

Learning from International Case Studies on Innovative Classroom Practices Using Technology

Second International Information Technology in Education Study

SITES M2

SITES M2:

Qualitative Studies of Innovative Pedagogical Practices Using Technology

IPPUT

Why study IPPUTs?

- What is the motivation for countries to invest so much money and efforts to introduce ICT into the curriculum?
- Has the introduction of ICT into classrooms brought about fundamental changes in teaching and learning?
- What does the “School of Tomorrow” look like?

Innovative Pedagogical Practices – preparation for life in a knowledge society

Emerging (v.s. traditional) educational paradigm:

- more autonomous learning environments
- the teacher acts as a guide to learning (v.s. instructor)
- students are active learners working in teams (v.s. passive individual learners)
- schools are integrated into society (v.s. isolation)
- parents are actively involved in their students' schooling

Aims of SITES M2

IPPUTs are rare everywhere - In most countries, only a relatively small number of schools and teachers are taking the lead in using technology to make changes in pedagogical practices that prepare students for the future.

- What do innovative teachers do?
- How has ICT been used to change the curriculum?
- What do students learn through these IPPUTs?
- What school organizational practices, national policies, and other contextual factors contributing to their success?
- What can policy-makers and other teachers learn from these innovations?

Criteria for IPPUT selection

- To qualify as an IPPUT, a practice must be one:
- In which technology plays a substantial role
 - That shows evidence of significant changes in roles of teachers and students, the goals of the curriculum, and/or the educational materials or infrastructure
 - That shows evidence of measurable positive student outcomes
 - That is sustainable and transferable, AND
 - That are **innovative, as locally defined.**

Possible criteria for innovativeness

- Promote active and independent learning
- Provide students with information literacy skills
- Engage students in collaborative, learning on complex, extended, real-world-like problems or projects.
- Provide students with individualized instruction
- Address issues of equity (genders/ethnic/social/geographic/socioeconomic)
- “Break down the walls” of the classroom
- Improve social cohesiveness

Work Progress of the Hong Kong SITES team

Nov 2000 **open nomination for IPPUTs (Innovative pedagogical practices using technology)**

Dec 2000 **steering committee finalized on cases selected**

Dec 2000 **Data collection**

June 2001

June 2001 **Writing up Case Reports**

Sept 2001

Video Case reports

June 2002 **Case Analysis**

Hong Kong Cases

- 9 cases sent for international comparison
- 5 extra cases for dissemination of innovation practices (local extension)
- Total 14 cases at different educational level on various subjects:
 - Science
 - Art & Design
 - Chinese
 - Economics
 - General Studies
 - interdisciplinary / cross-curriculum

