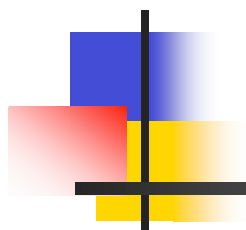


Comments on the research review on
ICT and Initial Teacher Training
subtopic «Teacher students' internship»



OECD

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TELECOM ParisTech
46, Rue Barrault
Paris 75013

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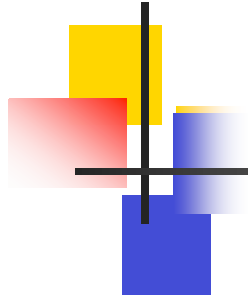




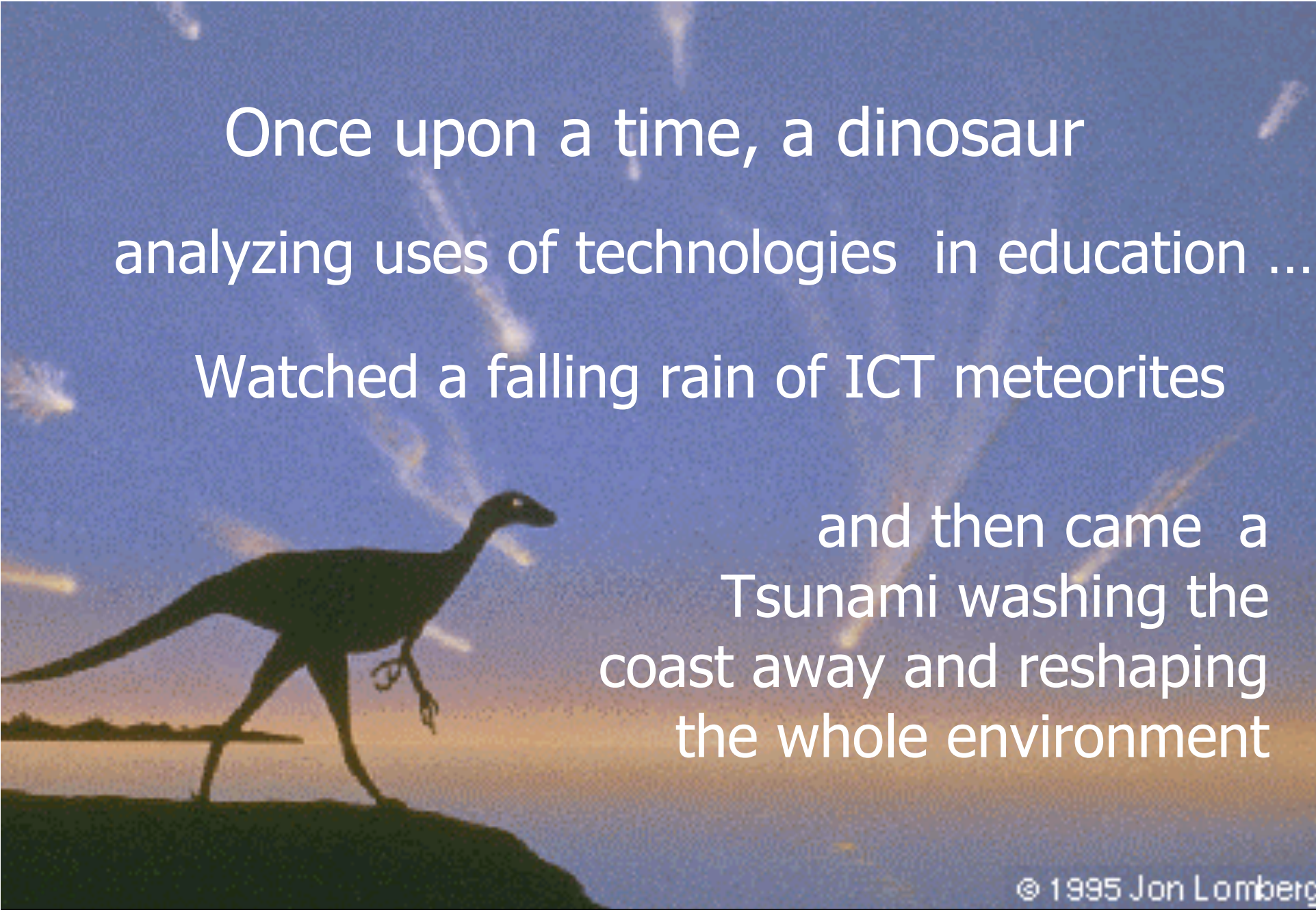
PLAN

- **Global considerations**
- **The subquestions**

- **A systemic framework**
- **Discussion**



Global considerations

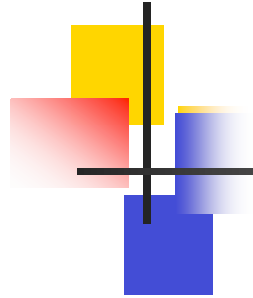


Once upon a time, a dinosaur
analyzing uses of technologies in education ...

