SITES

Status of IT in Education Studies:

towards a follow-up of SITES 2006

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IEA studies on IT in education

CompEd – late 1980s & early 1990s

SITES – Second IT in Education Studies:

- *M1:* survey of schools – 1998

- *M2*: case studies of innovative pedag practices utilizing IT -2001

- *M3*: did not take off, but:

- *SITES* 2006: survey of schools and (math & science) teachers

Education perspective

Knowledge economy – Information society:

Knowledge no longer primarily knowing facts and theories and being able to reproduce them

('old' knowledge – reproductive skills)

BUT:

ability to find relevant data and to derive meaning from it (lifelong learning skills)

('new' knowledge – productive skills)

Lifelong learning skills:

In new circumstances, being able

- to generate and evaluate answers to open, non-standardized questions,

- to set own learning goals,

- to plan and regulate own learning

- to evaluate own progress

Need for

analytical, creative and synthesizing skills

Implications for education:

- Other balance needed between 'old' and 'new'

- enable learners to become more active and make them more responsible for arranging their own learning process

- teachers becoming more 'professional coaches'

Pedagogical practices for information society

(Voogt & Pelgrum, 2003)

1. New goals: students become competent in information management, communication, and collaboration, and metacognition.

2. Less structured sources of information as learning materials.

3. Traditional boundaries between subjects to be bridged

Pedagogical practices for information society

4. Gap between discipline-related knowledge taught in schools and application of knowledge in real life to be bridged

5. Boundaries between the school and outside world need to fade.

=> More focus on needs of individual learners

=> Other ways of assessment: more open, more formative

Obvious role of ICT in realizing new vision on teaching and learning:

- as a *general tool* (e.g. word processing),

- as *digital learning resources* (e.g. tutorials, simulations, web-based materials, digital encyclopedia, etc),

- as *network and communication tools* (e.g. internet browser, email software),

- as *digital tools* (e.g. microcomputer based laboratories, statistical tools, accounting-bookkeeping software)

No neglect of 'old' knowledge':
what has traditionally been valued
as important knowledge and skills

BUT vision is that

schools should reflect *a good balance*
between what is traditionally valued
and what is considered important in
the information society.

SITES 2006 – *follow-up?*

This shift in emphasis reflected in IEA studies

From (CompEd):

counting computers and inventorying the use of IT and obstacles to it

To (SITES 2006)*:*

how education (pedagogical practices) is adapting to the needs of the information/knowledge society and how IT is used in supporting this.

Findings from SITES 2006

In many countries initiatives and policies to make education relevant for information society:

from *sole emphasis on 'traditional' pedagogies* with whole class teaching, all children same content, same activities and same pace ('old')

towards *more attention for 'lifelong learning goals' and 'connectedness'* ('new').
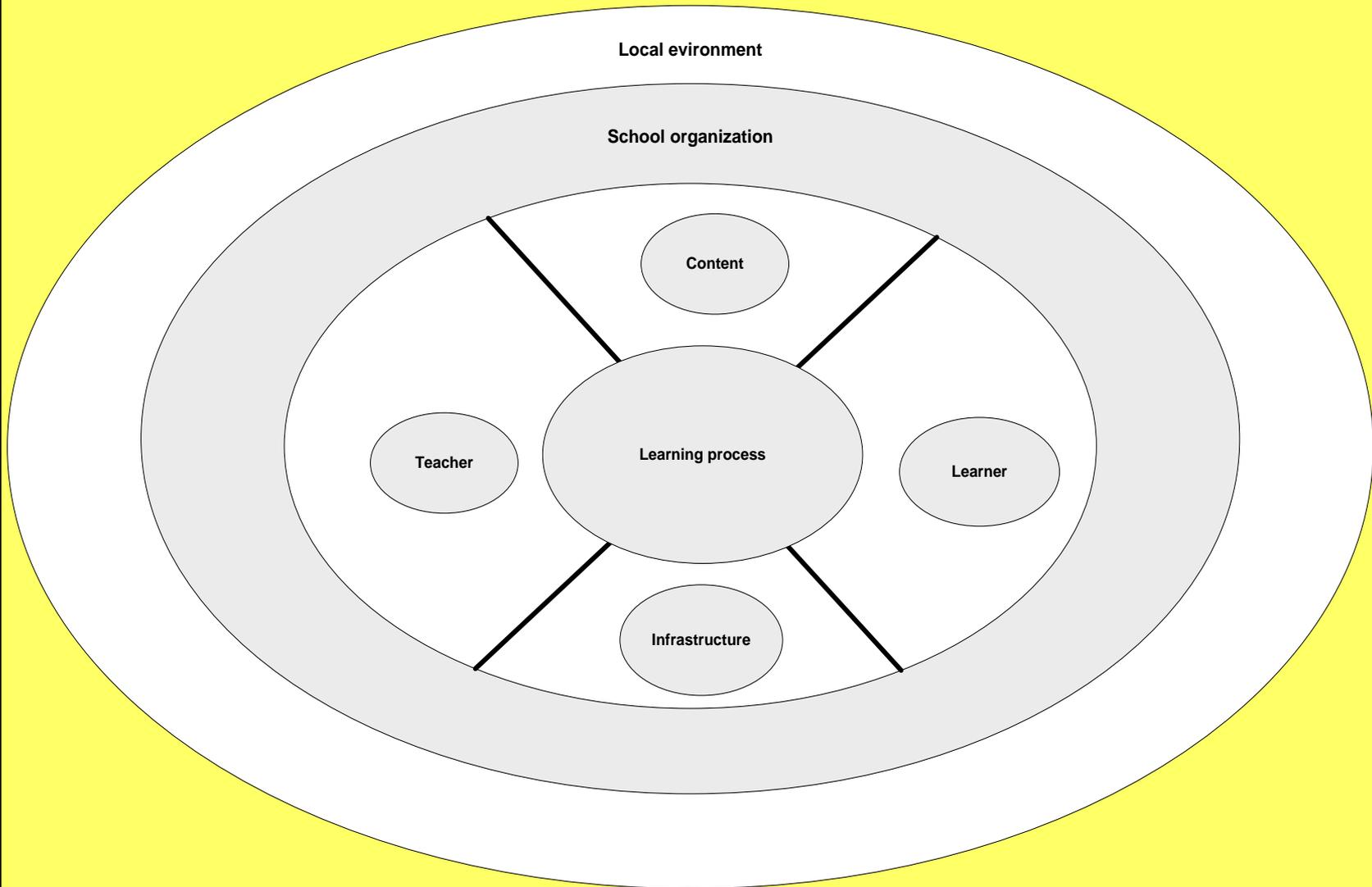
Findings from SITES 2006