International Comparison

Primary: 3

Lower Secondary: 2

Upper Secondary: 4

Local Extension

Primary: 3

Lower Secondary: 2

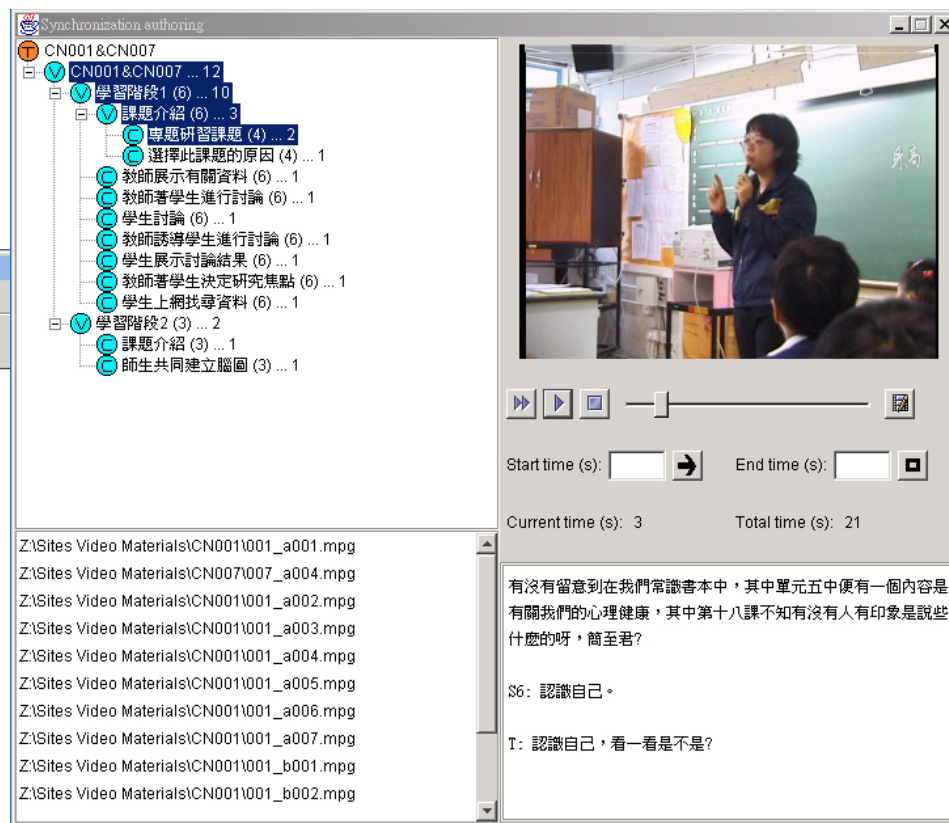
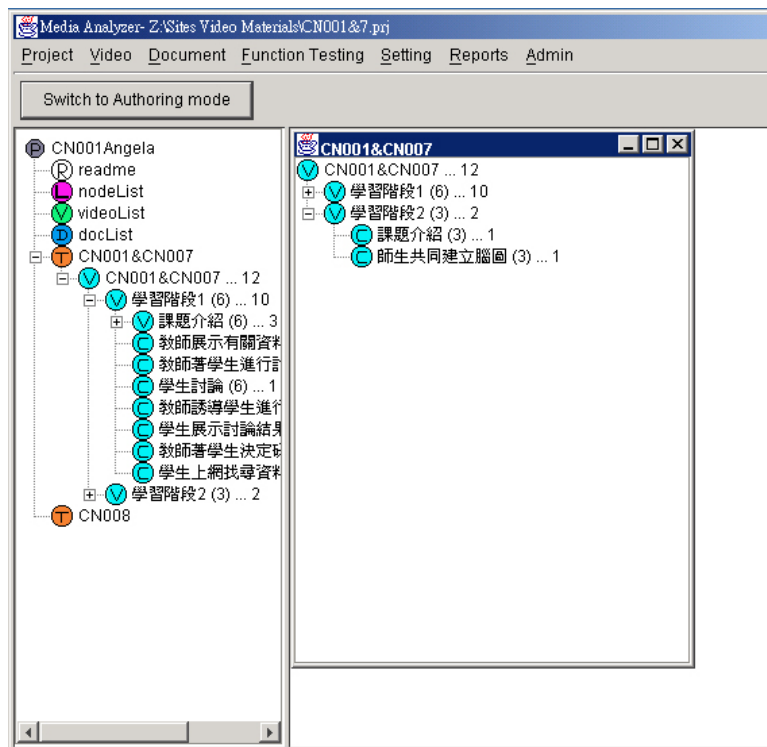
Data collected in the Hong Kong IPPUT cases

- **School Documents**
- **Interviews of:**
 - Principals;
 - IT coordinators;
 - IPPUT teachers;
 - Non-IPPUT teachers;
 - Students
- **Videotapes of lessons**
- **Students' Work**

Data preparation and data analysis

- **Transcription of all interviews and lessons**
- **Qualitative Analysis with the use of a newly developed software: Media Analyzer**