Watched a falling rain of ICT meteorites

and then came a
Tsunami washing the
coast away and reshaping
the whole environment

© 1995 Jon Lomberg



Educational technology

VS

ICT



BACK TO THE FUTURE...

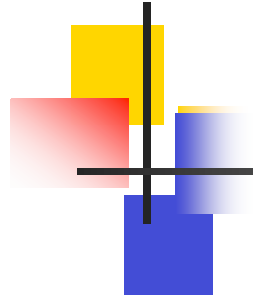
« ...McClusky National Survey of **1923**...
a **nationwide survey** of **visual instruction**
administrative practices... uncovered much
valuable data concerning teacher
education...
... **training inservice** has been concerned
with the technique of handling visual
equipment **rather than the technique of**
instruction. » Saettler (1968, p.132)



BACK TO THE FUTURE...

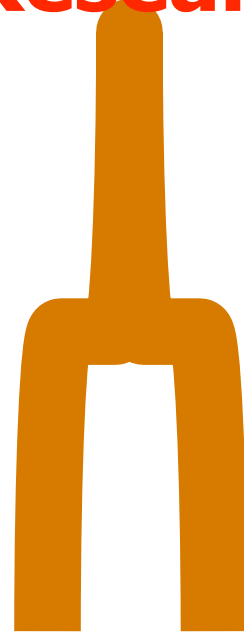
« It goes without saying that even the use of a specific instructional media does not always result in effective instruction. There must be a technology of instruction in which men, machines, methods, procedures, and organization are coordinated in the interest of more effective learning. »

Saettler 1968, p.80



Adoption of ICT in education

Innovation Research and Models



Researchers
& Innovators

Pionneers

Institutionnal &
Societal support

Wide adoption



Global considerations

More specific to the review and research

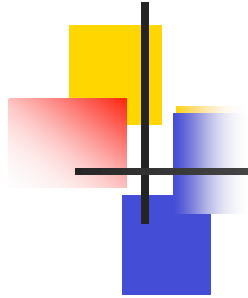
- Is the 5 years review enough?
- A watch and integration of new publications ... ECAR ?
- Considering the inclusion of Innovation research-models?
- A back and forth slip from Edtec to ICT
- Nothing about Web2.0, 3.0 and social softwares?
- Use of Blogs, Forums or Wikis as research tools
 - Collect data and co-construct the major concepts with ...
- Best practice? Small and limited initiatives or the BIG (systemic) picture? Research supported or natural setting ?



Global considerations

More specific to the review and research

- The design does not permit national «representativity»
 - In Canada 10 ed. Systems, 24 univ, 100 ed. programs
 - Quebec 8 universities with different programs
 - UofM, 7 programs with different ICT politics
 - Courses given by different professors ... course plans
- Planning is way to short, minimum 12-18 months
 - Ex. In south Dec. – Jan. is summer vacations ?
- Local research teams and funds structure ?



Subquestions



Student teachers need role models and there must be possibilities for them to practice integration of technology

Well documented

- Five factors
 - 1- the future teacher's degree or level of computer literacy,
 - 2- the value placed on ICT by future teachers,
 - 3- future teacher's expectations of success in integrating ICT,
 - 4- pedagogical integration of ICT by faculty members,
 - 5- pedagogical integration of ICT by the mentors. (lack of ICT mentors)
- These factors and mentors technological skills explain the lack of use
 - A slip ? But what about techno-pedagogy skills



Student teachers need role models and there must be possibilities for them to practice integration of technology

Well documented

- Some more factors
 - 6- Lack of equipment (availability and not being up-to-date) and access
Contradiction with assertion P.1 Availability is no longer a problem
 - 7- Lack of time ... **Is it a cause or the effect of teaching conditions?**
 - 8- **The teachers workload (reform adoption, integration of pupils in diff.) and school programs already overloaded**
- Factors according to faculties : 1- confidence, 2- lack of time, 3- access to equipment, 4- need for training and 5- institutionnal support
 - - Positive inputs : institutional recognition and valorisation :
 - grants and awards
 - - ICT strategy planned with full participation of faculties



