About UNESCO-APEID and the Conference

Based in the UNESCO Asia-Pacific Regional Bureau for Education in Bangkok, Thailand, the Asia-Pacific Programme of Educational Innovation for Development (APEID) is a UNESCO regional inter-country cooperative programme involving more than 40 Member States. APEID was approved at the 17th UNESCO General Conference in 1972 and came into official operation in 1973.

The central mission of APEID is to contribute to sustainable human development through the design and implementation of educational programmes and projects, mainly at the post-primary level of education and focusing on educational innovation for development.

This series of international conferences, held since 1995, has been recognized as an important platform for policy dialogue and information/knowledge sharing on development-oriented education innovations and exemplary practices in and beyond the Asia-Pacific region.

Co-organized by
UNESCO Asia-Pacific Regional Bureau for Education
National Commission of the People’s Republic of China for UNESCO
The World Bank
Korea Education and Research Information Service (KERIS)

13th UNESCO-APEID International Conference and World Bank-KERIS High Level Seminar on ICT in Education

PROGRAMME

15-17 November 2009, Hangzhou, People’s Republic of China

Hosted by Hangzhou Department of Education and Xiacheng People’s Government, Hangzhou
ICT Transforming Education

PROGRAMME

15-17 November 2009, Hangzhou, People’s Republic of China
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Abstracts Concurrent Sessions....................................................................................... 17

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WELCOME MESSAGE

As we approach the second decade of the 21st Century, few people would question the impact of information and communication technology (ICT) on many aspects of our lives, a point reinforced by Klaus Schwab, Executive Director of World Economic Forum, in the Global Information Technology Report 2008-2009:

“All over the world, ICT has empowered individuals with unprecedented access to information and knowledge, with important consequences in terms of providing education and access to markets, of doing business, and of social interactions, among others.”

What might be questioned could be: Are we doing enough? Are we doing it right? And how do we know?

The Regional Guidelines of Teacher Development for Pedagogy-Technology Integration published by UNESCO in 2005 drew attention to the three-way link among education, technology and development. It underlines the need to consider how knowledge can be made accessible in an information society through formal, non-formal and informal education systems so that people – the wealth of our nations – will be able to develop their potentials and in turn contribute to sustainable and equitable development of our world.

Education is the key to reach this goal. Innovative and appropriate use of ICT in education can contribute to this goal by increasing access to education and enhancing the quality of education. The challenge is to ensure equal access to all and to use technology appropriately and effectively to provide quality education and training for all.

We believe ICT can transform education; but ICT is just a tool at our disposal. More important is how we can and will use ICT to transform education. This Conference is a great opportunity for educators and practitioners from around China, around Asia and indeed around the world, to share and learn how we can do exactly that.

Let us learn together and learn well.

Gwang-jo Kim
Director
UNESCO Bangkok

Fang Maotian
Secretary-General
National Commission of the People’s Republic of China for UNESCO

Elizabeth King
Education Sector Director President
World Bank

Duk-Hoon Kwak
President
KERIS
INTRODUCTION TO THE RAJA ROY SINGH LECTURE

Beginning in 1997, the first Keynote Address at each UNESCO-APEID International Conference on Education is designated as the “Raja Roy Singh Lecture”. This is in recognition of, and to honour, the enormous contribution Dr. Raja Roy Singh had made to assisting UNESCO Member States in the Asia-Pacific region improve their education systems, through working in partnership with UNESCO Bangkok to promote educational innovation for development.

Dr. Raja Roy Singh

Dr. Raja Roy Singh joined UNESCO in 1964 and served initially as the Regional Director of Education and later as the Assistant Director-General of UNESCO in the Asia and the Pacific. He was based in Bangkok for 20 years until his retirement in 1985. Dr. Singh was deeply involved in international co-operation for the promotion of education in the Asia and the Pacific region. He was instrumental in developing the UNESCO Bangkok office into an effective institution that helped to address and resolve educational issues and problems in Member States. In his work, he was a visionary, ushering in a new donor-recipient model that became the Asia-Pacific Programme of Educational Innovation for Development (APEID).

Prior to joining UNESCO, Dr. Singh gained extensive and varied experience in the education field in India, first as a State Director of Education, and subsequently as an Educational Adviser at the Federal Ministry of Education. After his retirement, Dr. Raja Roy Singh lived in Chicago where he maintained a keen interest in the role of education for the development and betterment of humanity. He passed away quietly on 3 November 2005 at the age of 87.
SCHEDULE OF EVENTS

**Registration**

**Saturday, 14 November 2009**
15:00 – 20:00 Registration at Zhejiang International Hotel

**Sunday, 15 November 2009**
07:00 – 08:15 Registration at Zhejiang International Hotel
08:15 – 08:45 Transport to Zhejiang People's Grand Conference Hall

**Conference Programme**

**Sunday, 15 November 2009**
09:00 – 11:00 Opening Ceremony at Zhejiang People's Grand Conference Hall
09:00 – 10:15 Welcome Speeches
   Keynote Speech
   Jurin Laksanavisit, Minister of Education, Thailand
10:15 – 10:45 Break
10:45 – 11:15 Keynote Speech
   Wei Yu, Vice Chairperson of China Association of Science and Technology, People's Republic of China
11:15 – 12:00 Introduction to Raja Roy Singh Lecture
   Molly Lee, Head, APEID, UNESCO Bangkok, Thailand
Raja Roy Singh Lecture
   Educational Technology for Creativity, Collaboration and Community
   Benjamin B. Bederson, Associate Professor Computer Science, University of Maryland, USA and Co-Founder, International Children's Digital Library, USA
12:00 – 12:30 Transport to Zhejiang International Hotel
12:30 – 13:30 Lunch
13:30 – 15:00 Plenary Session I: ICT in Education Policy, Plan and Monitoring
   **Chair:** Ok-Choon Park
   • ICT in Education: Key Questions for the Future
     Gwang-jo Kim, Director, UNESCO Asia and Pacific Regional Bureau for Education, Thailand
   • Technology in Education: Transforming Teaching and Learning
     Shelly Esque, Vice President, Legal and Corporate Affairs and Director, Corporate Affairs Group, INTEL Corporation, USA
   • How Do We Know What We Know? International Updates on the Development of ICT in Education Indicators
     Mike Trucano, Senior ICT and Education Policy Specialist, the World Bank, USA
15:00 – 15:30 Break
15:30 – 17:00 Concurrent Session 1
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Room</th>
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</thead>
<tbody>
<tr>
<td>1A</td>
<td>Developing ICT in Education Policies and Master Plans</td>
<td>Gao Tai Room</td>
</tr>
<tr>
<td>1B</td>
<td>21st Century Teacher Professional Development</td>
<td>Zhang Ye Room</td>
</tr>
<tr>
<td>1C</td>
<td>Blended Learning in Practice</td>
<td>Ku Che Room</td>
</tr>
<tr>
<td>1D</td>
<td>ICT for Literacy and Life Long Learning</td>
<td>Luo Bu Bo Room</td>
</tr>
<tr>
<td>1E</td>
<td>Ensuring the Quality of ICT in Education: Certification, Standards and Assessment</td>
<td>Projection Room</td>
</tr>
<tr>
<td>1F</td>
<td>The Role of the Private Sector in Promoting ICT in Education: Part 1</td>
<td>Xi An Room</td>
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</tbody>
</table>
18:00 – 20:30 Launch of UNESCO Bangkok's ICT in Education e-Learning Modules Welcome Dinner
20:30 End of Day 1
### Monday, 16 November 2009

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:30 – 10:00</td>
<td>Plenary Session II: The Role of ICT in Teaching and Learning</td>
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<tr>
<td></td>
<td><strong>Chair:</strong> Zhu Zhiting</td>
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<tr>
<td></td>
<td><strong>ICT-supported Networks of Innovation: A Lever for Sustainable Educational Transformation</strong></td>
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<tr>
<td></td>
<td><em>Nancy Law, Professor and Head of Information Technology Studies, University of Hong Kong, SAR Hong Kong, People's Republic of China</em></td>
</tr>
<tr>
<td></td>
<td><strong>The Role of ICT in Teaching and Learning: Past, Present and Future Perfect</strong></td>
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<tr>
<td></td>
<td><em>Jonathan Anderson, Emeritus Professor, Flinders University, Australia</em></td>
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<td><strong>At the Point of Learning: Maine's One-to-One Learning Program</strong></td>
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<td></td>
<td><em>Jeff Mao, Learning Technology Policy Director, Maine Department of Education, USA</em></td>
</tr>
<tr>
<td>10:00 – 10:30</td>
<td>Break</td>
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<tr>
<td>10:30 – 12:00</td>
<td>Concurrent Session 2</td>
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<tr>
<td>Session</td>
<td>Title</td>
</tr>
<tr>
<td>2A</td>
<td>Promoting Effective School Management through ICT in Education: Lessons from Malaysia</td>
</tr>
<tr>
<td>2B</td>
<td>Preparing the Next Generation of Teachers: Challenges and Achievements</td>
</tr>
<tr>
<td>2C</td>
<td>Enhancing the Quality of Higher Education through ICT Learning</td>
</tr>
<tr>
<td>2D</td>
<td>Capitalizing on Social Networking for Collaborative Learning</td>
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<tr>
<td>2E</td>
<td>Visual Literacy and Visualization to Enhance Multimedia Teaching and Learning</td>
</tr>
<tr>
<td>2F</td>
<td>World Bank Session: Impact of ICT and Education: Views from the African Development Bank (AfDB) and South Korea</td>
</tr>
</tbody>
</table>

| 12:00 – 13:30 | Lunch                                                              |
| 13:30 – 15:00 | Plenary Session III: The Role of ICT in Higher Education, Open and Distance Learning and Open Educational Resources |
| **Chair:** Ren Youqun |                                                                       |
| The Broad Use of ICTs in the Learning Support Services: Practices and Explorations in Modern Distance Learning at Shanghai TV University | Chen Xin, Vice President, Shanghai TV University, People's Republic of China |
| E-Learning in Higher Education of Korea: Implications for e-Learning in Asian Countries | Jung Keun Lim, Vice President, Kyung Hee Cyber University, Republic of Korea |
| ICTs in Higher Education: Who Stands to Gain? | Asha Kanwar, Vice President, Commonwealth of Learning, Canada |
| 15:00 – 15:30 | Break                                                               |
| 15:30 – 17:00 | Concurrent Session 3                                               |
| Session    | Title                                                                 | Room                |
| 3A         | Implementing ICT in Education Policies: Experiences from Three Countries | Gao Tai Room        |
| 3B         | The Impact of ICT Teacher Education Programmes                      | Zhang Ye Room      |
| 3C         | Higher Education Networks and Learning Environment                   | Ku Che Room        |
| 3D         | Learning Styles and Capability: Implications for Online Learning     | Luo Bu Bo Room     |
| 3E         | The Role of the Private Sector in Promoting ICT in Education: Part 2 | Projection Room    |
| 3F         | World Bank Session: ICT and Education Around Asia: Country Profiles and Discussion | Xi An Room         |

| 17:00 | End of Day 2                                                        |
### Tuesday, 17 November 2009

#### 08:30 – 10:00  | Concurrent Session 4

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Room</th>
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</thead>
<tbody>
<tr>
<td>4A</td>
<td>ICT Competencies of Teachers</td>
<td>Gao Tai Room</td>
</tr>
<tr>
<td>4B</td>
<td>Collaborative Learning: Technologies, Tools and Networks</td>
<td>Zhang Ye Room</td>
</tr>
<tr>
<td>4C</td>
<td>Developing Online Learning Programmes and Environment</td>
<td>Ku Che Room</td>
</tr>
<tr>
<td>4D</td>
<td>Enhancing Higher Order Thinking through ICT Tools and Technologies</td>
<td>Luo Bu Bo Room</td>
</tr>
<tr>
<td>4E</td>
<td>Innovative Integration of ICT into Different Subject Areas</td>
<td>Projection Room</td>
</tr>
<tr>
<td>4F</td>
<td>World Bank Session: Trends in Monitoring and Evaluation of ICT in Education</td>
<td>Xi An Room</td>
</tr>
</tbody>
</table>

#### 10:00 – 10:30  | Break

#### 10:30 – 12:00  | Concurrent Session 5

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A</td>
<td>Modalities for Teachers' Professional Development</td>
<td>Gao Tai Room</td>
</tr>
<tr>
<td>5B</td>
<td>Blog and Wiki for Collaborative Learning</td>
<td>Zhang Ye Room</td>
</tr>
<tr>
<td>5C</td>
<td>Improving Attitudes and Motivation in Using ICT for Teaching and Learning</td>
<td>Ku Che Room</td>
</tr>
<tr>
<td>5D</td>
<td>Designing Innovative Approaches and Technologies to Reach Out to Children and Youth</td>
<td>Luo Bu Bo Room</td>
</tr>
<tr>
<td>5E</td>
<td>ICT in Education Teacher Training Resources</td>
<td>Projection Room</td>
</tr>
<tr>
<td>5F</td>
<td>Closed World Bank Session: ICT and Education in 2010 and Beyond: Moving Forward (by invitation only)</td>
<td>Xi An Room</td>
</tr>
</tbody>
</table>

#### 12:00 – 13:30  | Lunch

#### 13:30 – 15:00  | Plenary Session IV: Using ICT to Promote Non-formal Education and Life Long Learning

**Chair:** Abhimanyu Singh

- Can Distance Education Really Deliver Social Learning?
  Mary Thorpe, Professor, Institute of Educational Technology, The Open University, United Kingdom

- Using ICT to Promote Non-formal Education and Life Long Learning
  Anita Dighe, Director, Directorate of Distance Learning, India

- KNOU Mobile Learning for Innovation in Distance Learning
  Tae-Rim Lee, Professor, Korea National Open University, Republic of Korea

#### 15:00 – 15:30  | Break

#### 15:30 – 16:30  | Closing Ceremony

- Highlights from the Conference
  Molly Lee, Head, APEID, UNESCO Bangkok, Thailand

- Vote of Thanks
  Mike Trucano, Senior ICT and Education Specialist, World Bank, USA
  Young-Suhk Suh, Executive Director, KERIS, Republic of Korea

- Closing Remarks
  To be confirmed, Chinese National Commission for UNESCO, People's Republic of China

#### 16:30 – 17:00  | Collection of Certificates of Participation
## CONCURRENT SESSIONS

### Day One: 15 November 2009

#### Concurrent Session 1: 15:30 – 17:00

<table>
<thead>
<tr>
<th>1A: Developing ICT in Education Policies and Master Plans</th>
<th>Venue: Gao Tai Room</th>
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</thead>
<tbody>
<tr>
<td><strong>Chair:</strong> Ok-Choon Park</td>
<td><strong>Venue:</strong> Gao Tai Room</td>
</tr>
</tbody>
</table>
Om Sethy, Sok Tha, Javier Sola and Chantheng Heng |
| 16:00 | 1.A.2. Policy Analysis Integration of ICT in Education in Viet Nam: Translation and Implementation in Teacher Education  
Jef Peeraer, Tran Nu Mai Thy and Tran Thi Thai Ha |
| 16:30 | 1.A.3. To be confirmed |

<table>
<thead>
<tr>
<th>1B: 21st Century Teacher Professional Development</th>
<th>Venue: Zhang Ye Room</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chair:</strong> Jonathan Anderson</td>
<td><strong>Venue:</strong> Zhang Ye Room</td>
</tr>
</tbody>
</table>
| 15:30 | 1.B.1. Reboot and Retool: Toward a System of 21st Century Teacher Professional Development  
Mary Catherine Burns and Petra Bodrogi |
| 16:00 | 1.B.2. ICT Integration in Pedagogical Practices During Initial Teacher Training in Chile: Can We Expect New Teachers to Perform Well in 21st Century Classrooms?  
Mario Brun and J. Enrique Hinostroza |
Yan Wang |

<table>
<thead>
<tr>
<th>1C: Blended Learning in Practice</th>
<th>Venue: Ku Che Room</th>
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</thead>
<tbody>
<tr>
<td><strong>Chair:</strong> Lucio Sia</td>
<td><strong>Venue:</strong> Ku Che Room</td>
</tr>
</tbody>
</table>
| 15:30 | 1.C.1. Bridging the Gap between Cyber and Traditional Universities  
Daisy A. Price |
| 16:00 | 1.C.2. Developing Integrated Blended Learning in Science Education: TSOI Hybrid Learning Model  
Mun Fie Tsoi |
| 16:30 | 1.C.3. To be confirmed |

<table>
<thead>
<tr>
<th>1D: ICT Literacy and Life Long Learning</th>
<th>Venue: Luao Bu Bo Room</th>
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</thead>
<tbody>
<tr>
<td><strong>Chair:</strong> Anita Dighe</td>
<td><strong>Venue:</strong> Luao Bu Bo Room</td>
</tr>
</tbody>
</table>
| 15:30 | 1.D.1. Using ICT to Promote Literacy and Life Long Learning  
Ichiro Miyazawa |
| 16:00 | 1.D.2. Using ICT to Promote Literacy and Life Long Learning: The Malaysian Experience  
Syed Abu Bakar Syed Hassan |
| 16:30 | 1.D.3. Strategies for Large Scale Digital Content Development  
Jose Lloyd David Espiritu |

<table>
<thead>
<tr>
<th>1E: Ensuring the Quality of ICT in Education: Certification, Standards and Assessment</th>
<th>Venue: Projection Room</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chair:</strong> Nancy Law</td>
<td><strong>Venue:</strong> Projection Room</td>
</tr>
</tbody>
</table>
| 15:30 | 1.E.1. An International Computer Skills Certification to Promote Effective Management and Applications of ICT in Schools  
Tina Wu |
| 16:00 | 1.E.2. Invest, Monitor, and Measure: The Quest for the Impact of ICT in Education  
Norizan Razali |
| 16:30 | 1.E.3. Automatic Marking System for Formative Assessment  
Siwanan Boonprasert and Manit Boonprasert |
### 1F: The Role of the Private Sector in Promoting ICT in Education

**Chair:** Ashutosh Chadha  
**Venue:** Xi An Room

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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</thead>
<tbody>
<tr>
<td>15:30</td>
<td>1.F.1. Preparing the Next Generation of Teachers</td>
<td>Asariah binti Mior Shaharuddin</td>
</tr>
<tr>
<td>16:00</td>
<td>1.F.2. How to Achieve Successful Transforming from F2F to Online - A Case Study on TEO Program</td>
<td>Yan Hanbing</td>
</tr>
</tbody>
</table>

### Day Two: 16 November 2009

**Concurrent Session 2: 10:30 – 12:00**

### 2A: Promoting Effective School Management through ICT in Education: Lessons from Malaysia

**Chair:** Chen Xin  
**Venue:** Gao Tai Room

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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</thead>
<tbody>
<tr>
<td>11:00</td>
<td>2.A.2. The Use of an Open Source Software in Promoting Effective Educational Management and Leadership Training</td>
<td>Norazah Nordin</td>
</tr>
<tr>
<td>11:30</td>
<td>2.A.3. eSekolah: The Usability of School Management Application in Primary Schools from Malaysia's Perspective</td>
<td>Anuar bin Mohd Yusof and Hew Soon Hin</td>
</tr>
</tbody>
</table>

### 2B: Preparing the Next Generation of Teachers: Challenges and Achievements

**Chair:** Molly Lee  
**Venue:** Zhang Ye Room

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>10:30</td>
<td>2.B.1. Insights from UNESCO’s Next Generation of Teachers Project</td>
<td>Miao Fengchun</td>
</tr>
<tr>
<td>11:00</td>
<td>2.B.2. Information and Communication Technology Training Curriculum for Pre-service Teachers in Malaysian Public Universities: Challenges in Preparing Next Generation of Teachers</td>
<td>Balakrishnan Muniandy</td>
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</tbody>
</table>

### 2C: Enhancing the Quality of Higher Education through ICT

**Chair:** Asha Kanwar  
**Venue:** Ku Che Room

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>10:30</td>
<td>2.C.1. Pedagogy, Technology and Value in Higher Education</td>
<td>Yvonna Zou</td>
</tr>
<tr>
<td>11:00</td>
<td>2.C.2. Innovation in Borderless Distance Learning of English: The Philippines as a Global Leader</td>
<td>Robert S. Keitel</td>
</tr>
<tr>
<td>11:30</td>
<td>2.C.3. Learners’ Creative Thinking with Constructivist Web-based learning Environment Model to Enhance Creative Thinking for Higher Education Students in Thailand</td>
<td>Charuni Samat</td>
</tr>
</tbody>
</table>

### 2D: Capitalizing on Social Networking for Collaborative Learning

**Chair:** David Mathias  
**Venue:** Luao Bu Bo Room

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<tr>
<th>Time</th>
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<th>Speaker(s)</th>
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<tbody>
<tr>
<td>10:30</td>
<td>2.D.1. The Use of Online Social Networking Software among Malaysian Teenagers</td>
<td>Zarina Samsudin</td>
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<tr>
<td>Time</td>
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<tr>
<td>11:00</td>
<td>2.D.2. Exploring CSCL Environment of EU-SUPPORT Social Network towards Self-regulated Learning Behaviours, Sustainability Behaviours and Learners' Attitudes by Mixed Methods Salubsri Charoenwet and Sharifah Norhaidah Syed Idros</td>
<td></td>
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</table>

**2E: Visual Literacy and Visualization to Enhance Multimedia Teaching and Learning**

*Chair: John Collick*  
*Venue: Projection Room*

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<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>10:30</td>
<td>2.E.1. Research and Development of Innovative Teacher Education and Training Programme Models to Support the ICT as a Tool and ICT Integration into Pedagogy Fumihiko Shinohara, Shigeru Aoki and Makoto Onishi</td>
</tr>
<tr>
<td>11:00</td>
<td>2.E.2. Research on EVC-based Simulation Platform for Practical Training in TVET Lou Jianlie</td>
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</table>

**2F: World Bank Session: Impact of ICT and Education: Views from the African Development Bank (AfDB) and South Korea**

*Chair: World Bank*  
*Venue: Xi An Room*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</table>
| 10:30 – 12:00 | Speakers:  
• Alexis de Roquefeuil, Lead Knowledge Specialist, AfDB  
• Jon Seo, Senior Researcher, KERIS  
• Inn Sook Lee, Professor, Sejong University, Korea |

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**Day Two: 16 November 2009**

**Concurrent Session 3: 15:30 – 17:00**

**3A: Implementing ICT in Education Policies: Experiences from Three Countries**

*Chair: Mary Thorpe*  
*Venue: Gao Tai Room*

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<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>16:00</td>
<td>3.A.2. The Use of ICT in Teacher Training: Nepal's Experience Usha Dixit</td>
</tr>
</tbody>
</table>

**3B: The Impact of ICT Teacher Education Programmes**

*Chair: Tae Rim Lee*  
*Venue: Zhang Ye Room*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>15:30</td>
<td>3.B.1. Impact of Pre-service Teacher Training: A Case Study of Teacher Education Programme in Indonesia Obert Hoseanto, Stien Johanna Matakupan, Kartika Yulianti, Susilowaty Margono and Caesilia Ika Widanti</td>
</tr>
<tr>
<td>16:00</td>
<td>3.B.2. Impact Evaluation of the Intel(R) Teach to the Future Chong Seong Toh</td>
</tr>
</tbody>
</table>

**3C: Higher Education Networks and Learning Environment**

*Chair: Yoshinori Tabata*  
*Venue: Ku Che Room*

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<th>Time</th>
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<tbody>
<tr>
<td>15:30</td>
<td>3.C.1. Development of INHERENT Nizam</td>
</tr>
<tr>
<td>16:00</td>
<td>3.C.2. Issues and Challenges of Global Studio Network for Transforming Higher Education Byung Ro Lim and Eun Hee Shin</td>
</tr>
</tbody>
</table>
### Day Three: 17 November 2009

#### Concurrent Session 4: 08:30 – 10:00

##### 4A: ICT Competencies of Teachers

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Chair</th>
<th>Venue</th>
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</thead>
<tbody>
<tr>
<td>08:30</td>
<td>4.A.1. Educating Teachers for Leadership in the Age of the Internet</td>
<td>Byung Ro Lim</td>
<td>Gao Tai Room</td>
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<tr>
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<td>Kokila Roy Kattyal</td>
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<td>09:00</td>
<td>4.A.2. Developing a Curriculum for ICT-Based Professional Skills</td>
<td>Vuthy Va, Adam Mallord, Javier Sola and Chantra Be</td>
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<td>Yuthy Va, Adam Mallord, Javier Sola and Chantra Be</td>
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<td>09:30</td>
<td>4.A.3. An Empirical Study on Gender Disparity in ICT Competency Among Teachers in Labuan, Malaysia</td>
<td>Jetol Bolongkikit and Tamrin Amboola</td>
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##### 4B: Collaborative Learning: Technologies, Tools and Networks

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<tr>
<td>08:30</td>
<td>4.B.1. Multicultural Exchange and Distant Communication Technologies: Designing Solutions for the Global Education for Younger Generations</td>
<td>Anjlee Prakash</td>
<td>Zhang Ye Room</td>
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<td>Marcos Sadao Matzakawa, Takehiro Suzuki, Wakako Satake and Keiko Okawa</td>
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<td>09:00</td>
<td>4.B.2. An Annotation-enhanced Online Discussion Forum: Design and Usage</td>
<td>Cindy Xin, Geof Glass, Andrew Feenberg, Hong Pei Liu and Xue Rong Gou</td>
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<td>Cindy Xin, Geof Glass, Andrew Feenberg, Hong Pei Liu and Xue Rong Gou</td>
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<td>09:30</td>
<td>4.B.3. Collaborative Educational Content Development Using Google For Educators and Social Network</td>
<td>Mohd Nazri Md. Saad</td>
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### 4C: Developing Online Learning Programmes and Environment

**Chair:** Norrizan Razali  
**Venue:** Ku Che Room

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<tr>
<td>08:30</td>
<td>4.C.1. Connecting Classrooms Online</td>
<td>David Mathias</td>
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<td>09:00</td>
<td>4.C.2. The Integration of ICTs in an Open Distance Learning Environment: Lessons to be Learnt</td>
<td>Desmond Vincent Roberts</td>
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<td>09:30</td>
<td>4.C.3. eSkwela Project</td>
<td>Maria Melizza Tan</td>
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### 4D: Enhancing Higher Order Thinking through ICT for Teaching and Learning

**Chair:** Xu Xiaozhou  
**Venue:** Luao Bu Bo Room

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<tr>
<td>08:30</td>
<td>4.D.1. Fostering Higher Order Thinking through Glogster</td>
<td>Nazirah Mat Sin, Azira Ab Aziz and Peter Charles Woods</td>
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<td>09:00</td>
<td>4.D.2. The Development Training Model for High Order Abilities</td>
<td>Qiong Wang and Liu Ling</td>
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### 4E: Innovative Integration of ICT into Different Subject Areas

**Chair:** Fumihiko Shinohara  
**Venue:** Projection Room

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<td>08:30</td>
<td>4.E.1. Empowering Teachers through ICT – A Case Study</td>
<td>Louis Vernal</td>
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<td>09:00</td>
<td>4.E.2. Preparing the Next Generation of Teachers: Educating towards Literacy in Culture through ICT</td>
<td>Hyeran Yang</td>
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<td>09:30</td>
<td>4.E.3. Integrate the Digital Mindmapping into Teaching and Learning Psychology</td>
<td>Bang Khanh Nong, Tuan Pham Anh and Thy Nu Mai Tran</td>
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### 4F: World Bank Session: Trends in Monitoring and Evaluation of ICT in Education

**Chair:** World Bank  
**Venue:** Xi An Room

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<th>Time</th>
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<tr>
<td>08:30 – 10:00</td>
<td>Where are we going, and where have we been? Dr. Okchun Park, Senior Researcher at the U.S. Department of Education, looks at the past, present and future of efforts to monitor and evaluate the use of technology in education.</td>
<td>World Bank</td>
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Day Three: 17 November 2009  
Concurrent Sessions 5: 10:30 – 12:00

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<th>Session</th>
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<tr>
<td>5A</td>
<td>10:30</td>
<td>5.A.1. Effective Integration of ICT in Education: ICT Capacity Building vs. Sustained Professional Development of Teachers</td>
<td>Anjlee Prakash</td>
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<td>11:00</td>
<td>5.A.2. Mind of Quest and Self-learning Abilities for Teachers in the Computer Age</td>
<td>Yoshinori Tabata</td>
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<td>5B</td>
<td>10:30</td>
<td>5.B.1. Professional Development in the Pedagogical Use of ICT Tools in Higher Education: Blogging as a Case</td>
<td>Johnnie Wycliffe Frank Muwanga-Zake</td>
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<td>11:00</td>
<td>5.B.2. Wiki as Collaborative Learning Tools for Knowledge Sharing: Shifting the Education Landscape</td>
<td>Norhisham Mohamad Nordin</td>
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<td>11:30</td>
<td>5.B.3. Lessons Learned from the Uses of Blog Multiply.com in Teaching Processes at UPSI Malaysia</td>
<td>Supli Effendi Rahim</td>
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<td>5C</td>
<td>10:30</td>
<td>5.C.1. Enhancing Self-Regulatory Motivational Strategies through e-Portfolios</td>
<td>Sadiah Baharom</td>
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<td>11:00</td>
<td>5.C.2. Peer-reviewing Integration of ICT in Teaching Practice: Are Vietnamese Teacher Educators Ready to Learn from Each Other?</td>
<td>Nguyen Ngoc Anh, Jef Peeraer and Tran Nu Mai Thy</td>
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<td>11:30</td>
<td>5.C.3. ICT Academic Uses at University: Students Culture and Academic Performance</td>
<td>Josep M. Duart and Jonatan Castaño</td>
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<td>5D</td>
<td>10:30</td>
<td>5.D.1. Bridging the Early Childhood Education Gap: Exploring the Potential of Interactive Radio Instruction in Indonesia</td>
<td>Andrea Osborne-Smith</td>
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<td>11:00</td>
<td>5.D.2. ICT and Education</td>
<td>Sudhir Bhatnagar</td>
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<td>11:30</td>
<td>5.D.3. HARSH Exhibition on Healthy Sexuality</td>
<td>Philip Bergstrom</td>
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### 5E: ICT in Education Teacher Training Resources

**Facilitator:** Hartfried Schmid  
**Venue:** Projection Room

**10:30 – 12:00**

UNESCO has produced a set of materials that are useful to teachers for integrating ICT in their pedagogy:

- **Free Software for Educators:** help educators to produce their own ICT-based learning objects, learning materials and classroom resources. About 30 applications are included, categorized into Office & Design, Internet, Educational Tools, Audio and Video, Graphics & Animation and Utilities.

- **Multimedia Resources:** a collection of clip art, PowerPoint backgrounds, icons, pictures, music, flash applets for teachers to produce their own materials or lesson plans.

- **Web-tools for Educators:** contains about 50 web-based applications which are potentially useful for all types of education activities. Every application has its own tutorial explaining the educational potential and the technical installation.

- **Directory of ICT resources for Teaching and Learning of Science, Mathematics and Language:** contains a set of ICT-based resources for teaching and learning of science, mathematics and language for secondary-level students, including simulations, video clips, interactive learning objects for quizzes, animation, and other kinds of multimedia learning activities.

This session will provide an opportunity for a hands-on introduction to these resources. Participants must bring their own laptops to the session.

### 5F: Closed Door World Bank Session: ICT and Education in 2010 and Beyond: Moving Forward

**Chair:** World Bank  
**Venue:** Xi An Room

**10:30 – 12:00**  
By invitation only
**ABSTRACTS PLENARY SESSIONS**

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**Sunday, 17 November – Opening Ceremony**  
Zhejiang People’s Grand Conference Hall  
11:15 – 12:00

**Raja Roy Singh Lecture**  
**Educational Technology for Creativity, Collaboration and Community**  
*Benjamin B. Bederson, Associate Professor Computer Science, University of Maryland, USA and Co-Founder, International Children’s Digital Library, USA*

Technology supports education in ways that make teachers and students more efficient, and it offers easy access to the world’s information. But technology can go further by supporting both formal and informal education in many more ways. Technology offers new means for creative expression – from rich multimedia to mobile tools that let students capture the world around them and express themselves in meaningful contexts. Technology offers new means for collaboration – with their classmates and with their peers around the world to work on tasks much larger than they could ever imagine on their own. And technology offers new means for building community and developing meaningful relationships with the people, industries and government around them. In this talk, I will explore some of the rich potential that technology offers to educators and students alike.

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**Sunday, 15 November – Plenary Session I**  
**ICT in Education Policy, Plan and Monitoring**  
Silk Road Room  
13:30 – 15:00

**ICT in Education: Key Questions for the Future**  
*Gwang-jo Kim, Director, UNESCO Asia and Pacific Regional Bureau for Education, Thailand*

What is the significance of ICT in education and what should be the direction for ICT in education for the 21st Century and beyond? Questions are important to help us understand what ICT in education is all about before we can develop sound and appropriate policies that will make a positive impact on the quality and reach of education. In posing several key questions, this presentation aims to provide a framework to examine the multiple and complex aspects of ICT in education. This framework will also be instrumental in formulating UNESCO Bangkok’s vision and role for ICT in education for Asia and the Pacific.

**Technology in Education: Transforming Teaching and Learning**  
*Shelly Esque, Vice President, Legal and Corporate Affairs and Director, Corporate Affairs Group, INTEL Corporation, USA*

Our world is in transition, creating tremendous opportunity as well as competition for jobs and economic development. Countries are facing immense challenges in ensuring that their education systems are ready to prepare the next generation to take advantage of the opportunities.

We know that ICT is playing an increasingly important role in not just the way we work, but also in the way we gather, assimilate and use information to create knowledge which is increasingly becoming the backbone of modern economies. This knowledge economy brings with it the need for a vast range of complex skills in the workforce, so that knowledge workers collaborate better, communicate effectively, critically evaluate options and successfully compete on a global scale.
This in turn necessitates the need for education transformation to match the new paradigms and the effective use of ICT cannot be ignored. While there is an ever increasing use and induction of ICT into the education systems across the world, it is critical that the usage models of ICT defined by any country fall in line with not just the desired short-term educational outcomes but also align with the long-term vision that the country has set for itself.

It is thus extremely critical that as we march down the path to transform education, we know what the end goal looks like and have relevant mechanisms in place to measure the educational outcomes as well as monitor the effectiveness of our actions.

How Do We Know What We Know? International Updates on the Development of ICT in Education Indicators
Michael Trucano, Senior ICT and Education Policy Specialist, The World Bank, USA

ICTs are increasingly being used in education systems around the world. How do we know what the impact of such use is? How should we monitor and assess the use of ICTs in education? How can, should and might answers to these questions impact the policy planning process? Questions such as these are complicated in many countries by a lack of consensus on what can and/or should be measured, and how this measurement can and should take place. Lack of common sets of methodologies and indicators in this regard also hampers cross-national comparison of developments and the impact of related initiatives. To help address such challenges, many organizations have begun to develop, or propose to develop, common sets of ICT in education indicators to help guide their activities, and those of their developmental partners, in this area. This presentation will provide a review of current efforts underway by many organizations in this area, including the UNESCO Institute of Statistics, the Inter-American Development bank, the OECD, the European Union, the World Bank, and other key organizations active in this area. It will also provide a summary of some leading thinking and practices in this area from notable researchers and NGOs, and suggest possible ways forward.

Monday, 16 November – Plenary Session II
The Role of ICT in Teaching and Learning
Silk Road Room
08:30 – 10:00

ICT-supported Networks of Innovation: A Lever for Sustainable Educational Transformation
Nancy Law, Professor and Head of Information Technology Studies, University of Hong Kong, SAR Hong Kong, People's Republic of China

One of the major themes in education policy recommendations from international organizations such as UNESCO and OECD, and national policy initiatives in developing and developed countries alike, is the importance of using education to prepare its citizenry for life in the 21st century. In many cases, such policies have brought about changes in school curriculum as well as strategic plans on ICT in education. From a policy perspective, the best scenario is for ICT integration to support the desired national/regional educational transformations. International studies of ICT adoption and integration in teaching and learning across school curriculum have been able to identify transformative uses of ICT associated with outstanding exemplars of curriculum and pedagogical innovation emerging from diverse socio-economic and cultural contexts. However, many of these exemplars fail to become sustainable practices with a lasting impact on the educational scene at large. Transformative uses of ICT are difficult to sustain as they are intrinsically disruptive. They require changes in roles, practices and power relationships within different levels of the institutional hierarchy, which often challenge established values and beliefs. This presentation puts ICT-supported networks of innovation forward as a viable model for sustainable educational transformation. This is illustrated through the examination of one such international network, which comprises a nested network of multisite networks of innovation distributed over several continents.
The Role of ICT in Teaching and Learning: Past, Present and Future Perfect
Jonathan Anderson, Emeritus Professor, Flinders University, Australia

To go back in time, the first commercial computer was launched only 60 years ago and the first microcomputers appeared in schools about 30 years later. Schools up to that time could mostly be described as traditional, having changed little from the learning institutions of 100 years or so previously. But these first microcomputers were beginning to bring about gradual change in classrooms as recorded in a UNESCO publication, Developing Computer Use in Education (1986). Around this time may be considered a baseline, the beginning of the use of ICT in schools – termed the emerging stage.

To jump to the present, we see today the linking of computers across the world. The year 1996 may be remembered as the year that the Internet made its initial, far-reaching impact, on learning institutions and on much of the rest of human activity. Today’s web of computers and what we call ICT (Information and Communication Technologies) have since proliferated to such a degree that they impact on virtually every aspect of our daily lives. Our schools and teacher education institutions, the nature of learning and teaching, are witnessing a paradigm shift brought about by the use of ICT. Schools have moved well beyond the emerging stage to what are termed in another UNESCO publication the applying and infusing stages in their use and adoption of ICT.

As we look forward in time, what directions do we see for the future of ICT? Five predictions are made. The digitising of human knowledge, cloud computing, social networking, touch-screen technology, and the convergence of mobile and PC technologies are developments on the education horizon. A device yet to be invented may be given the name iCT. What will be the impact of these newer ICT on education? Will education have gone beyond the infusing stage to the transforming stage? And perhaps the most important question of all, how do we prepare the next generation of teachers for such a future? UNESCO Headquarters in Paris is about to publish Teacher Development in an E-learning Age, a book containing a four-strand learning model for teacher development that may be a potentially useful template for teacher education programs in an e-learning age and also may assist in shedding light on the transforming role of ICT on teaching and learning.

At the Point of Learning: Maine’s One-to-One Learning Program
Jeff Mao, Learning Technology Policy Director, Maine Department of Education, USA

The Maine Learning Technology Initiative is the largest and most successful 1:1 education technology program in the United States. It is arguably the world’s leading program. Unlike other programs of its kind in the United States, it is managed centrally by the State government, and is seen as both an educational program and an economic development program.

This session will provide an overview of policies and practices that have led to the success of the program as well as educational models that underly the program.

Monday, 16 November – Plenary Session III
The Role of ICT in Higher Education, Open and Distance Learning and Open Educational Resources
Silk Road Room
13:30 – 15:00

The Broad Use of ICTs in the Learning Support Services: Practices and Explorations in Modern Distance Learning at Shanghai TV University
Chen Xin, Vice President, Shanghai TV University, People’s Republic of China

ICTs have provided firm support for modern distance education, particularly offering students learning support services through various channels, which changed traditional way of teaching and learning as well as overcome space-time constraints. Shanghai TV University has formed an initial systematic and steady ICT-based student learning support system, which is undergoing consistent improvement and optimization. The
speaker will focus on introducing learning support system based on principles of modern distance education developed by Shanghai TV University with use of ICTS. The report covers the following:

- General strategies;
- Basic framework (websites, platforms, resources, services, applications);
- Main features of the system;
- Adaptation to the teaching innovation;
- Integration and application of new technologies; and
- Strategies for scientific development (enhancement of the core competitiveness).

**E-Learning in Higher Education of Korea: Implications for e-Learning in Asian Countries**

Jung Keun Lim, *Vice President, Kyung Hee Cyber University, Republic of Korea*

The purpose of this paper is to present the current trends of e-learning in higher education in Korea, giving implications for e-learning in other Asian countries.

Korea is one of the most “wired” countries in the world. This fact, in conjunction with the strong demand for education, has led Korean educational institutions to embrace e-learning systems in an effort to enhance both the quality and the breadth of the education that they offer. E-learning in higher education continues to grow at a rapid pace.

Online education, which is a rapidly growing trend particularly in higher education, can eliminate or reduce various physical, financial, and practical barriers to education. However, there is still much more work to do, both in Korea and in Asia as well, including improving and adapting available content and learning management systems to ever-changing technological advancements and trends, such as mobile technology. By continuing to improve and adapt to technological advancements, the possibilities and opportunities for e-learning will only continue to grow.

**ICTs in Higher Education: Who Stands to Gain?**

Asha Kanwar, *Vice President, Commonwealth of Learning, Canada*

ICTs have pervaded every level of education around the world. Higher Education, particularly, has seen an unprecedented growth in the use of ICTs in teaching, research and extension activities. Who has really benefitted from this phenomenal expansion? Is it the governments who are determined to increase the Age Participation Rates (APRs) in Higher Education in the next decade? Is it the teacher who is increasingly faced with the challenge of dealing with a diverse student body with its different learning preferences? Or is it the student herself—does the introduction of ICTs make students learn and perform better? Does the hype surrounding ICTs match the hope that it generates? These are some of the questions that will be addressed in this presentation with recommendations on how ICTs can be effectively harnessed to serve all three constituencies.

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**Tuesday, 17 November – Plenary Session IV**

**Using ICT to Promote Non-formal Education and Life Long Learning**

Silk Road Room

13:30 – 15:00

**Can Distance Education Really Deliver Social Learning?**

Mary Thorpe, *Professor, Institute of Educational Technology, The Open University, United Kingdom*

Distance Education is commonly seen as a form of individualised learning. The benefits of flexibility and of control by the individual of where, when and how they learn, have been stressed. However 21st century technologies and the potential of Web 2.0 all point towards social interaction rather than individuals learning separately from others. Does this mean that Distance Education is not suited to using these technologies? I will explore three areas of ICT usage by the Open University, UK, in order to take up this challenge and invite you to rethink your views on Distance Education.
First, the asynchronous communication of online conferencing is used in all Open University courses. Expertise in large scale computer mediated communication has developed since 1989 and now enables students to continue face to face tutorial discussions online and to interact with their tutorial group peers on a continuing basis. Courses oriented towards practical and work-oriented qualifications, such as degree courses in Social Work, Nursing and Youth Work for example, particularly need these social and interactive forms of sharing experience.

Second, synchronous communication can now be used to enable teams of learners to work together. The masters level course, T885 Team Engineering, requires students to submit a project which they have developed as a team. Audio Visual conferencing enables students to meet online, in real time, every week. These meetings are used by the teams to decide how to progress their project, to share documents and discuss progress. Engineers need to develop team working skills and the course enables students to reflect on the effectiveness of their team and their own role.

Social Networking tools – principally Delicious and google Reader – are being explored by tutors and course teams in order to see how they can be used to support learning and teaching. These tools are freely available over the Web, and enable students and tutors to share resources and network with others – both inside and outside the course.

These three examples will be used to demonstrate the way in which distance learning can now offer a variety of forms of social learning. This presents challenges in terms of ensuring that the possibilities of the technology are delivered in practice. The important role played by the design of activity will be emphasised.

Using ICT to Promote Non-formal Education and Life Long Learning
Anita Dighe, Director, Directorate of Distance Learning, India

We live in a world of inequalities. Although education is a basic human right, there are millions who have not been provided an opportunity for schooling and other means to become literate. Non-formal education programmes for out-of-school youth and adults have been increasingly promoted in most countries of the Asia-Pacific region for this purpose. The last decade has also seen an increasing penetration and rapid development of ICT that are fast becoming a central component of the teaching and learning environment. As a matter of fact, ICT are now regarded as an important means for promoting lifelong learning in the developed countries. Their use in developing countries too is ensuring that education has become more accessible, more flexible, while providing a range of educational opportunities. There is, however, a strong possibility that while educational applications of technology would be made available to school-based programs, due to scarce resources, the poorest and the marginalized groups will remain excluded in this kind of provisioning. The problem has been further exacerbated with the recent crisis in the global economy. The poor, developing countries have been hit the hardest by the onset of the financial crisis they had no hand in causing. In the near future, these countries are likely to have lower levels of public spending on infrastructure, health and education. While it is still too early to predict whether the recession the world is experiencing can be turned around fully, the spectre of a large section of youth and adults not having access to ICTs and to non-formal education and thereby not participating in the knowledge society, is now looming large.

KNOU Mobile Learning for Innovation in Distance Learning
Tae Rim Lee, Professor, Korea National Open University, Korea

Mobile learning (m-Learning) is novel in that it facilitates delivery of learning to the right person, at the right time, in the right place using portable electronic devices. In the near future, m-Learning will be a normal part of lifelong education and self-directed learning. In Korea, m-Learning is expanded in almost every sector of educational fields. From last year KNOU kick off the mobile learning system with KT. In this paper the mobile learning for statistics education will be introduced. e-Learning system for Statistics Education has improved the lack of two-way communication and repetition, the main weakness of the existing media, TV, radio and written text. And it has extended the opportunity of learner by operating a variety of curriculum on the basis of e-learning.

This paper describes the new paradigm of Statistics Education with the e-learning contents, Mobile learning and ubiquitous learning system for statistical education that anyone who wants to study could study anywhere,
anytime with the internet and multimedia system. The objectives of this study were to evaluate the effectiveness of e-learning courses and to propose suggestions for future improvement of e-Learning courses and suggest the future view of more advanced education system of mobile learning and ubiquitous learning system. In the future society with rapid change of educational circumstance and globalization, distance education using ICT technology will satisfy educational desires in various classes of learners. KNOU has been provided student with distance education contents through broadcasting and IT.

Mobile technologies, like mobile devices and wireless internet services, have the potential to introduce new innovations in the area of education m-learning, a new form of education using mobile internet systems and handheld devices can offer students and teachers the opportunity to interact with and gain access to educational materials, independent of time and spaces. This study suggested some considerable suggestions for preparing the future of statistics education based on Mobile and one more step advanced ubiquitous learning.

Om Sethy, Ministry of Education, Youth and Sport, Cambodia
Sok Tha, Ministry of Education, Youth and Sport, Cambodia
Javier Sola, Open Institute, Cambodia
Chantheng Heng, Open Institute, Cambodia

During 2008 and 2009 Cambodia has developed a Master Plan and an Action Plan for ICT in Education. With the help of the UNESCO Regional Bureau for ICT in Education and the Open Institute, the Cambodian Ministry of Education, Youth and Sport has followed a methodical process that has led to complete Master and Action Plans that integrate the priorities of the Ministry and coordinate with present plans of all NGOs and development partners implicated in the ICT in Education sector. In parallel with the development of the Plans, the Ministry has prepared the base for its implementation by preparing curricula, training materials, doing extensive training of ICT teachers, and creating and equipping an Office for ICT in Education which will coordinate all the efforts. The Action plan includes a detailed calendar of actions and their required budget, specifying if the budget is available or not. The Plan includes student capacity building on ICT-based professional skills, training of teachers to improve the quality of Education, and improvement of the Ministry’s internal Administration and Communication. The process followed in Cambodia is now being replicated in Bangladesh with the support of UNESCO and the WordForge Foundation.

1.A.2. Policy Analysis Integration of ICT in Education in Viet Nam: Translation and Implementation in Teacher Education

Jef Peeraer, VVOB, Viet Nam
Tran Nu Mai Thy, VVOB, Viet Nam
Tran Thi Thai Ha, Vietnamese Institute for Education Sciences, Viet Nam

In Viet Nam much is expected from ICT. In the school year 2008-2009, the Ministry of Education and Training (MOET) launched the “Year of ICT” to enhance a breakthrough in education. Integration of ICT in education is a staged process and visionary leadership is a prerequisite for success. A policy analysis is carried out to study the vision and mission on integration of ICT of the Government of Viet Nam. Relevant governmental policy documents are investigated, starting from 2000 - the year that the MOET announced the master plan for ICT in education for the period 2001-2005. A critical analysis puts rationales in perspective and questions the socio-economic rationale shaping the current policy guidelines. Exploratory analysis on the level of teacher education institutions sheds light on the discourse adopted in these institutions and assesses the translation and implementation of the developed policies in teacher education in Viet Nam. Based on the education institutions' developed technology plans, an analysis is made of the vision and mission, planned activities and implementation approach of these institutions. A gap is observed between rhetoric in policy guidelines and practice of integration of ICT in education.

1.A.3. To be confirmed
1.B.1. Reboot and Retool: Toward a System of 21st Century Teacher Professional Development
Mary Catherine Burns, Education Development Center, United States of America
Petra Bodrogini, Education Development Center Jakarta, Indonesia

Developing the next generation of teachers-teachers with critical 21st century skills and dispositions demands new models of teacher training. Counterproductively, many teacher training initiatives have attempted to cultivate 21st century outcomes utilizing 20th century instructional models-large-scale, cascade training projects grounded in outmoded concepts of how teachers learn and work. Not surprisingly, many of these programs have failed where it matters most-in the classroom.

This paper advocates “rebooting the system” – reconceptualising how we prepare and instruct teachers for teaching and learning in the 21st century. We draw upon Education Development Center’s technology-based professional development program in Indonesia as our case example. This approach has yielded highly promising results with teachers and students using available technology in classrooms in ways that supports 21st century learning.

Supported by qualitative and quantitative research, this paper will discuss a “21st century approach” to teacher training which includes a focus on “teacher-centered” professional development; collaborative teaming; school-based coaching and mentoring; building non-technical “soft skills” to support technology integration in classrooms; online instruction to balance of depth with scale; integrating ICTs in classrooms via mobile technologies (vs. computer labs) and ongoing, formative peer-and self-assessment.

1.B.2. ICT Integration in Pedagogical Practices during Initial Teacher Training in Chile: Can We Expect New Teachers to Perform Well in 21st Century Classrooms?
Mario Brun and J. Enrique Hinostroza, Universidad de la Frontera, Chile

Teachers have been recognized as key actors for the successful integration and use of ICT in education, consequently, initial teacher training is a key stage for teachers to learn how to best use ICT. In this framework, this paper presents the main results arising from a national study aimed at characterizing the availability and use of ICT in initial teacher training institutions. The study, implemented during 2009, is part of the OECD-international study “ICT in Initial Teacher Training”.

Data was collected using two instruments: surveys applied to teacher trainers, student teachers and administrators from the 45 participating institutions (which represent 70% of the total in Chile) as well as case studies to 5 institutions. Results that will be presented in this paper will focus on reporting how and to what degree teacher trainers are incorporating ICT in their teaching, and what context-related variables are influencing these results from both, quantitative and qualitative perspectives. Methods include correlational and regression analysis, as well as qualitative techniques. Results will constitute an empirical basis to sustain some proposals for further research, as well as a set of recommendations to policy-makers in order to prepare new teachers to perform in 21st century classrooms.

Yan Wang, University of Hong Kong, SAR Hong Kong, People’s Republic of China

Pursuant to the bidding of the fifth plenary session of the 15th National Congress of the Communist Party of China (CPC), universal digital literacy (ICT education for schools) was launched in 1999 in China, supported by the State Council’s Decision on Deepening Educational Reform and Promoting All-round Quality Education. The Ministry of Education decided to universalize ICT education in primary and secondary schools as a strategy to facilitate education modernization and jumpstart the development. A host of measures have been taken
to implement ICT in education including curriculum development, infrastructure and equipment, teacher training and funding mechanisms.

The policies and actions for universal digital literacy have changed education to a great extent. But have they achieved the intended goal of contributing to education modernization and industrial economy? ICT has also changed student’s learning in many ways, not only on terms of gaining knowledge, but also at the cultural and ideological levels. Do the achievements aligned with the policy goals?

The paper tries to analyse the progress of the digital literacy policy to answer these questions, focusing specifically on the intended meaning of digital literacy and the impact of ICT in education on students’ learning.

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**Sunday, 15 November - Session 1C**

**Blended Learning in Practice**

*Venue: Ku Che Room*

15:30 – 17:00

1.C.1. Bridging the Gap Between Cyber and Traditional Universities

*Daisy A. Price, Access to Education for All, United States of America*

This paper encapsulates the essence of ICT in Education. The framework of my research centres on how we can bridge the gap between cyber and traditional universities. My research spans a combination of more than a decade of studies and teaching experience, in both cyber and traditional universities, within the U.S. and abroad. Examples are gathered from community colleges and university classes that are taught with minimum use of technology; hybrid classes, which are comprised of 50% online and 50% physical classroom instruction, and classes that are taught 100% online.

My main focus for this conference will be as follows, in the particular order stated below:

- Policies and Implementation of Curricula that address pre-college and college level students
- Content in Curricula
  1. Challenges in the Cyber Universities
  2. Challenges in Traditional Universities
  3. Solutions for Improving Quality and Efficiency of Higher Education through ICT
- Preparing current and next generation of teachers. This focuses on on-going faculty development and support, as well as student success. These address "Monitoring and measuring Impact in Education"
- Making sensible choices in optimizing ICT education in the teaching and learning experience
  1. For students
  2. For faculty
  3. For non-teaching staff

1.C.2. Developing Integrated Blended Learning in Science Education: TSOI Hybrid Learning Model

*Mun Fie Tsui, National Institute of Education, Nanyang Technological University, Singapore*

Research on the nature of blended learning and its characteristics has led to a range of approaches to the practice of blended learning. As such, this paper provides an alternative practice model, the TSOI Hybrid Learning Model to develop integrated blended learning in science education. The Piagetian Science learning cycle model and the Kolb’s experiential learning cycle model are used to shape the theoretical framework of this model.

This research evidence-based model represents learning as a cognitive process in a cycle of four phases: Translating, Sculpting, Operationalizing, and Integrating. A major attribute is to support active cognitive processing in the learner for engaged inductive to deductive learning and cater to the learner’s individual learning style.
An application to develop integrated blended learning in science education is illustrated with an authentic example on understanding multimedia learning design in a blended learning environment for pre-service teachers. The design of the blended learning experiences involving participatory learning as well as asynchronous virtual collaboration such as blog and wiki is integrated and guided by this learning model. Outcomes, feedback and implications will be discussed in the context of blended learning in education.

1.C.3. To be confirmed

Sunday, 15 November - Session 1D
ICT for Literacy and Life Long Learning
Venue: Luo Bu Bo Room
15:30 – 17:00

1.D.1. Using ICT to Promote Literacy and Life Long Learning
Ichiro Miyazawa, UNESCO Islamabad, Pakistan

There are about 60 million illiterates in Pakistan. Like other countries with very low rates of literacy, the reasons for the prevailing situation in Pakistan are complex. One main reason is the difficulty of retaining literacy skills of the new literates.

To maintain the literacy skills after basic literacy courses, the new literates should have constant access to reading materials at least for three months afterwards. But for most of the new literates, reading materials are scarce and the occasions to use the acquired literacy skills are rare. Graduating the basic literacy courses, the new literates easily slip into a non-literate environment and it is extremely difficult to keep them motivated to make a conscious effort by themselves to keep up with their newly acquired literacy skills.

The project is concerned particularly with the literacy retention problem among the youth and the problem of keeping them motivated to further consolidate their literacy skills. It finds a solution in mobile phones, which have become the most desired daily means of communication among the young people. The main objective of the project is to develop a mobile-based, distance post-literacy programme where the new literates receive post-literacy materials as messages in a mobile and read and respond to them. The method is assumed to be far more effective than conventional print-material-based post-literacy programmes in keeping up the literates’ interest in literacy communication.

Syed Abu Bakar Syed Hassan, Ministry of Science, Technology and Innovation, Malaysia

Malaysia’s nationwide ICT initiative for addressing the socioeconomic development is the focal point of this presentation. The paper will discuss relevant programmes of the Multimedia Super Corridor (MSC) Malaysia, a national initiative spearheaded by the government of Malaysia to promote the national ICT industry and provide a test-bed for the global ICT industry. MSC’s role as the vanguard of ICT growth is being coordinated by an agency under the Ministry of Science, Technology and Innovation. The mega ICT initiative such as the e-Government, Smart Card, Smart School and Telehealth that have been introduced to prepare the citizens for the new various initiatives have provided opportunities for the citizens to attain the new-age literacy and life long learning opportunities. Specific samples of programmes showing outcome of literacy and life learning will be shared.

1.D.3. Strategies for Large Scale Digital Content Development
Jose Lloyd David Espiritu, De La Salle University, Philippines

This paper presents development issues on large-scale content development of 180 e-modules for out-of-school youth under the Bureau of Alternative Learning Systems (BALS). This is a banner project of the Philippine Commission on Information and Communications Technology (CICT) as part of the eSkwela Alternative Learning Program. It is the biggest content development effort by the CICT to date. Issues addressed include: (a) writing content for multimedia learning; (b) instructional strategies for out-of-school youth; (c) development of the
e-modules; (d) coordination process among instructional designers and developers; (e) implementation of e-modules; and (f) the evaluation of the effectiveness of the project. The methodology used for developing the e-modules involve: (1) creating an instructional design; (2) storyboarding and screen design; (3) scriptwriting; (4) multimedia authoring; (5) prototyping; and finally (6) implementation and testing.

Sunday, 15 November - Session 1E
Ensuring the Quality of ICT in Education: Certification, Standards and Assessment
Venue: Projection Room
15:30 – 17:00

1.E.1. An International Computer Skills Certification to Promote Effective Management and Applications of ICT in Schools
Tina Wu, ECDL Foundation, Singapore

The use of information and communication technologies has grown tremendously over the past few years, ranging from innovative teaching methodologies, automated homework and assessment tools, as well as structured database and office applications for daily administration work, etc. It is therefore critical for us to equip the teachers and students with essential computer skills, and more importantly, to ensure the level of competencies is up to the standards. This paper uses the International Computer Driving Licence (ICDL) programme as one example to analyse how a certification programme may empower the users in schools with practical computer skills and thus increase the efficiencies of use of ICT applications. It will also demonstrate how important it is to set up a measurable benchmark and comprehensive framework in the education sector, in order to promote effective management of ICT. Cases from Hong Kong, Sri Lanka, and a few other Asia Pacific countries will be presented to study the impact of implementing an ICT certification programme in a school or the whole country.

1.E.2. Invest, Monitor, and Measure: The Quest for the Impact of ICT in Education
Norrizan Razali, Multimedia Development Corporation, Malaysia

This paper highlights the collaborative efforts in monitoring and measuring the impact of ICT in education between the Malaysian Ministry of Education and the Multimedia Development Corporation (MDeC), a government agency which oversees the development of MSC Malaysia, a national ICT initiative. Three main agenda items will be addressed. First, the discussion will discuss the rationale that formed the impetus for the development of a monitoring and measuring tool, the Smart School Qualification Standards (SSQS) that has now become the tool for monitoring strategies and measuring the impact for ICT in education in Malaysian public schools. This will touch on the issues of achieving a return on investment linked to skill-based and learning outcomes and the other relevant background. Second, the paper offers a description of the SSQS and its implementation in various phases and groups of schools. In this regard, how the SSQS is used to address root causes of problems and school-based strategies to overcome such problems will be presented. Third, the paper will discuss the findings and way forward from the SSQS implementation experience. For this, the achievements at the school level and the contribution to policy decisions will be covered.

1.E.3. Automatic Marking System for Formative Assessment
Siwanan Boonprasert, Chulalongkorn University, Thailand
Manit Boonprasert, Rangsit University, Thailand

ICT has played important roles in education in improving teaching, learning, and evaluation processes. Of course, if there is an automatic marking system to help teachers grade their students’ examination paper, especially the subjective type, that tool will greatly help teachers to spend time on teaching more effectively.

At present, there is an automatic marking system for the Computer Programming course at Faculty of Engineering, Chulalongkorn University. The existing tool calculates marks on final output which is a summative evaluation. This paper is going to present the development of an automatic marking system for formative
assessment. The development is based on Halstead Theory which measures a program module’s complexity directly from source code, with emphasis on computational complexity. The tool also uses program editing sequence to reflect more accuracy in students’ assessment by collecting source code change of an individual student from beginning to the end and the tool will automatically select the best source code for assessment.

This automatic marking system will improve quality of education and students’ learning in that teachers have more time to prepare lessons and supervise students in learning process. Students will receive feedback faster which is an important factor to improve their learning.

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**Sunday, 15 November - Session 1F**

**The Role of the Private Sector in Promoting ICT in Education: Part 1**

*Venue: Xi An Room*

*15:30 – 17:00*

**1.F.1. Preparing the Next Generation of Teachers**

Asariah binti Mior Shaharuddin, *Ministry of Education, Malaysia*

As Malaysia steps forward in pursuit of its Vision 2020, access to quality education, human capital development and the educational competitiveness of Malaysian schools rank among its most important challenges. Hence, to ensure that Malaysia’s drive towards developed nation status is not derailed, the Ministry of Education (MOE) has a crucial role to play. The MOE’s efforts to prepare quality teachers are guided by the National Philosophy of Education (NPE) and the Philosophy of Teacher Education (PTE). This paper provides an in-depth view of how the MOE, through its various agencies strives to ensure a continuous supply of quality teachers to serve in the future schools of Malaysia. The paper identifies three main strategies: Implementation of a pre-service teacher education programme whose quality is assured via the internationally recognized ISO certificate, Malaysian Qualifications Framework and Malaysian Teacher Standards; active promotion of continuous professional development (CPD) for in-service teachers and leadership development to complement the pre-service and CPD programmes. Further, the MOE is continually addressing the need for effective and innovative ICT integration into teaching and learning activities in ensuring future teachers are equipped with the relevant 21st century skills. While it can be said that these strategies are successful at developing quality teachers for the future, the road ahead in preparing the next generation of teachers is still loaded with challenges. This paper identifies some of the challenges that the MOE needs to continuously monitor before concluding by highlighting broader issues and challenges.

**1.F.2. How to Achieve Successful Transforming from F2F to Online - A Case Study on TEO Program**

Yan Hanbing, *East China Normal University, People’s Republic of China*

With the positive expectation of web-based learning, many face to face (F2F) educational programs began to move to online. However, reports and anecdotal evidence and studies suggest that program satisfaction and retention rates are generally lower in online courses than that in their F2F counterparts. As a successful F2F teacher training project, what innovations were created when Intel(R) Teach Program move to online, which named as Teach Essentials Online (TEO) instead? Following the classical division of distance education, this article analyzes TEO program from two aspects – course development and learning support. From the first aspect, the innovation on platform, course content, pedagogy design and supporting material will be discussed. From the latter aspect, this article will mainly focus a pilot training in Shanghai, which especially challenged the widely-accepted time management in distance education and get a satisfied quality and retention. Lessons from other pilot trainings are concluded too. At the final part of this article, more concerns on large-scale extension are further discussed. As online learning continues to grow in both scope and complexity, we hope the experiences and lessons learned in TEO context are helpful for similar others.
Rama Kondapalli, National Assessment and Accreditation Council, India

The social need to widen access to higher education, the impact of technology on educational delivery and the versatility, flexibility and information resources ICTs confer on teaching and learning and other spheres of institutional activities has concomitant implication on the quality of Higher Education Institutions (HEIs). The National Assessment and Accreditation Council (NAAC) has customized its quality assurance processes to address the various facets and extents of ICT applications in higher education by redefining its framework and core values.

The paper discusses on how the progressive use of ICTs in pedagogy, administration, research, collaborations and institutional management resulted in a visible qualitative improvement of the Indian HEI's and the insufficient acknowledgement of the opportunities that arise at the system or institutional level, has restrained large number of HEIs from attaining minimum quality threshold levels. The paper would also elaborate on the transformation resulting out of the implementation of the various recommendations of NAAC, which is a good example of ameliorative ability of a quality assurance process.

The learning explicitly inform that integration of ICT’s in unchanged education environments and culture is unlikely to yield the rich benefits ICTs offer to the new paradigm in teaching and learning. Thus if we define higher education quality as transformation of the students and as the one that meets the goals of the learners we have to bring in a culture of quality and excellence through maximizing the benefits of ICTs and new technologies.

Monday, 16 November - Session 2A
Promoting Effective School Management through ICT in Education: Lessons from Malaysia
Venue: Gao Tai Room
10:30 – 12:00

Lucia Quek Sai Gearn, Ministry of Education, Malaysia

This paper describes the latest implementation (2009) of an on-line monitoring system of the ten thousand school libraries in the country by the Educational Resource Management sector, Educational Technology Division (ETD), Ministry of Education. This is a systematic approach taken to monitor the progress, development and management of the School Resource Centers (SRC). Beginning June 2009, a comprehensive online management system called the index-Quality of SRCs also known as iQ-PSS was deployed via the ETD intranet service line to speed up the process of collecting, validating and analyzing the data. This online management system of the SRC has made it possible for the Educational Resource Management sector to plan, coordinate, evaluate and improve the development of the School Resource Centres in terms of physical infrastructure, book collection, management system and training in line with current technology as well as the information literacy and reading programmes. This paper will also look into the issues and challenges of its implementation. Recommendations for further enhancement of the system will also be discussed in this paper.

2.A.2. The Use of an Open Source Software in Promoting Effective Educational Management and Leadership Training
Norazah Nordin, Universiti Kebangsaan Malaysia, Malaysia

This study aims to investigate the use of e-learning among future school heads in education management and leadership education. The study was conducted in two phases. The first phase focused in developing an e-learning system using open source software - Moodle. This particular phase emphasized on the processes involved in designing and developing the e-learning prototype using Moodle. The prototype of this module is called E-Headship. The second phase of this study evaluated participants' suitability in shaping and becoming
future school leaders and managers. This is done through the use of NPQH (National Professional Qualification for Headship) programme. The e-Headship prototype is included and attached to the programme. It was then evaluated in terms of e-learning content, knowledge, usage, skills and cognitive level. The purpose of this study is to expose the participants to retrieve and use the rich content via e-learning method. The participants involved were trained as future heads of schools in Malaysia. They were all trained at Institut Aminudin Baki (IAB)-an institute for training school administrators. Employing an experimental post-test design, this study analyzed participants’ respond towards the materials uploaded using the e-Headship prototype. Sixty (60) participants took part in the study. The data were analyzed using descriptive statistic focusing on reporting of the results in percentile, means, standard deviation and frequency. As it compared the results of two groups, a simple T-test was also performed. The results show that the design and development of e-Headship has succeeded in promoting teaching and learning strategies to a higher degree. It is hoped that the use of such prototype will help IAB in developing better programmes that would benefit the participants at large.

2.A.3. eSekolah: The Usability of School Management Application in Primary Schools from Malaysia’s Perspective
Anuar bin Mohd Yusof and Hew Soon Hin, Multimedia University, Malaysia

Electronic Management School which is also called as “eSekolah” aspires to transform Malaysia’s school management. The use of this ICT based management system will digitalize contents such as students’ performance, students’ target, teachers’ lesson plans and teachers’ attendance. It is developed by Tuan Haji Mohd Yusof Muda PJK. The study involved the teachers and also the management staff at ten selected primary schools in the state of Terengganu of Malaysia that use eSekolah management system. Their perceptions of the benefits and the constraints of the system mentioned were examined. The methodologies of the study consists surveys and interviews. The issues and challenges related to the system were discussed. The finding of this study will be completed at the end of this year. The study highlights the usability of the system which might be of help to the management staff, teachers and students in Malaysia.

Tuesday, 17 November - Session 2B
Preparing the Next Generation of Teachers: Challenges and Achievements
Venue: Zhang Ye Room
10:30 – 12:00

2.B.1. Insights from UNESCO’s Next Generation of Teachers Project
Miao Fengchun, UNESCO, Thailand

Recognizing that teachers are central to successful learning, UNESCO has supported the professional development of teachers for nearly 60 years. UNESCO’s Next Generation of Teachers Project is designed to assist Teacher Education Institutions in the Asia-Pacific region to prepare the next generation of teachers to judiciously use technologies for teaching and learning. The presentation will highlight the experiences gained from the project, current activities and future plans.

2.B.2. Information and Communication Technology Training Curriculum for Pre-service Teachers in Malaysian Public Universities: Challenges in Preparing Next Generation of Teachers
Balakrishnan Muniandy, Universiti Sains Malaysia, Malaysia

The purpose of this study is to examine and map out the ICT training curriculum used for training pre-service teachers in Malaysian public universities. Consequently, the curriculum is viewed in terms of its alignment and expectation to the international standards of ISTE NETSoT and UNESCO ICT-CST, national ICT in education policy, and to the current development of the field of ICT itself. A content analysis procedure using qualitative research methodology was used to collect and analyze data from documents such university ICT course
A literature review on the development of the field of ICT in education was also carried out. The findings show that there is a gap between the ICT curriculum used to train pre-service teachers in the universities with what is expected from the international standards, national ICT in education policy and the development of the field of ICT itself. This provides a dilemma on how well should we prepare the ICT training curriculum for pre-service teachers. This paper concludes by providing some of the challenges and issues faced by teacher educators in preparing and using ICT training curriculum for the next generation of teachers in the face of rising globalization.

2.B.3. Sharing an Experience: Using Peer Coaching Technique in Assisting Teachers to Integrate ICT into the Teaching and Learning Process
Termit Kaur Ranjit Singh, Universiti Sains Malaysia, Malaysia

The aim of this paper is to share an experience on efforts of researchers in assisting teachers in the state of Penang to integrate ICT in classroom teaching and learning using the peer coaching technique. The School of Educational Studies, Universiti Sains Malaysia has been involved in the UNESCO's Next Generation Teachers' Project on ICT integration in the teaching and learning process. After undergoing a series of workshops on peer coaching techniques, the team mobilised a plan on assisting teachers to integrate technology into the teaching and learning process. The main aim of the team is to increase the use of ICT in the teaching and learning process. The Interactive Whiteboard (SMARTBoard) was introduced to teachers in a few schools in the state of Penang and a survey was done to determine their perceptions of this technology. The positive results of the survey geared the team into using this tool as a start for the implementation of the peer coaching program. This paper outlines the results of the study on the perception of the teachers on using the SMARTBoard, the peer coaching plan that is in the process of implementation and the future plans of the school in assisting teachers to integrate ICT into the teaching and learning process.

Monday, 16 November - Session 2C
Enhancing the Quality of Higher Education through ICT
Venue: Ku Che Room
10:30 – 12:00

2.C.1. Pedagogy, Technology and Value in Higher Education
Yvonna Zou, Smart Technology, People’s Republic of China

While Information and Communication Technology (ICT) integration tops the agenda for innumerable global and regional organizations, meaningful discussion on its value for institutions of higher education has yet to take place. Using Everett Rogers' diffusion of innovation theory, this paper aims to encourage dialogue on the value of ICT integration in institutions of higher education. This dialogue must begin with an examination of the social and communication structures in institutions of higher education. The hierarchical structures that exist in such institutions tend to discourage the development of informal social networks and channels of communication that could speed up the ICT adoption process. Meanwhile, misalignment between an institution's and an individual's decision-making process, as well as between constructivist teaching philosophies and reality of teacher-centered classrooms, can work together to hinder ICT adoption. There are encouraging examples, however, of institutions of higher education that have discovered creative ways to use those same systems to overcome perceived barriers and open the dialogue on the value of ICT for higher education. The key, then, is to encourage dialogue about the value of ICT for higher education, in recognition of the fact that organizations are not simply shaped by technology, but can – with the necessary long-term vision and desire – take an active part in shaping that technology that serves them.
2.C.2. Innovation in Borderless Distance Learning of English: The Philippines as a Global Leader
Robert S Keitel, De La Salle University- Manila, Philippines

Open and distance learning pedagogy has enhanced educational opportunities for students as well as higher educational institutions and private educational entrepreneurs. No where is this more evident than the use of the call center technologies in the Philippines as a platform for providing a mixed distance learning programs for the acquisition of improved English language abilities.

The study reveals how emerging forces create a unique opportunity for the Philippines call center industry to capture a dominant global leadership position in borderless delivery of English educational services. The research methodology is descriptive with multiple cases. The Philippine has historical, technological and globalization resources aiding its abilities to succeed in borderless distance learning best practices.

Cases will illustrate how HEIs participate, where private educational entrepreneurs emerge, what call center technologies provide, if models emerge, what stakeholder benefits may develop and what part government plays.

The study points to the need for Philippine HEIs to further engage in academe-industry partnerships to participate and contribute to the innovation in borderless distance learning of English language acquisition.

2.C.3. Learners’ Creative Thinking with Constructivist Web-based Learning Environment Model to Enhance Creative Thinking for Higher Education Students of Thailand
Charuni Samat, Khon Kaen University, Thailand

The purpose of this research was to examine learners’ creative thinking learning with constructivist web-based learning environment model to enhance creative thinking for higher education students of Thailand. The target group consisted of 30 of the second year of Computer Education undergraduate, Faculty of Education, Khon Kaen University in Thailand. The pre-experimental design, particularly with one short case study was employed in this study. The research instruments were constructivist web-based learning environment model to enhance creative thinking for higher education students, creative thinking form and interview form. Information about the students’ creative thinking abilities was collected. Descriptive statistics and protocol analysis were employed to analyse the creative thinking test and the interview form of their creative thinking abilities.

The results revealed that: the creative thinking abilities were found both from the creative thinking form ( = 29.4 and S.D. = 2.69) that every learner passes the 70% criterion of the specific scores. The protocol analysis of the learners’ interview form found four abilities of creative thinking: (1) fluency; (2) flexibility; (3) originality; (4) elaboration.

Monday, 16 November - Session 2D
Title: Capitalizing on Social Networking for Collaborative Learning
Venue: Luo Bu Bo Room
10:30 – 12:00

2.D.1. The Use of Online Social Networking Software among Malaysian Teenagers
Zarina Samsudin, Universiti Sains Malaysia, Malaysia

There is no doubt that more and more teenagers are spending more of their time socializing and networking online. This is due to the availability of mobile devices and services at an affordable price and also the availability of online facilities. Teachers and Instructors can use this new online trend to their advantage within the boundaries of their classrooms. This paper will discuss how the current trends of online socializing and networking can benefit both students and teachers/instructors. The activities students do online can often be applicable and taken full advantage within the classroom teaching and learning environment. Teachers should be aware and be more open of using the technology and all its facilities to create a more meaningful classroom experience. An online experience that is relevant, appropriate and meaningful to students at a very
impressionable age. Thus, classroom content and activities will always stay relevant and up to date together with current ICT technology and trends.

Salubsri Charoenwe and Sharifah Norhaidah Syed Idros, Universiti Sains Malaysia, Malaysia

A student collaborative social network was established based on computer-supported collaborative learning (CSCL) platform of EU-SUPPORT network. The EU-SUPPORT network is a sub network under the Norwegian Environmental Education Network that focuses on schools to promote the quality of education for sustainable development. Participants were two hundred of secondary school students from Malaysia and Thailand. Students taking part in this project collaboratively worked on assigned online activities with the theme ‘Climate Change’ via web-based instructions. The development of the social network was monitored and social interaction amongst participants was examined using social network analysis (SNA) and content analysis (CA). Self-reported survey questionnaires were administered prior and after the activities in order to investigate sustainability behaviours, self-regulated learning behaviours and learners’ attitudes towards learning platform. The results indicated that the established student network was considered active with rather dense network. The discussion forum produced in the network was proven to be sustained with high average length of discussion thread. The questionnaire statistical analysis revealed that collaborative learning activities significantly increased self-regulated learning behaviours and sustainability behaviours of students participating in this social network while students showed positive attitudes towards learning environment.

2.D.3. Repurposing Social Networking Technologies to Encourage Pre-service Teacher Collaboration in Online Communities: A Mixed Methods Study
Michael James Moroney, University of Brunei, Brunei Darussalam

The purpose of this study was to determine the extent to which pre-service teachers were able to use social networking technology for online collaboration in a learning community. Communities of practice are at the forefront in-service teacher professional development and their usage in pre-service courses may have value also, if for no other reason than to provide opportunities for students to learn how to operate effectively online. This study used a mixed method approach that included analysis of discussion thread transcripts, summative community reports, website presence and a student survey. Findings indicate that students generally supported the concept of an online community but that they found it difficult to develop and sustain one. There were also indications that the perceived value of online collaborative learning was in many cases not able to overcome long held practices and beliefs that value competition and individual effort. Thus the introduction of online communities of practice may more easily be introduced to in-service teachers who already have working experience of collaboration and cooperation upon which they can draw or when the high stakes examination system in which students operate is replaced by one that measures the transaction of learning. Directions for further research are discussed.
Monday, 16 November - Session 2E
Visual Literacy and Visualization to Enhance Multimedia Teaching and Learning
Venue: Projection Room
10:30 – 12:00

2.E.1. Research and Development of Innovative Teacher Education and Training Programme Models to Support the ICT as a Tool and ICT Integration into Pedagogy
Fumihiko Shinohara, Tokyo Gakugei University, Japan
Shigeru Aoki, NHK Enterprise, Inc., Japan
Makoto Onishi, Aichi Shukutoku University, Japan

Current issues in modern education include (1) how to strengthen the teaching-learning in affective domain of educational objectives and (2) how to apply the teacher-centered and learner-centered approach to teaching-learning process. The first issue reminds us the potential of visual images in audio visual education and in particular the aptitude-treatment interaction (ATI), while the second leads us to the educational strategies.

On the other hand, as we all know, the latest types of personal computers, representing the ICT, are characterized by both powerful audio visual editing functions and reliable networking capabilities with higher speed and more user-friendliness in terms of several aspects of their educational uses.

This paper will present and discuss the innovative and effective application models of ICT to education and training programmes, aiming at the realization of both ICT as a tool and ICT integration into pedagogy with the appreciation of ATI and visual literacy in mind, and then ensure contribution to the quality education. The workshop programme developed and conducted in three different countries, for example, begins with two practices of editing visual images and arranging nine still pictures and eight video-clips in order with free software followed by introducing the theories of ATI and sequencing.

2.E.2. Research on EVC-Based Simulation Platform for Practical Training in TVET
Lou Jianlie, Zhejiang Technology Institute of Economy, People’s Republic of China

The Virtual Reality Technology has been applied in all aspects of work in china, such as in real estate, education, and so on. This article discusses the design of the school-oriented secondary development of the Visual Teaching for the three-dimensional virtual campus platform (EVC) in the School of Teaching and Training applications to the merits. The article is about the distinctive characteristics of using EVC on language teaching, art exhibitions, workplace simulation, computing programming, logistics and automotive maintenance process demonstrated by the conventional teaching, combined with entertainment platform with the nature of some of the modules which reflects the entertaining process of teaching. Finally, discussing about EVC in teaching which needs to improve and add the number of functional modules.

Lay Wah Lee, Universiti Sains Malaysia, Malaysia

Teaching resources for special needs such as lesson plans and learning objects are currently readily available on the Internet. However, these resources are not suitable for the Malaysian context because of language and local content. Based on this rationale, an online multimedia learning resources repository has been developed in the Malay language to serve the Malay Archipelago. This article describes the development of multimedia learning resources for special needs in Malaysia. These resources include lesson plans and pedagogically-linked multimedia learning objects which are created based on an instructional model that combines both behavioral theories of learning and the multimedia learning objects framework. Other resources in the repository include flash-generated printables which allow teachers to create their own worksheets. In addition, an article bank is available to provide explanations on the concepts related to these teaching resources. A picture gallery that is reflective of local materials has also been developed. These resources are packaged and pedagogically-linked together to form a comprehensive network of meaningful resources for in-service special educators and as an instructional tool in training of future special educators at a university. The repository is named ePKhas, and is located at: http://epkhas.ses.usm.my.
Monday, 16 November - Session 2F
World Bank Session: Impact of ICT and Education: Views from the African Development Bank (AfDB) and South Korea
Venue: Xi An Room
10:30 – 12:00

What do we know about the impact of ICT use in education? This session will present key insights and findings from two contrasting agencies focused on technology use in education: the Africa Development Bank (AfDB) and the Korea Education & Research Information Service (KERIS).

Featured presenters include Dr. Alexis de Roquefeuil, Lead Knowledge Specialist, AfDB; Dr. Jon Seo, Senior Researcher, KERIS; and Dr. Inn Sook Lee, Professor, Sejong University, Korea.

Monday, 16 November - Session 3A
Implementing ICT in Education Policies: Experiences from Three Countries
Venue: Gao Tai Room
15:30 – 17:00

3.A.1. ICT Literacy Programme: The Malaysian Experience
Ali bin Ab. Ghani, Ministry of Education, Malaysia
Sofian Azmi bin Tajul Arus, Ministry of Education, Malaysia
Hajar Mohd Nor, Ministry of Education, Malaysia

Malaysia is currently transforming its educational system, in accordance with the nation’s drive to realize Vision 2020 that calls for continued, productivity-driven growth, which will be achievable only with a technologically literate, critically thinking work force equipped to participate fully in the global economy of the 21st century. The ICT Literacy (ICTL) programme for primary schools has been implemented for Year 1 in 2005 until Year 6 in 2010. This programme is designed to lay the foundation for all students to develop their ICT capabilities in future years. Basic ICT skills are packaged in various teaching and learning modules appropriate for pupils according to their level using new educational approach, which aims at preparing the child for the logic, the concepts and the way of reasoning imposed by the use of computers and communication. A study has been conducted in 2005 involving 1,647 Year 1 pupils, 269 ICTL teachers and 172 school administrators. One of the objectives of the study was to measure the pupils learning outcomes of ICT Literacy Programme based on the literacy skills stated in the curriculum specifications. Five areas of study were defined which involved pupils learning outcomes. They are: Understanding Lab management, Recognise hardware and software Operating System (OS), Typing Activities, Voice Recording Activities and graphic Drawing Activities. Findings show that 95% of pupils has been to the computer lab, fairly good in recognizing computer hardware and operating system, able to type sentences and numbers using keyboard, but having problem in voice recording and graphic drawing activities. As a conclusion, results show that pupils undergoing ICT Literacy Programme has more or less achieved the learning objectives. Pupils like to go to the computer lab and enjoy continue learning ICT Literacy.

3.A.2. The Use of ICT in Teacher Training: Nepal’s Experience
Usha Dixit, Ministry of Education, Nepal

With the introduction of New Education System Plan (NESP) in 1971, the minimum requirements to be a primary teacher were SLC pass and teacher training. It was the need of the hour to develop the professional capacity of a large number of untrained and under SLC primary teachers in a very short period cost effectively. Alternatives were thought and analyzed. Radio-based education/training through distance mode emerged as a tool to upgrade the teachers in the remote and rural areas at a reduced cost. A feasibility study was done to determine the potential for using radio for developmental and educational purposes in Nepal. The Ministry of Education, with the technical and financial support from the USAID, launched an innovative approach -
Radio Education Teacher Training Project (RETTP) - in 1978. Though ICT includes media like audio, audio-visual, audio/ audio visual conferencing, computer conferencing, multimedia, online and offline, radio was the only chosen one to play a vital role in the field of teacher training - eventually to facilitate and promote classroom teaching learning practices.

This paper describes the RETTP and the National Centre for Education Development's capacity building programme in detail.

3.A.3. ICT-Based Education in Schools: Emerging Business Models in India
Vidyashankar Gourishankar and Prakash L. Sai, Indian Institute of Technology Chennai, India

The Government of India, as part of its 11th Five Year Plan, embarked on a federally sponsored scheme, known as “Sarva Siksha Abhiyan,” for providing school education to every child between the age of 6 and 14 years. For the FY2009, a substantial budget of US$ 7 Billion has been allocated to the novel scheme, which also aims at fostering ICT-based education in schools. Its primary objective is enhancing both access to and the quality of education. A novel feature of this ambitious program pertains to collaborating with the Indian private sector to evolve sustainable Public-Private Partnerships (PPP), not only to improve the quality of education but also to equip the students for meeting the needs of industries. This paper provides insights into the emerging business models in the context of imparting ICT-based education in Indian schools. While deliberating on the enablers of ICT-based education in developed countries, the paper explores the challenges faced by developing countries. Apart from discussing the PPP-related business opportunities in the education industry, the enabling policy guidelines of the Government of India have been outlined. The paper also highlights the strategic perspectives of the firms in the Indian education industry.

Monday, 16 November - Session 3B
Title: The Impact of ICT Teacher Education Programmes
Venue: Zhang Ye Room
15:30 – 17:00

3.B.1. Impact of Pre-service Teacher Training: A Case Study of Teacher Education Programme in Indonesia
Obert Hoseanto, Stien Johanna Mata Kupan, Kartika Yulianti, Susilowaty Margono and Caesilia Ika Widanti, Sampoerna Foundation Teacher Institute, Indonesia

Globalization and free trade in South East Asia is just around the corner, all countries are preparing themselves to face the new era along with its challenges. One of the important aspects in facing such challenges is the readiness of teachers in preparing the next generations. Many teachers in Indonesia do not have substantial training before they become teachers, while they are experts in the subject content they teach. The Sampoerna Foundation Teacher Institute (SFTI), an Indonesian philanthropy organization that focuses on developing the quality of education through teacher trainings across the archipelago, is responding to the challenge with the Teacher Education Programme (TEP), a one-year teacher training course that gives basic pedagogic skills development, teaching and learning strategies, integration of technology in the classroom, English language skills enhancement, and monitored teaching practice sessions to ensure that the student teachers meet the requirements of a 21st century teacher. Questionnaires and interviews conducted at the end of the academic year show that this training gives impact to the teachers in ways of becoming reflective practitioners, sensitive to educational issues, and starting to make a change to themselves and their environment.

3.B.2. Impact Evaluation of the Intel(R) Teach to the Future
Chong Seong Toh, Universiti Sains Malaysia, Malaysia

Intel(R) Teach to the Future is a worldwide effort to train classroom teachers how to promote project-based learning and to effectively integrate technology into instruction. Since it’s launching in 2000 in Malaysia, more than 29,000 Malaysian teachers had undergone is training program. This paper presents findings from an impact study of this program in Malaysia. The study was conducted by a team of evaluators from the Universiti
Sains Malaysia. A total of 2,095 survey forms were distributed to the teachers. The results showed that the program had opened the horizons of teachers to the rich potential of technology in the design of lessons that are motivating and support high-order thinking skills amongst students and has helped teachers to reflect on their practices, and ultimately integrate educational technology into their teaching. Additionally, more teachers from the rural schools implement their unit plan more than once compared to the teachers from urban schools. 65% of Malaysian teachers indicated that they are integrating technology in new ways upon completion of the training program. However, several weaknesses in this program were also highlighted, and the paper concludes with suggestions on how to optimize and integrate ICT skills in the teaching and learning in Malaysia schools.

3.B.3. Advancing on ICT-Based Professional Skills for Teachers
Sombath Eath and Tha Sok, Ministry of Education, Youth and Sport, Cambodia
Javier Sola and Piseth Kheng, Open Institute, Cambodia

Cambodia developed in 2003 a first course for teaching ICT to its pre-service teachers, integrating it in the official curriculum. This first program, using software in English, was implemented in a reduced number of teacher training centers that had access to computers. In 2008 it changed to teach the use of Free and Open Source software in Khmer language in these centers, but the limited infrastructure did not permit much development. In 2009 all secondary school training centers have been newly equipped with computers, and training of teachers has become widespread, extending to all primary school teacher training centers during 2009 and 2010. All teacher educators are being trained using the Intel Teach methodology (translated to Khmer), and new curricula for training pre-service teachers are being developed. These new curricula will ensure that teachers receive practical professional competences that will help them better deliver and administrate education. Meanwhile, in-service upper secondary school teachers are systematically being trained using the Intel Teach curriculum. All this work is integrated in the Master Plan for ICT in Education. The National Institute of Education has developed a strong ICT department capable of providing all the necessary training for ICT teachers who will cascade training to the schools.

Monday, 16 November - Session 3C
Higher Education Networks and Learning Environment
Venue: Ku Che Room
15:30 – 17:00

3.C.1. Development of INHERENT
Nizam, Universitas Gadjah Mada, Indonesia

Developing higher education in Indonesia as an archipelagic country with more than 17,000 island spread over 3 time zones is a very challenging task. To bridge the quality gaps of and improve access to higher education, Indonesia has developed Indonesia Higher Education & Research Network (INHERENT) as an enabling tool in 2006. Developing ICT at such scale is quite a challenge. The main backbone of the network is by fibre optic for most part of the country and satellite VPN for the remote areas where f/o infrastructure is not yet available such as Papua and Maluku. The scale free network of universities has grow rapidly from 108 institutions in 2007 to around 320 institutions in 2009, each with video teleconference facility. The network was developed for three purposes: resource sharing in teaching, research, and university management. In 2007 the national network has been bridged to GDLN Asia Pacific to become one of the biggest in country GDLN network in the world and enables every academic corner in Indonesia to access the global centre of learning and development. Through the network, collaboration in teaching and research has been flourishing. Video teleconference activities among universities in country as well as with international partners have been regularly used for teaching, seminars, discussions, and other event. The biggest number of video teleconference participants at one event was 86 sites on-line. The network is still growing and innovative usage of ICT to bridge the quality and access gaps is developing.
3.C.2. Issues and Challenges of Global Studio Network for Transforming Higher Education
Byung Ro Lim and Eun Hee Shin, Kyung Hee University, Republic of Korea

Global Studio Network (GSN) is initiated last year by Kyung Hee University in Korea. Its vision is to facilitate a better academic world and a better open global community. GSN establishes a global network of education, research, and culture by connecting renowned cities of academy and civilization using setting up Global Studios (GSs). GNS approaches globalization by creating Global Cyber Network with cutting-edge technologies that overcome the limitations of space and time, a new way of communicating global academy (intelligence) and education, culture and art.

A GS is different from a common studio in that it is an integrated unit of a production studio, a video conferencing system, an internet broadcasting system and other facilities for knowledge production, distribution, and communication. Usually a university classroom is surrounded by four-walls and cannot reach real world situation. Even a multimedia classroom hooked up with the Internet is limited to invite professionals to the classroom online, and hold an online workshop or seminar. Students in higher education institutes should be exposed to many meaningful learning experiences including meeting real world persons worldwide, tackling real problems, and developing creative ideas against common sense. A GS is one way of transforming higher education since it provides students with special lectures, collaborative projects with foreign students, discussion with professionals and students worldwide, and problem-solving experiences in local areas. A GS is connected with other GSs in major cities in the world like New York, Tokyo, Beijing, Paris, London, and so on. These GS are interconnected each other to form the GSN.

Developing GSN is a very complicated job and bears a lot issues. For the last 10 months, we found out many problems, tackled challenges from various stakeholders, and made efforts to establish a strategic plan to succeed. This paper will present the experiences and main issues that arose.

3.C.3. MYUOC, the New Open Source Platform that Provides as Many Learning Environments as Users
Eva Lestate Madro, Llorenç Valverde, Magí Almirall, Eva de Lera, Francesc Santanach and Xavi Aracil, Universitat Oberta de Catalunya, Spain

MyUOC is the new open source online learning environment from the Open University of Catalonia (UOC) that has been designed to allow students, faculty, and staff to build their own learning environment according to their needs. Its innovative framework, based on Open Knowledge Initiative (OKI) osids and buses, turns MyUOC into the first truly interoperable learning platform. Indeed, MyUOC allows institutions and users not to be limited to a set of tools or a concrete environment, providing a customized and closer to the user learning platform. MyUOC has also been designed following user centred designed methodologies, integrating the affective and social dimension to enhance engagement and satisfaction. Does faculty have different needs depending on the subject taught? Do students have a need for more flexibility? This innovative open source environment, based in standards, aims to promote and establish flexibility and interoperability among the broad educational community.

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Monday, 16 November - Session 3D
Learning Styles and Capability: Implications for Online Learning
Venue: Luo Bu Bo Room
15:30 – 17:00

3.D.1. Emotions: The Forgotten Key of Success in Online Learning
Carlos Fernandez, Universitat Oberta de Catalunya, Spain

What are the keys for success in online learning? The state of the art in e-learning would let us know about technologies, teachers' training, management, instructional design, community participation but very probably it would not focus on the impact that affective states have on learning process, students satisfaction and of
course, course success. Every time an instructional designer creates a virtual environment, unconsciously an emotional design is also being proposed. Technology and specifically ICT mediate learning, but also mediate emotions, and emotions are an inseparable part of learning.

In this paper we will show the ‘Enjoy Guidelines’, the tool that the Open University of Catalunya has developed in order to support designers in the creation of virtual learning environments that promote positive affective states such as motivation, attention, concentration... The guide consists of twelve basic design principles that can be applied in several ways for learning design and are especially useful for users that never took into account this emotional dimension.

Lolita Victorio Sicat, Tarlac State University, Philippines

On-line system is a teaching approach that uses the ICT in teaching students on a common scheduled time. However, the approach may lack the human touch and emotion as an effect of distance. What difference thus this system makes compared with face-to-face class interaction in cognition? This study analyzed how students of varied learning capabilities learned thru the on-line system. Using case analysis, 3 groups of students, categorized as good, average, and poor (based on their previous grades and performance in College Algebra), were monitored in statistics subject in one Higher Education Institution in Tarlac city, where some classes were held via on-line system facilitated by modules. Improvement between pre-test and post-test was measured using Wilcoxon sign-rank test. Results revealed that good students learned well at their own phase because of self motivation; average students were catching up using the modules; and poor students hardly learned because they felt they needed assistance. The poor students’ lack of self confidence and negative attitude locked their minds to welcome new knowledge using a new approach (mean performance decreased by 0.33 in the post-test). Focused on the poor group, it was recommended that consultation and remedial periods be scheduled.


Monday, 16 November - Session 3E
The Role of the Private Sector in Promoting ICT in Education: Part 2
Venue: Projection Room
15:30 – 17:00

3.E.1. Student Motivation, ICT and the Future of Learning
John Guy Collick, Promethean, United Kingdom

Student motivation is increasingly an issue in education throughout the world. Dated teaching methods and poorly resourced classrooms lead to students disengaging from the learning process and failing to attain their full potential. The problem is compounded when pupils have access to media-rich environments outside school via the internet, in contrast to their experiences inside class. But is ICT the answer to student disaffection? Can we motivate pupils by replicating their experience of media-rich cyberspace in lessons? This paper examines the nature of student motivation in the context of ICT. Using the latest discoveries in neuroscience it argues that motivation is a problem linked to emotional responses to learning. It examines the way in which different ICT learning strategies can support and enhance student’s emotional well-being in class, thereby turning them into more confident and motivated learners. It specifically looks at the role of Learner Response Systems and how this new technology can be used by students to create personal learning spaces. As well as discussing the broader implications for the development of ICT in education, it also suggests specific learning strategies using ICT that teachers can implement in class to improve student engagement.
3.E.2. Interactive Teaching and Learning with Low-cost Interactive Smart Boards
Do Huy Thinh, Vo Tan Dung and Dinh Gia Bao, SEAMEO RETRAC

Interactive Smart Boards (ISB) create a range of teaching and learning options for both students and teachers. ISBs offer a powerful facility for integrating media elements into teaching to enhance the content and support collaborative learning. Studies have found ISBs to be highly motivating and learner-centered when integrated innovatively. The biggest disadvantage is that ISBs are still too expensive to be widely used.

This paper aims to explore the utility and applicability of ISBs in the context of teaching and learning in Vietnam. The paper will present how to build an ISB at an affordable cost and how teachers can make effective use of ISBs to teach interactively. An account of the softwares which can support interactive teaching with ISBs will also be included. 

Shawn Stockford and Donna Wright, Cisco Networking Academy, United States of America

This paper reports on a study of the growth in networked readiness for developing countries since 2006, and its relationship with the nations’ level of adoption and participation in the Cisco Networking Academy, a program designed for learners of foundational networking skills taught by instructors in over 10,000 educational institutions across over 140 countries. Linear growth models were specified to capture the overlapping processes of countries’ growth in the World Economic Forum’s Network Readiness Index (NRI) scores from 2006-2007 through 2008-2009, and their involvement in the Cisco Networking Academy from 2005 through 2007. Results suggest that growth in Networking Academy student participation was significantly related to subsequent growth in networked readiness for developing nations. NRI scores have been a consistent, annual measure of ICT readiness for over 120 countries since the 2006-2007 Global Information Technology Report, and have been closely linked with other indicators of nations’ technological and economic development. Involvement in Cisco Networking Academies could be considered an indicator of a nation’s overall networking skill capacity in its population, or its propensity to invest in technology education. Findings underscore the importance of technology education as a driving force in nations’ overall ICT maturation.

Monday, 16 November - Session 3F
World Bank Session: ICT and Education around Asia: Country Profiles and Discussions
Venue: Xi An Room
15:30 – 17:00

How are different countries throughout Asia approaching the use of ICTs in the education sector? Government officials and policymakers from across the region will provide insights into key activities and trends from Cambodia, China, Indonesia, Malaysia, Lao PDR, Palau, Mongolia, and Vietnam.

Tuesday, 17 November - Session 4A
ICT Competencies of Teachers
Venue: Gao Tai Room
08:30 – 10:00

4.A.1. Educating Teachers for Leadership in the Age of the Internet
Kokila Roy Katyal, University of Hong Kong, SAR Hong Kong, People’s Republic of China

There is very little argument that one of the major developments to have impacted in schools in the past decade is the rapid and world-wide development of information and communication technologies (ICT), particularly the Internet. In Hong Kong, reforms in the ICT teacher training policy and the fact that Hong Kong is a ‘wired’
city has resulted in pre-service teachers being well versed in the technical competencies of computer usage and its pedagogical manifestations. However, there has been scant attention paid to the fact that students are actively engaged in large-scale autonomous, teacher-less learning via the Internet. In this paper, I argue that for teachers to be leaders in contemporary classrooms, teacher education programmes need to focus more on the deeper and wider implications of ICT and the Internet in education than has hitherto been the practice.

4.A.2. Developing a Curriculum for ICT-Based Professional Skills

Vuthy Va, Ministry of Education, Youth and Sport, Cambodia
Adam Mallord, Volunteer Services Overseas, Cambodia
Javier Sola, Open Institute, Cambodia
Chantra Be, Open Institute, Cambodia

The policy for curriculum development (2005-2009) of the MoEYS requires the creation of several optional courses for upper secondary studies. In implementation of this policy, a course on ICT was designed for students in grades 11 and 12. The Department of Curriculum Development of the MoEYS, with the support of VSO and the Open Institute (an NGO), took a path of preparing a curriculum that develops complete professional competencies, including communication, thinking and technical skills. Using the results of recent research on the main skills that employers expect from future employees, a list of desirable competencies was developed; together with a list of technical skills that was important to develop (it was, after all, an ICT course). The effort has led to a set of 30 lessons (a 120 hour course) that focus on communication skills and helping students gain confidence. Students are taught to apply critical-thinking and technical skills of increasing complexity in each lesson, facing situations that simulate a work environment. Each lesson has its own assessment mechanisms, as well as recommended exercises. The curriculum assumes a student-centered and self-learning approach, which must take place through working groups.

4.A.3. An Empirical Study on Gender Disparity in ICT Competency Among Teachers in Labuan, Malaysia

Jetol Bolongkikit and Tamrin Amboala, University Malaysia Sabah, Malaysia

In very short time, ICT has become a must-have tool in school today due to its usefulness. Because of that, the government has spent much resource to upgrade the ICT infrastructure in many schools both in primary and secondary schools. A lot of money has been spent to train teachers as well. With this large investment, the government is hoping that ICT is fully utilized in schools. However, ICT facilities can only be fully used if teachers are competent. The purpose of this study was to assess the level of ICT competency among teachers in Labuan. In particular, this study examined if differences exist between females and males in terms of nine components (MS WORD, MS POWER POINT, MS EXCEL, MS ACCESS, WWW, E-MAIL, OPERATING SYSTEM, MULTIMEDIA, and VIRTUAL CLASS application) related to ICT.

A total of 300 teachers participated in this study. Out of 300 set of questionnaires distributed, 280 were returned and only 256 set of questionnaires were useful. The results of the study show that there exists a small gap between females and males teachers in Labuan Island. In some application such as MS WORD, MS POWER POINT, MS EXCEL, it was found that female teachers were more competent compared to male teachers. In contrast, male teachers are more capable in MS ACCESS, WWW, E-MAIL, OPERATING SYSTEM, MULTIMEDIA, and VIRTUAL CLASS application than female teachers. The various possible reasons attributed to these result will be discussed.

Tuesday, 17 November - Session 4B
Collaborative Learning: Technologies, Tools and Networks
Venue: Zhang Ye Room
08:30 – 10:00


Marcos Sadao Maekawa, Takehiro Suzuki, Wakako Satake and Keiko Okawa, Graduate School of Media Design, Keio University, Japan
In the morning of July 22, more than 400 students from 13 different locations in Asia participated in the Global Kids Eclipse 2009 event and could share an unique experience: the longest total solar eclipse of this century and a multicultural exchange opportunity. The program was designed with two main objectives: promote science and make the participants feeling global. This event provided a common virtual space where the students—mainly from 6th grade—could see the eclipse images from remote sites and also participate in other real-time interaction, such as quizzes and drawing presentations. The participants were originally from 8 countries with different backgrounds and were mainly facilitated by local universities. They were connected through a broadband and stable network platform and could interact with others using advanced technology of distant communication. This paper shows how this program was developed and how it can be a key to bring up young students' interests about multicultural exchange and other related fields of study.

4.B.2. An Annotation-Enhanced Online Discussion Forum: Design and Usage
Cindy Xin, Simon Fraser University, Canada
Geof Glass, Simon Fraser University, Canada
Andrew Feenberg, Simon Fraser University, Canada
Hong Pei Liu, Beijing University of Posts and Telecommunications
Xue Rong Gou, Beijing University of Posts and Telecommunications

Our research aims to improve online discussion forums. We focus on aiding the retrieval of archival material, helping participants build upon one another’s ideas, and encouraging participants to write “weaving” messages that connect ideas and summarize the discourse. We have developed Marginalia, a Web 2.0 free and open source technology that adds the ability to highlight and create marginal notes in discussion forums in a popular free and open source course management system. These annotations can be aggregated, sorted, and filtered. Annotations can be kept private or shared. Preliminary studies of this software found a number of uses, some of them unexpected. Marginal notes beside the text they comment on create a sense of temporal and spatial immediacy. Participants use the margin for chatting and discussing among themselves, creating a second layer of conversation. This appears to draw students in, and the background discourse is often folded back into the main discussion. As students review their own notes, the focus of discussion extends to include earlier comments and ideas.

4.B.3. Collaborative Educational Content Development Using Google for Educators and Social Network
Mohd Nazri bin Md. Saad, Universiti Pendidikan Sultan Idris, Malaysia

The evolution of the Internet has changed the way people or individual communicates. It has created a global social network, where everyone is connected, either directly or indirectly, to each other, especially in exchanging, sharing and collaborating information. The impact can also be seen in teaching and learning (T&L) environment. This paper describes the integration of online T&L in the classroom which creates a self pace learning for the students, changing how they communicate with peers, teachers and experts throughout their learning process. Google has been popular since it was introduced as a forefront intelligent search engine. Today, Google has launched a powerful learning tools, known as Google for Educators. For this research, we selected a few tools - Google Docs, Google Map, Picasa, Blogger - for the purpose of creating collaborative content schools open repository and collaborative social network among students, teachers, experts from Universiti Pendidikan Sultan Idris (UPSI) and Alumni Fakulti Teknologi Maklumat & Komunikasi (FTMK). Alongside with the tools mentioned above, we also merge those tools with Wikipedia and Twitter. A hundred schools from Larut Matang and Selama District has participated in this research. From each school, three (3) students and one (1) teacher will collaboratively produce a info package that consists of articles, presentations, news, forums etc, on any school’s subject, using the selected tools from Google for Educators, and it will be published in http://anakperak.upsi.edu.my as a web-based open repository centre.
**Tuesday, 17 November - Session 4C**  
**Developing Online Learning Programmes and Environment**

*Venue: Ku Che Room*  
*08:30 – 10:00*

### 4.C.1. Connecting Classrooms Online  
**David Mathias, British Council, Thailand**

The Connecting Classrooms Programme is the British Council’s flag-ship international school partnerships project which aims to create sustainable, mutually beneficial partnerships between schools and school systems in the UK and all regions of the world. Through these partnerships, the programme develops trust and understanding between young people in different societies, creating a safer and more connected world for the future. A dedicated online community facilitated and supported by British Council staff experienced in each local country’s educational context and the development of an Ambassadors support network through face-to-face training and workshops will empower schools to build on and develop new and long-lasting international school partnerships.

CCO will work with 5 distinct and uniquely different regions of the world, including Central, South and East Asia, with each country involved presenting unique opportunities and challenges. Accessibility for face-to-face interaction or provision for the use of ICT as a communication and learning tool will vary dramatically from country to country. This will in turn present challenges in ensuring overseas’ schools can communicate with peers in other countries and participate in on-going joint curriculum projects. The CCO programme will explore innovative ways of ensuring this happens, through the training of teachers to use the Web 2.0 technology, Netbooks, Smartphones, SMS, or whatever means fits their contextual needs.

This presentation will introduce CCO to participants and work hands-on with them to explore some of the above technologies, as well as enable participants to find out more about British Council Connecting Classrooms and how they can get involved in international partnerships with schools overseas.

### 4.C.2. The Integration of ICTs in an Open Distance Learning Environment: Lesson to Be Learned  
**Desmond Vincent Roberts, South Africa**

The distance learning experience is often characterised by loneliness and alienation due to the communication challenge and a general lack of commitment to support learners. Like most other higher education institutions, whether distance learning or other, the University of South Africa (UNISA) was facing the challenge of employing new information communication technologies (ICTs) to support or deliver distance education in an innovative way. In his 1998 paper, Otto Peters criticised UNISA for the low value placed on structured distance education courses, the lack of student support and the dominance of texts over other available media and technologies. Japie Heydenrych the coordinator of online development at UNISA’s Cluster for Online Learning Environments states that it is their commitment to establish environments where everybody involved in the learning experience can communicate freely and share all available resources with one another. To realise that goal they intend to continuously strive to foster awareness, change systems and adapt teaching practice - “we have to make the technology work, in our own context” they claim. Heydenrych goes on to admit that they realise that the task would be rather complex as they have to deal with substantial changes in society, learner needs, curricula and delivery, organisational management, production processes and teaching approaches.

This paper examines some of the ICTs implemented by UNISA and analyses participation rates of different groups/students. The paper concludes that there needs to be very clear understanding of student needs and their environments, before ICTs are put in front of them.

### 4.C.3. eSkwela Project  
**Maria Melizza Tan, Commission on Information and Communications Technology, Philippines**

The eSkwela Project provides ICT-enhanced educational opportunities for the country’s out-of-school youth and adults. Under this project, community-based e-Learning Centers or eSkwelas are being established across
the country where ICT-supported alternative education programs are taking place. With the use of relevant interactive e-learning materials, blended and collaborative modes of instruction, and performance-based assessment in a problem/project-based learning environment, the program seeks to bridge the widening digital divide and social chasms between those who are educated and those who are not. Under a multi-stakeholder approach, the communities are expected to participate intensively in the project by setting-up, managing, and financing the center’s operations as well as providing support for community-based projects. The presentation will discuss the challenges, successes, constraints, and opportunities experienced by the team in advocating/promoting, implementing, and sustaining the Project.

Tuesday, 17 November - Session 4D
Enhancing Higher Order Thinking through ICT Tools and Technologies
Venue: Luo Bu Bo Room
08:30 – 10:00

4.D.1. Fostering Higher Order Thinking through Glogster
Nazirah Mat Sin, Azira Ab. Aziz and Peter Charles Woods, Multimedia University, Malaysia

ICT and education are undivided particularly in higher institutions. Lecturers are encouraged in making education and technology more engaging for students, while at the same time being more effective in fostering higher order thinking skills for students. Adopting a case study approach and using Bloom Taxonomy as an initial framework, this paper describes a small-scale ongoing study of Glogster as a tool for promoting higher-order thinking. Glogster is one of the latest web 2.0 tools also known as a multimedia online poster creation tool. In this study, Glogster was used to assess students understanding of Gestalt Laws. Students were asked to create posters about themselves using the Gestalt Laws that had been taught during a lecture and to produce a short report of how they design the posters using the theory. The produced posters were presented to the same students and a Peer-Evaluation Rubric was used by these students to evaluate their peers' posters. Interview sessions were then conducted to seek whether Glogster could enhance students understanding on Gestalt theory and to confirm higher order thinking do occur during the process of producing the poster and writing the report. Findings from this study are discussed and reported in the paper.

4.D.2. The Development Training Model for High-Order Abilities
Qiong Wang, Peking University, People's Republic of China
Liu Ling, Peking University, People's Republic of China

The development training design model arose for avoiding the inefficiency of lecture training method. The key point of this model is let the training designer, the facilitator and the trainee to collaboratively create the training materials at each training session. The training content development procedure is continued until the end of one training session. In other words, the students get insights not only from the training materials, but also from the facilitator guidelines and classroom discussions. The students’ comments from one session will be integrated into the facilitator handbook for next training session. So the training material is developed in one session and evolved from sessions to sessions. This model is very useful for training higher level cognitive abilities, such as judgement, evaluation and comprehensive understanding. We used this model with case study method to design the middle level e-learning course for the nationwide teacher educational technology training program and receive high appreciation from experiment teachers.

Noel Juan Petero, Tarlac College of Agriculture, Philippines

This study of developing and validating computer-based lectures on Problem Solving in Mathematics was undertaken especially for the benefit of Bachelor of Elementary Education (BEED) teachers and students. The research and development method was used in this study with the questionnaire as the main data-gathering tool. The topics included in the computer-based lectures were adapted from the syllabus/outline suggested by
CHED with some modifications as agreed upon by the Tarlac College of Agriculture Mathematics instructors/ professors. The development of the computer-based lectures underwent four stages, namely: 1) preliminary preparations, 2) development stage, 3) evaluation stage, and 4) revision and improvement stage. The final version of the lectures had been based on the results of the recommendations, comments and suggestions from the faculty evaluators, computer experts and the student respondents. This paper presents the findings and recommendations.

Tuesday, 17 November - Session 4E
Innovative Integration of ICT into Different Subject Areas
Venue: Projection Room
08:30 – 10:00

4.E.1. Empowering Teachers through ICT – A Case Study
Louis Vernal, Goa University, India

The Goa Vidyaprasarak Mandal’s College of Education at Ponda has over the last 5 years attempted to integrate ICT at its pre-service and in-service teachers’ programmes, beginning with the face-to-face and gradually moving also into the on-line mode. In collaboration with Intel Corporation, the College integrated the various components of ICT into the teacher education curriculum in 5 phases. Difficulties were overcome in innovative ways. This paper will discuss the details of the College’s efforts and highlight several actions plans for the future.

4.E.2. Educating Towards Literacy in Culture through ICT
Hyeran Yang, Asia-Pacific Centre of Education for International Understanding, Republic of Korea

In the midst of drastic process of globalization and technological innovation, teacher’s role is no longer confined to give facts but most importantly to cultivate perspectives for critical thinking and create knowledge towards an equal and sustainable society. Facing such a challenge, APCEIU has been attempting various modes of activity in order to re-focus its professional and material development programmes for teachers and teacher educators. Among them is the adoption of ‘cultural literacy’ and ‘ICT use’ as the main carrier of quality teacher education in terms of themes and methodology.

In order to strengthen the component of local ‘cultural characteristics’ our training workshops began to tackle sharing and reviewing local/regional cultural facts and understandings through local textbook exhibitions. A ‘textbook forum’ has been devised to identify the status of current presentations of local cultures within local textbooks and to enhance EIU as the way to contribute to reorienting local textbook development policy towards enhancing genuine multicultural perspectives. Our current learning material development is orienting ICT use as a tool for enhancing cultural literacy and learner centeredness. Our presentation is to show how the above two priorities jointly contribute to broadening and deepening perspectives of future teachers on diversity and their roles in the classroom.

4.E.3. Integrate the Digital Mindmapping into Teaching and Learning Psychology
Bang Khanh Nong, Thai Nguyen Teacher Training Institute, Viet Nam
Tuan Pham Anh, Nghe An Teacher Training Institute, Viet Nam
Thy Nu Mai Tran, VVOB, Viet Nam

Directive no 55/2008/CT-BGDDT of the Ministry of Education (MOET) of Viet Nam asserts that it is encouraged to “integrate ICT into different subjects effectively and creatively”. This study addresses the question whether the use of ‘Digital Mindmapping’ as a tool in teaching Psychology could improve the result of student’s study achievements and whether students perceive ‘Digital Mindmapping’ as an effective tool for brainstorming, group discussion and for individual study planning. For the study, two groups of first year students of Thai Nguyen Teacher Training Institute, Viet Nam, are selected: an experimental group who is taught with and introduced to ‘Digital Mindmapping’, and a control group who is taught without the tool. Students are given an achievement test before and after a series of lessons taught. A self-report questionnaire is used to assess
student's perceptions of the usefulness of 'Digital Mindmapping'. After measuring validity of the collected data descriptive statistics compare both groups. The findings show that students of the experimental group have improved study achievements. Moreover, the findings also identify 'Digital Mindmapping' as an effective tool for brainstorming, group discussion and study planning. Further research should be carried out to assess the impact of the study: do the students in the experimental group continue using the Mindmapping in their learning?

**Tuesday, 17 November - Session 4F**  
**World Bank Session: Trends in Monitoring and Evaluation of ICT in Education**  
Venue: Xi An Room  
08:30 – 10:00

Where are we going, and where have we been? Dr. Okchun Park, