<table>
<thead>
<tr>
<th>Title</th>
<th>Learning from International Case Studies on Innovative Classroom Practices Using Technology: Second International Information Technology in Education Study</th>
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<tbody>
<tr>
<td>Author(s)</td>
<td>Law, N</td>
</tr>
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<td>The 2002 CITE Research Symposium (CITERS 2002) on IT in Education: Research into Practice, Hong Kong, China, 6 July 2002.</td>
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<td>Issued Date</td>
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<td>URL</td>
<td><a href="http://hdl.handle.net/10722/44073">http://hdl.handle.net/10722/44073</a></td>
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<tr>
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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
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity Description</th>
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</thead>
<tbody>
<tr>
<td>Nov 2000</td>
<td>open nomination for IPPUTs (Innovative pedagogical practices using technology)</td>
</tr>
<tr>
<td>Dec 2000</td>
<td>steering committee finalized on cases selected</td>
</tr>
<tr>
<td>Dec 2000</td>
<td>Data collection</td>
</tr>
<tr>
<td>June 2001</td>
<td>Writing up Case Reports</td>
</tr>
<tr>
<td>Sept 2001</td>
<td>Video Case reports</td>
</tr>
<tr>
<td>June 2002</td>
<td>Case Analysis</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>International Comparison</th>
<th>Local Extension</th>
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<tbody>
<tr>
<td>Primary: 3</td>
<td>Primary: 3</td>
</tr>
<tr>
<td>Lower Secondary: 2</td>
<td>Lower Secondary: 2</td>
</tr>
<tr>
<td>Upper Secondary: 4</td>
<td></td>
</tr>
</tbody>
</table>
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

Centre for Information Technology in School and Teacher Education (CITE)
## SITES Data of the Participating Countries

### 174 Cases Reports

#### Participating countries

<table>
<thead>
<tr>
<th>Australia</th>
<th>Italy</th>
<th>Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Japan</td>
<td>Singapore</td>
</tr>
<tr>
<td>Chile</td>
<td>Korea</td>
<td>Slovakia</td>
</tr>
<tr>
<td>Denmark</td>
<td>Latvia</td>
<td>Slovenia</td>
</tr>
<tr>
<td>Finland</td>
<td>Lithuania</td>
<td>South Africa</td>
</tr>
<tr>
<td>France</td>
<td>Netherlands</td>
<td>Spain Catalonia</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Norway</td>
<td>Taiwan</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Philippines</td>
<td>Thailand</td>
</tr>
<tr>
<td>Israel</td>
<td>Portugal</td>
<td>UK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA</td>
</tr>
</tbody>
</table>
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

Educational Policy
(country/regional level)

Leadership

School level

Pedagogical Practices
(Implemented curriculum)

Teacher’s role
• academic/professional/technical background
• pedagogical orientation

Student’s role
• academic/technical competence
• family support and background

Goals
(Intended curriculum)

Technology’s role
• technical infrastructure
• technical support

Outsiders
• parents
• employees from private sectors

Student’s role
• academic/technical competence
• family support and background

Outcomes
(Achieved curriculum)

Support from parents, old students’ association and community

School culture

Classroom level

Types of interactions

Teacher’s role

Student’s role

Goals

Technology’s role

Outsiders

Types of interactions

Types of interactions

Types of interactions

Types of interactions

School level
**Focus of Analysis**

**How do we compare innovations?**

<table>
<thead>
<tr>
<th>Practices</th>
<th>Old</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

CITE
Centre for Information Technology in School and Teacher Education
6 dimensions to understand innovativeness

4. ICT used

<table>
<thead>
<tr>
<th>No ICT used</th>
<th>General software for classroom presentation</th>
<th>Sophisticated technology tailored for specific educational purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophisticated technology</td>
<td>General software for classroom presentation</td>
<td>Unidimensional; knowledge, skills, abilities and attitudes operating in concert for complex problem solving</td>
</tr>
<tr>
<td>Multiple ways to assess learning outcomes</td>
<td>Multidimensional; knowledge, skills, abilities and attitudes operating in concert for complex problem solving</td>
<td></td>
</tr>
<tr>
<td>Partial involvement of outsiders</td>
<td>Multiple ways of involving outsiders in the curriculum process</td>
<td></td>
</tr>
<tr>
<td>Standalone classroom</td>
<td>Multiple ways of involving outsiders in the curriculum process</td>
<td></td>
</tr>
</tbody>
</table>
Primary

Art

case 2

More Innovative
Primary

Chinese

Case 3

T: Coach for Building a Learning Community
Ss: Contribute to Knowledge Building
Goal: Members of Learning Community
Outcome: Multidimensional

ICT: Specific/Sophisticated

Broad Community

ICT: None

Outcome: Unidimensional

Goal: Knowledge

Ss: Follow Instruction

T: Presenter & Evaluator

Standalone
Primary

Project Work

Case 1

T: Coach for Building a Learning Community
Ss: Contribute to Knowledge Building
Goal: Member of Learning Community
Outcome: Multidimensional

ICT: Specific/Sophisticated

Broad Community

Outcome: Unidimensional

Goal: Knowledge
Ss: Follow Instruction

T: Presenter & Evaluator

Ss: Standalone

ICT: None

Ss: Follow Instruction
T: Presenter & Evaluator

ICT: Specific/Sophisticated

Broad Community

Outcome: Multidimensional
Secondary

Online Discussion

case 4

T: Coach for Building a Learning Community
Ss: Contribute to Knowledge Building
Goal: Members of Learning Community
Outcome: Multidimensional

ICT: Specific/Sophisticated

Broad Community

Standalone

ICT: None

Outcome: Unidimensional

Ss: Follow Instruction

T: Presenter & Evaluator
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