Student teachers need role models and there must be possibilities for them to practice integration of technology

Well documented

- **Characteristics of faculties doing modeling :**
interested in professional dev., contacts with colleagues-experts, see-experience added value and
are considered as catalyst... (See Laferrière, TACT)
- Level of confidence when used in practicum & students ask for mentor to play role Model (Haydn & Barton, 2007)



Student teachers need role models and there must be possibilities for them to practice integration of technology

Problems and solutions

Problem with finding ICT competent mentors (Judge & O'bannon, 2007)

- Solution : platform for discussion with experts or fellow students
- Solution : Virtual field trips and activities (**simulated ?**, **role playing ?**)

Lead to a paradox : used in practicum, rate their skills lower...



Student teachers need role models and there must be possibilities for them to practice integration of technology

Problems and solutions

Problem with finding ICT competent mentors (Judge & O'bannon, 2007)

Subproblem : lack of explicit expectations and communication in field base site

- Solution : Professional Development Program for mentors
 - increase budget allocation for technology,
 - money awards for participation
 - Sessions of training with pre-service students (**A promising path**)
- Students ICT mentoring the mentors... failed
 - **? seem positive at UofM in a laboratory course (300 students/year)**



Student teachers need role models and there must be possibilities for them to practice integration of technology

Theoretically supported

- Cognitive apprenticeship: (Collin, Duguid & Brown, 1979)
 - To be developed : see also Bandura 1997 and Anderson, 2000)
 - http://en.wikipedia.org/wiki/Cognitive_apprenticeship
- Yes : a basic teaching-learning strategies known for centuries.
 - BUT : a 1 to 1 relationship is time, money and resource consuming
- Solutions like online expert mentoring and video support may help but may not solve the basic resource requirement problem.



Is there a 'best practice' in this respect?

At what level, individual initiatives or global ?

- At the **individual initiatives or micro level**, some strategies are interesting...
 - Laferrière (école éloignée en réseau)
 - UofM «cohorte» of ICT students
- At local meso level, some universities implement **one computer for all students and politics**... Acadia University
- At the macro level **New Brunswick Ministry of education politics and leadership**



What are the different roles for different categories of teacher educators?

What categories of teacher educators?

Faculties ? Lecturer ? Faculties in ICT ? Other faculties in specific discipline?

- Mentors roles and strategies : 5 trends (Grove, Strudler & Odell, 2004)
(1) one-to-one tutoring, (2) mentors as role models, (3) discussions and reflections, (4) pointing at ways of finding support and (5) offering visions, establishing expectations and challenging the student teachers.



Is there a need for closer collaboration?

Well documented and theoretically supported

- Between : ICT faculties, other faculties, field mentors : **YES**
 - **But the program should make sure they do**
 - ICT course in year one of a 4 year program... and then ?
- Faculties may address **more theoretical dimensions of teaching** but they need to be knowledgeable of the **conditions and constraints** of classroom daily life. And Vice versa
- A major problem of schools of education : too much theory oriented and not enough anchored in the real life of the teacher
- But the **main stream culture** of these actors and **lack of time** are probably the worst problem to deal with.



*Are there **differences** between different groups of teacher educators regarding the **attitudes** and **use** of ICT ?*

YES but what do they mean?

