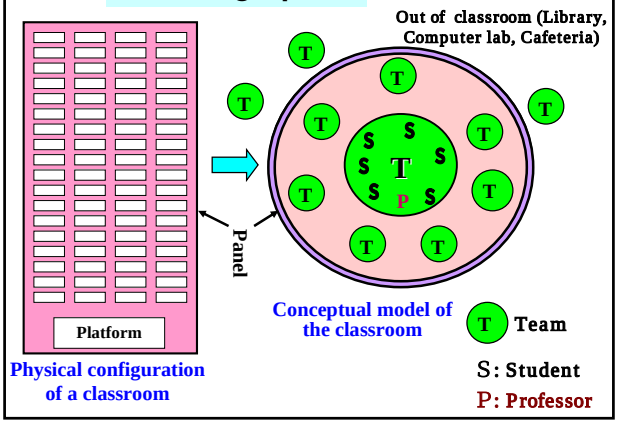
Powerful Computing for managing diversified learning

- 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?

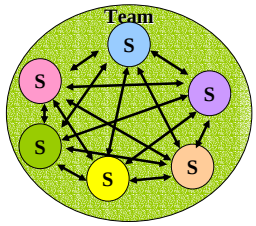
Ubiquitous learning, u-learning

- 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

Learning Space

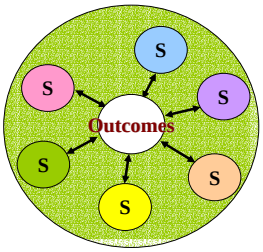


Communication-oriented team learning



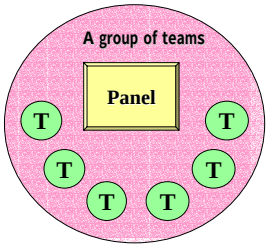
- Students make eye contact and enjoy communication each other, but poor visible outcomes from this learning.

Outcome-oriented team learning



- Students surround their works without eye contact and produce outcomes more effectively.

Team presentation in each group



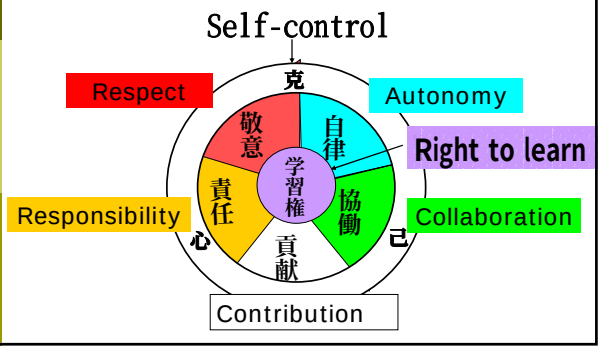
36 teams are presenting their works to other teams within 6 groups of 6 teams of 6-7 students.

Personal learning

Exercise
Testing
Bulletin board
Instructional materials
Consultation
Report
Questionnaire
Timetable

Top-page on a desktop computer display

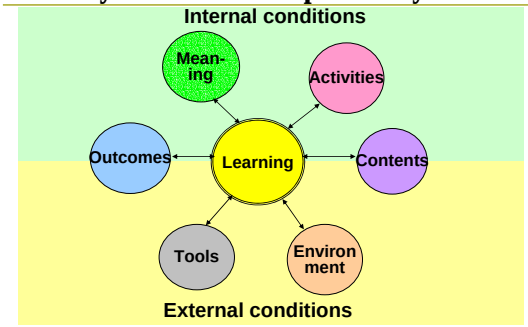
Logo for team learning



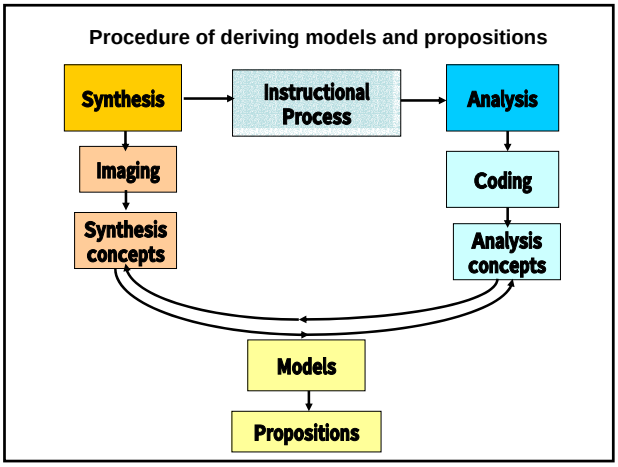
Expected outcomes from students

- 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

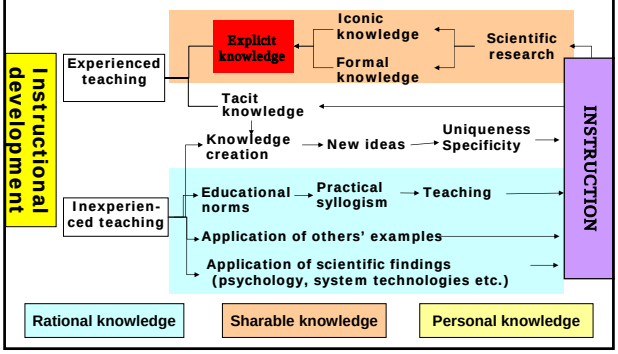
Hypothesis1: If we succeed to arrange learners' internal conditions successfully, they can overcome inconveniences of external conditions and study on their own responsibility.



MACETO model



Hypothesis2: Experiential knowledge can be described in a set of iconic representations and propositions



Conclusions

- **Hypothesis generation approach**
- **Hypothesis1:**

  If we succeed to arrange learners' internal conditions successfully, they can overcome inconveniences of external conditions and study autonomously on their own responsibility.
- **Hypothesis2:**

  Experiential knowledge can be described in a set of iconic representations and/or propositions