- Education systems show variety of patterns

- No balance yet between 'old' and 'new'

- Many systems seem in a transition period

$\Rightarrow$ Relevant to monitor the status of pedagogical practices and use of IT –

or: how countries develop their education for an information society

Potential core domains

A. Curriculum

B. Learning process

C. Infrastructure and learning materials

D. Teacher

E. Learners

F. School & management environment

G. Trends (for systems in SITES 2006)

See: p.5 & 6 for exemplary components,
p.9 & 10 for exemplary goals of study

Exemplary goals - A

A. curriculum:

to describe how curricula in schools are reflecting 21st century goals (or lifelong learning goals)

In other words:

to describe whether curricula include students' competences in using IT and related areas like information handling, working in independently, etc.

Exemplary goals - B

B. *learning process:*

to describe what pedagogical practices are applied in schools and classrooms ('*what is balance between 'old' and 'new'?)*

and how IT is used in these

to analyze the effectiveness of IT

to assess OTL in acquiring competencies on

(i) IT/digital/information literacy *and/or*

(ii) lifelong learning skills

Exemplary goals - C

C. *Infrastructure and learning materials:*

to describe infrastructure available in schools

to describe what and how much use students & teachers make of IT, both in school and outside?

to analyze what factors influence the use of IT by various actors?

to describe how the use of IT is monitored at all levels

Exemplary goals – D - G

SEE discussion memo p.10

Proposal 1:

the IEA embarks on a SITES cycle:

a cycle of 'complete'

Status of IT in Education Studies (SITES)

'*complete*' in the meaning of:

all components represented: student, teacher, school, system level

Components of follow-up studies

See SITES 2006 for components School, Teacher and Education System

Teacher component: only math & science teachers or also other subjects (e.g. languages, humanities) or even ALL teachers?

Student component – new:

(i) Background questionnaire

(ii) Achievement testing

Student component

(i) *Background questionnaire*:

- Background

- Use of IT inside & outside school

- Attitudes towards 'new' pedagogical approaches and use of IT

- Self reports of basic IT skills and LLL competencies

- *Other*

Student component

(ii) Achievement testing:

Key question: what should be the focus of student assessment?

Or: What competencies important for an information society should be assessed?

a. Lifelong learning skills?

and/or

b. IT/digital/information literacy?

Student component

(ii) Achievement testing

a. Lifelong learning skills, e.g.

- Info handling, virtual communication, cooperation, etc

- See also App.3 about foci for education in 21st century: 'learning and innovation skills'

Student component

(ii) Achievement testing

a. Lifelong learning skills, e.g.

- Working in teams on open ended real world problems

- Problem solving, collaboration and organization skills

- Information handling skills

See also App.3 about foci for education in 21st century: 'learning and innovation skills'

Achievement testing

b. *IT/digital/information literacy*

Different countries and institutions have different emphases/labels:

AUS: technology literacy

NOR: digital literacy – self reporting

ENG: national IT-test

USA: ETS ICT literacy assessment for HE and upper 2nd education

P21: information, media & technology skills

Other countries may have other emphases

Achievement testing

Nomenclature:

for use in the discussion '*IT literacy'* when referring to both

a. LLL skills and

b. IT/digital/information literacy

Achievement testing

Challenges for the IEA:

1. to decide on type and focus of student IT literacy test

2. to develop an IT literacy test that can be used cross-nationally

3. applying online data collection (like in SITES 2006) also on student component in follow-up of SITES 2006

Proposal 2:

The IEA decides to establish a SITES *development project* with two goals:

(i) to prepare a proposal on how the IEA will conceive IT literacy as a domain for student achievement testing (*GA2008*?)

(ii) to develop one or more pilot versions of an IT literacy achievement test

as the basis for developing the achievement test for the first SITES follow-up study (*GA2010?)*

Possible dates for complete SITES follow-up

SITES 2006 – follow-up?

2011: combined IEA TIMSS & PIRLS

2012: PISA with IT component

=>

Options for first complete follow-up study:

1. data collection >2012, *e.g. 2013 or 2014*

2. in the case overlap with PISA2012 not an issue, *then* 2012 an option

(decision also dependent on progress in development project)

Bridging study?

In the case the IEA tends to decide for a complete study in 2014:

number of member countries may consider gap between 2006 and 2014 too long to keep the momentum and interest of policy makers in topic of IT & education

$\Rightarrow$ option of a '*bridging study*' in 2010:

survey of schools and teachers, with the development project as a flanking project

SITES *2006 – follow-up?*

Thank you!