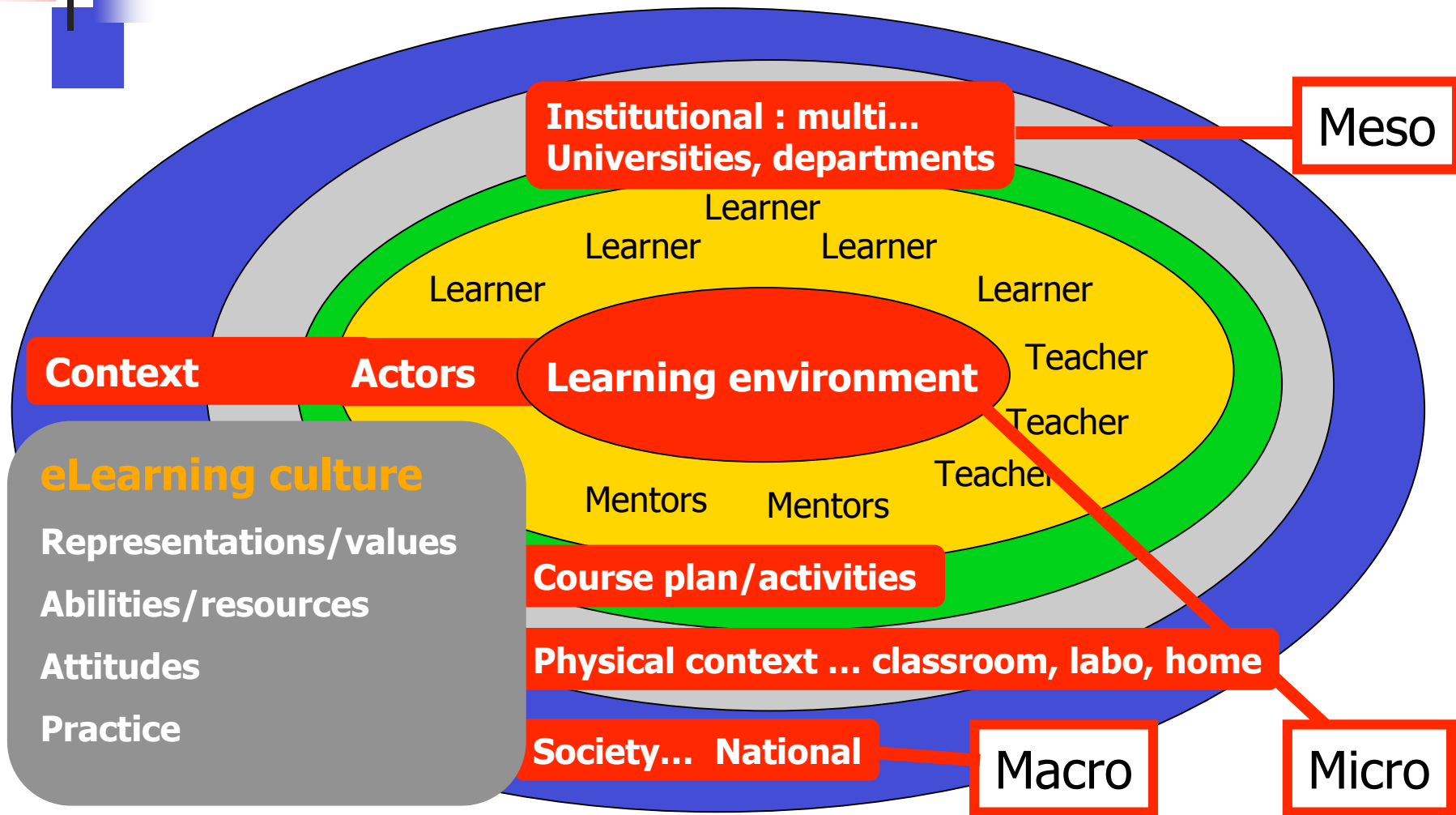
- YES but what do they mean? Differences in quantitative use or types ?
- Couldn't it be our perception and experience that shapes our practice?
- A matter of professional culture ? The type of traditional activities that are used in the domain... Ex. of Law... simulation and role game
- Learning is learning. Basic instructional technology principles: adapt activity to goals, population and context
- Community of practice dedicated to specific domains may help specialists to gain and shared their expertise from each other inputs.



A SYSTEMIC STRUCTURE OF FACTORS

- 
- **Societal aspects (Macro)**
 - **Institutional aspects (Meso)**
 - **Learning environ./dispositive (Micro)**
 - Technology (environment, interface, tools)**
 - Pedagogy (scenario: goals, processes,...)**
 - Development process/strategies**
 - **Vision, politics, resources & action**
(Learners, faculties, mentors, professionals, adm. & politicians)

A MULTIDIMENSIONAL MODEL



3

What ? Why ? When ? How ?

Objectives, competencies, activities,
Actors' roles+ responsibilities,
resources, evaluation of impacts...

Actors' culture

Learners

Teachers

Mentors

Pro...



- 1- Access to... information and resources (time - space)
- 2- Individualization, adaptation of learning activities
- 3- Richer Feedback (access + individualization+ frequency = quality)
- 4- Autonomy, responsabilization & learner involvement
- 5- Cooperation, collaboration, co-elaboration of knowledge
- 6- Situated learning, reality anchored activities, simulation, visualization
- 7- High-level knowledge, critical thinking, reflexive verbalization

Objectives

Activities

Resources

Evaluation

Pedagogical spaces of integration

- ⓔ Explicit ⓔ
- ⓐ Implicit ⓐ
- ⓑ Absent ⓑ

7 indicators/factors of innovative & enriched practice

THE END ...



Questions & discussion

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