Media Analyzer



SITES Data of the Participating Countries

174 Cases Reports

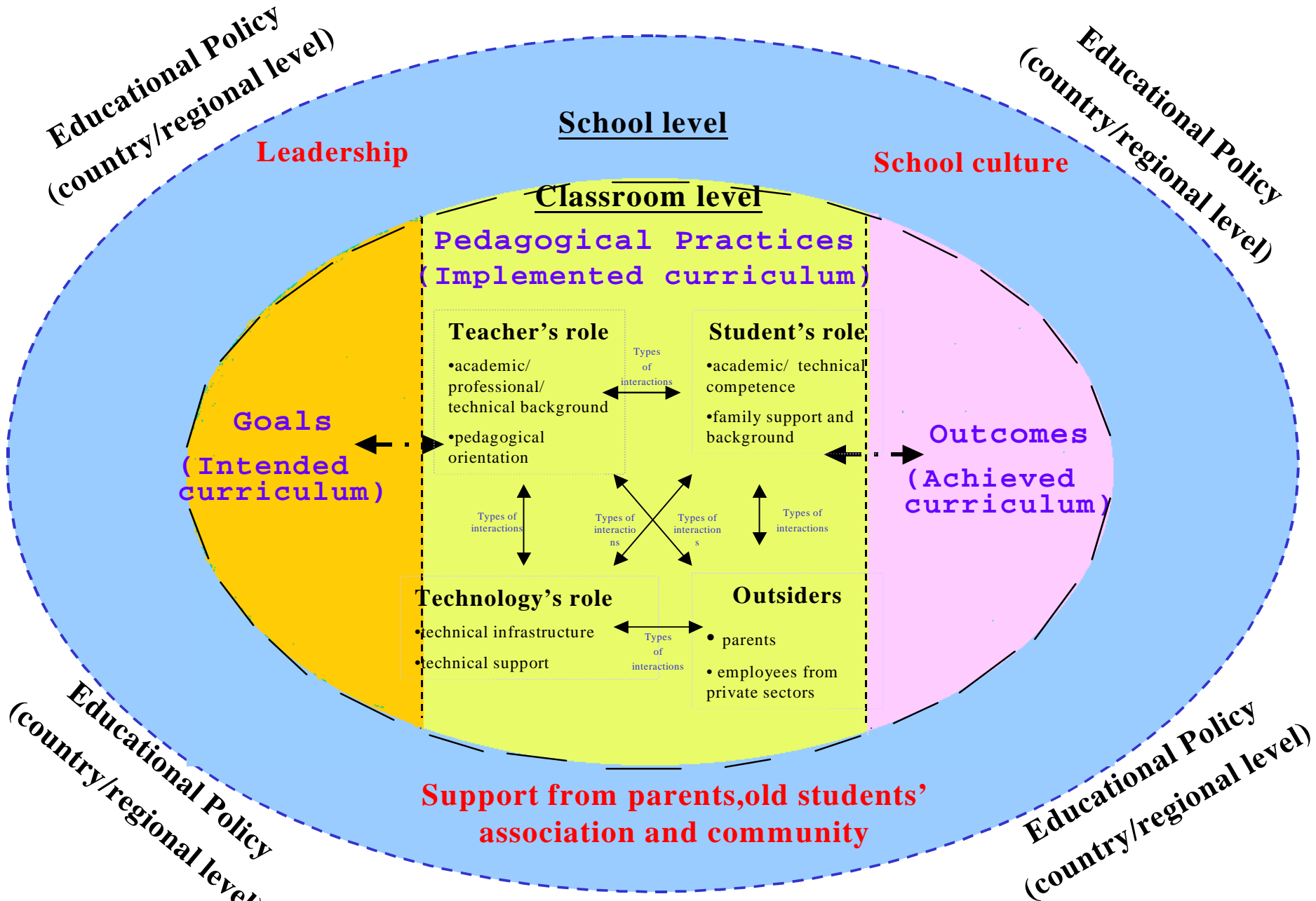
participating countries

Australia	Italy	Russia
Canada	Japan	Singapore
Chile	Korea	Slovakia
Denmark	Latvia	Slovenia
Finland	Lithuania	South Africa
France	Netherlands	Spain Catalonia
Hong Kong	Norway	Taiwan
Indonesia	Philippines	Thailand
Israel	Portugal	UK
		USA

What pedagogical practices are found in the 174 cases?

1. Project work (92 cases)
2. Scientific Investigation (8 cases)
3. Media Production (29 cases)
4. Virtual School & Online Course (20 cases)
5. Task-Based Activity (20 cases)
6. Expository Lessons (5 cases)

Analysis Framework



Focus of Analysis

How do we compare innovations?

Practices	Old	New
Technology		
Old		
New		

6 dimensions of comparison

Goals

Teacher's Role

Students' Role

ICT used

Manifestation of Learning Outcome

Connectedness

6 dimensions to understand innovativeness

1. Goals

Subject-based
knowledge

Higher Order
Thinking

Ability to function
effectively as
members of a
learning community

2. Teacher's Role (Belief towards teaching and learning)

Transmitter of
information
and evaluator
of learning

Design learning
tasks; provide
resource for
learning

Coach to establish
and support the
development of
learning
communities

3. Students' Role

Follow
instructions

Determine
learning
strategies and
schedule

Develop own learning
goals, learning strategy,
self monitor & evaluate
contribute to communal
knowledge building

6 dimensions to understand innovativeness

4. ICT used

No ICT used

General software
for classroom
presentation

Sophisticated
technology tailored
for specific
educational purposes

5. Manifestation of Learning Outcome

Unidimensional

Multiple ways
to assess
learning
outcomes

Multidimensional;
knowledge, skills,
abilities and attitudes
operating in concert
for complex problem
solving

6. Connectedness

Standalone
classroom

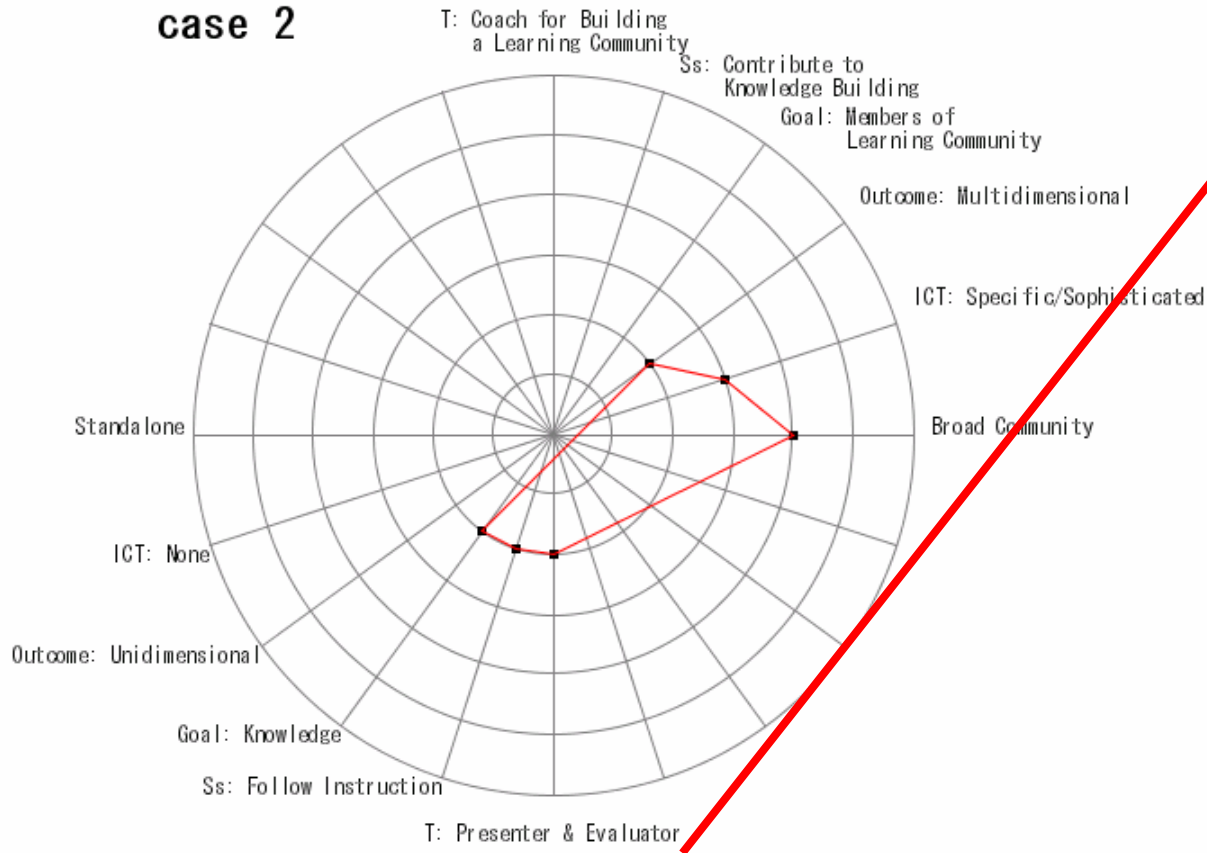
Partial
involvement of
outsiders

Multiple ways of
involving outsiders in
the curriculum
process

Primary

Art

case 2

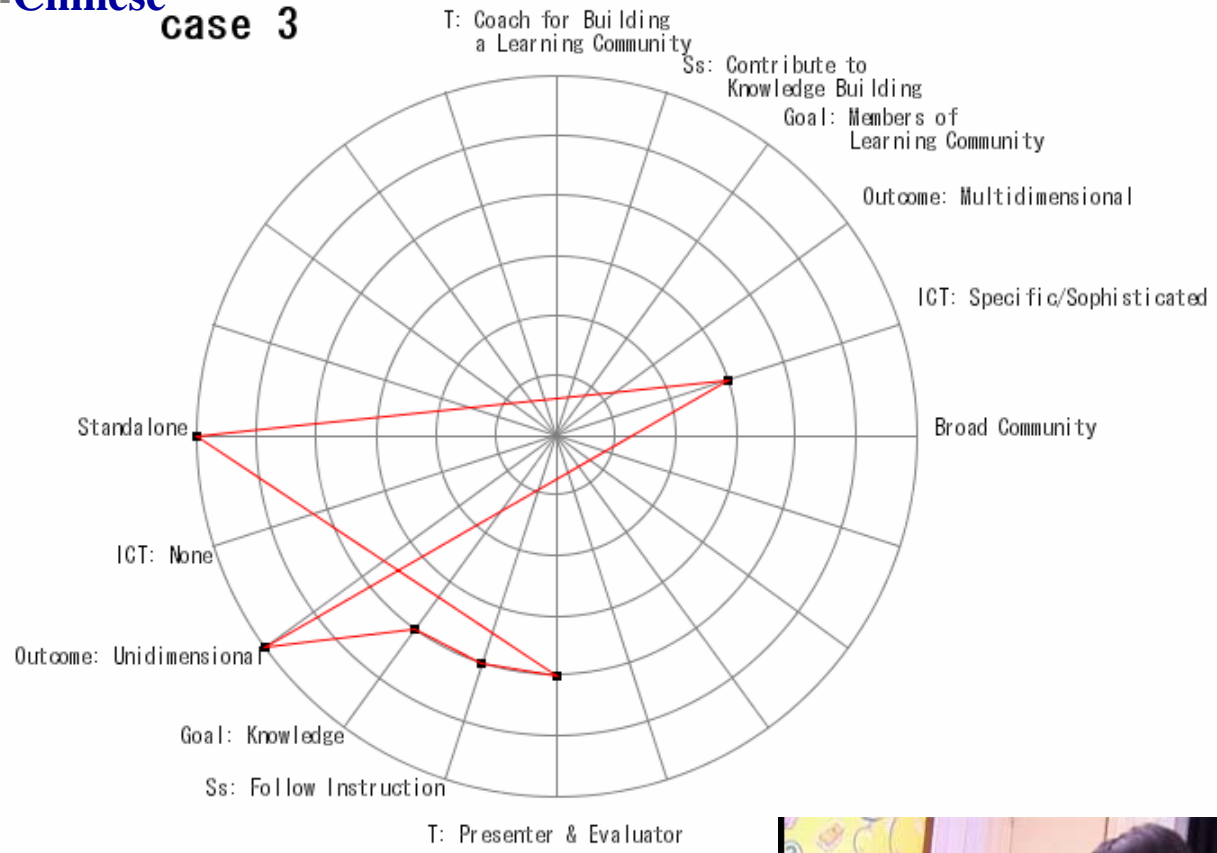


More Innovative



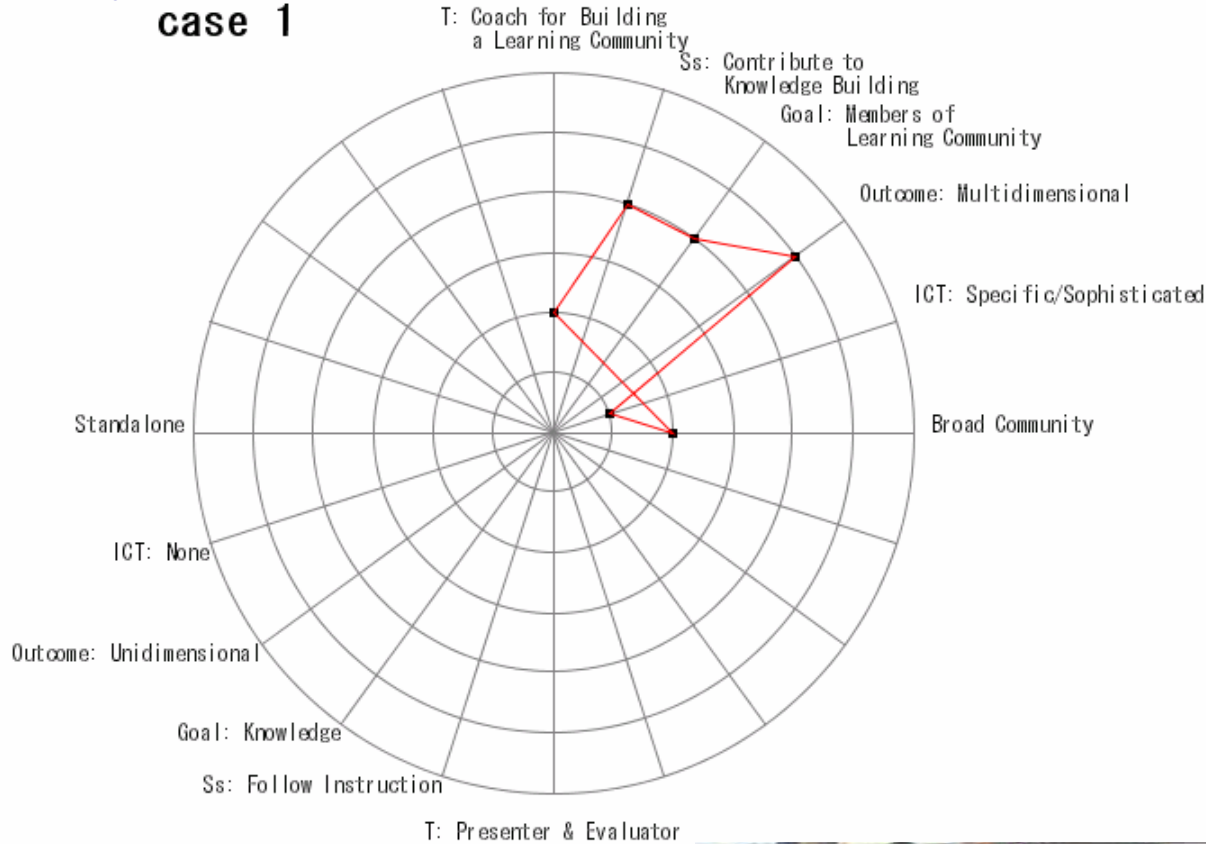
Primary

Chinese case 3



Primary

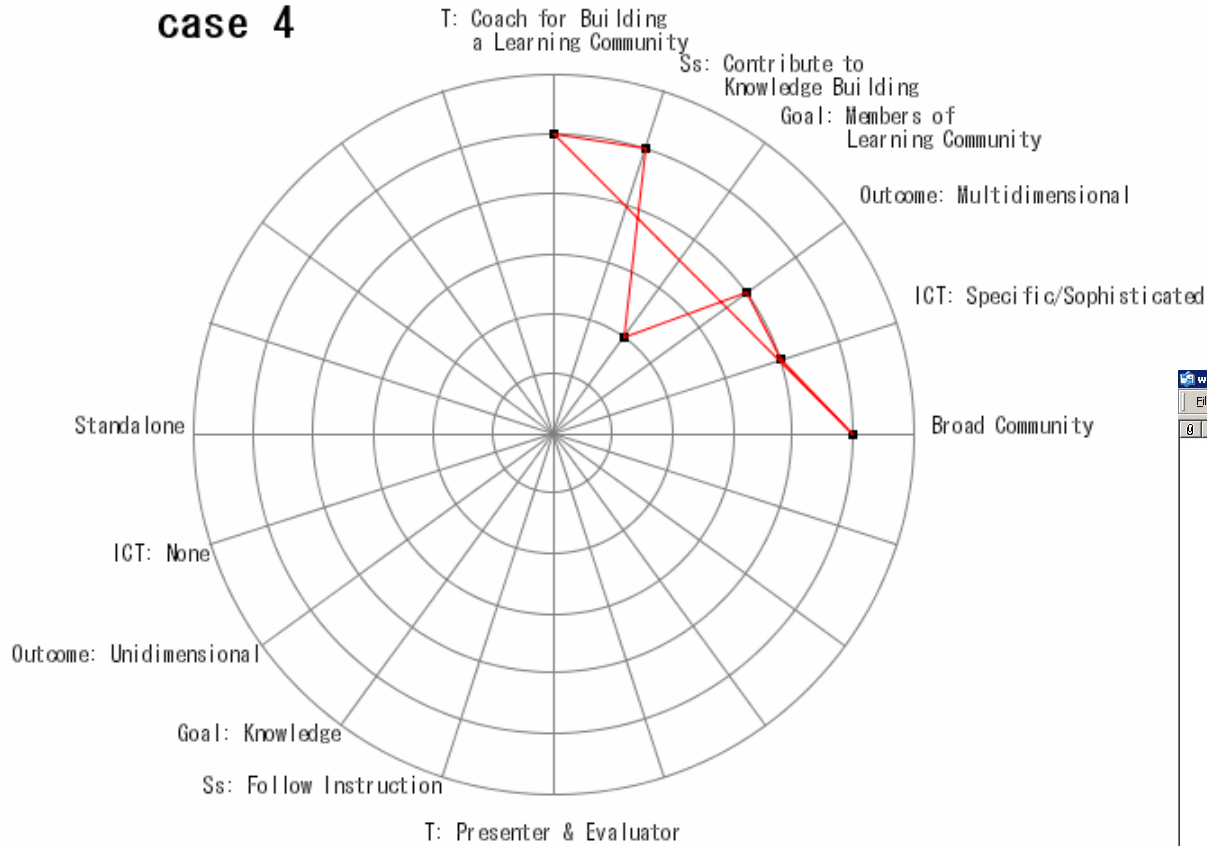
Project Work case 1



Secondary

Online Discussion

case 4



wyk.biology - Outlook Express

File Edit View Tools Message Help

Subject	From	Sent
fats	Potato	2000/12/12 下午 02:06
Re: fats	Wong Wai Leung	2000/12/13 上午 10:46
bio人, 努力啦...	James Ng	2000/12/15 下午 02:56
Re: bio人, 努力啦...	Bjorn	2000/12/15 下午 04:39
Re: bio人, 努力啦...	James Ng	2000/12/15 下午 07:12
Re: bio人, 努力啦...	KMBWYK	2000/12/15 下午 10:35
Re: bio人, 努力啦...	James Ng	2000/12/16 上午 12:14
Pattern of inheritance	康熙	2000/12/16 上午 12:19
Re: Pattern of inheritance	Wong Wai Leung	2000/12/16 上午 08:00
Re: Pattern of inheritance	Manigo	2000/12/16 下午 01:03
Re: Pattern of inheritance	Ed	2000/12/16 下午 06:55
Re: Pattern of inheritance	學成	2000/12/16 下午 10:54
Re: Pattern of inheritance	★Blissful★	2000/12/18 上午 12:02
Re: Pattern of inheritance	學成	2000/12/18 上午 12:31
Re: Pattern of inheritance	康熙	2000/12/18 下午 01:59
Re: Pattern of inheritance	Ronnie Lo	2000/12/18 下午 02:13
Re: Pattern of inheritance	samchoi	2001/1/6 上午 12:09
Re: Pattern of inheritance	derekchoi	2001/1/6 上午 12:11
Form 5 Bio exam	Air數你	2000/12/18 上午 12:32
About the problem in exam	Ed	2000/12/18 下午 12:09
Re: About the problem in exam	KMB Chan	2000/12/18 下午 02:50
Re: About the problem in exam	KMBWYK	2000/12/22 下午 08:12
解脫了...	James Ng	2000/12/19 下午 11:30
DNA and RNA	Potato	2000/12/28 下午 07:53
Re: DNA and RNA	Ed	2000/12/28 下午 10:55
Re: DNA and RNA - which one first ?	Wong Wai Leung	2000/12/31 下午 10:28
Re: DNA and RNA	Yan	2000/12/29 下午 03:48
Re: DNA and RNA	KMBWYK	2001/1/6 下午 05:28
Re: DNA and RNA (missed attache...	KMBWYK	2001/1/6 下午 05:35
smoking..	James Ng	2001/1/7 下午 11:38
Re: smoking..	...: 去0左牙買加摺牙買...	2001/1/8 下午 05:58
Re: smoking..	Chronosfera	2001/2/8 下午 08:58
Re: smoking..	...: p a d d y::m c g e...	2001/2/8 下午 10:35
smoking again..	James Ng	2001/1/8 上午 12:37
Re: smoking again..	...: 去0左牙買加摺牙買...	2001/1/8 下午 05:51
Re: smoking again..	James Ng	2001/1/8 下午 11:36
Re: smoking again..	KMB Chan	2001/1/9 下午 10:14
Re: smoking again..	James Ng	2001/1/9 下午 11:46
Re: smoking again..	...: g e c k o k i d::i n...	2001/1/12 下午 06:32

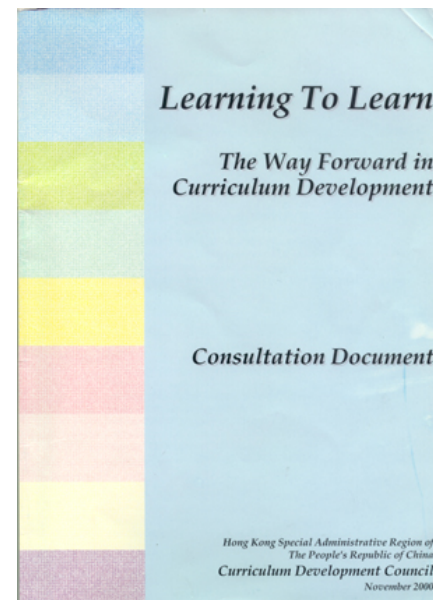
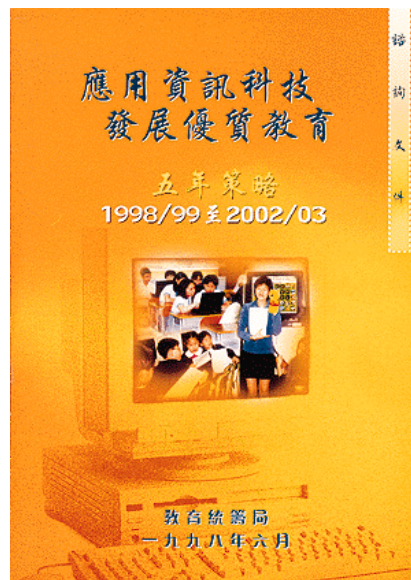
Where lies the future of IT in education?

Some recommendations for Hong Kong

1. Integrate IT in education with Curriculum Reform

The curriculum reform consultation document, Learning To Learn, was published after the launch of the Five Year Strategy.

Only a few visionary schools principals are able to integrate the implementation of IT with their schools' curriculum reform in order to enhance the quality of teaching and learning in the schools.



2. Provide Professional and Leadership Training for School Principals and Teachers

- Professional development is NOT the simple acquisition of ICT-related technical skills.
- Should focus on the development of curriculum leadership that can make use of ICT to enhance quality of education and support innovation
- Should relate ICT integration to the 6 dimensions of understanding innovation, and not just a uni-dimensional emphasis on technology use

3. 4 strategic components must be implemented coherently to support curriculum reform

The 5-year Strategy has identified 4 strategic components:

- Access and Connectivity**
- Teacher Enablement**
- Curriculum and Resource Support**
- Community-wide Culture**

How each component should be implemented, e.g. where computers are placed & when these can be used would affect what pedagogical practices are supported and the impact of ICT use.

4. Formulate Long-term policy for ICT in education

- The main achievement of the Five Year Strategy has so far provided schools with the necessary conditions for ICT integration into teaching and learning.
- Without a long term policy for ICT in education, the necessary conditions will fade and Hong Kong education will face a stark future without leading schools into the knowledge era.

5. Research on impact of ICT on Students' Learning Outcomes

SITES Module 3 focuses on how far students are able to make use of ICT in their learning and for the purpose of complex problem solving. Performance assessment involving authentic tasks will be conducted.

It is hoped that Hong Kong can continue with this third module, as it would be critically important for us to know about our students' learning outcomes as well as how they compare with peers in other parts of the world.

For more information:

<http://sites.cite.hku.hk>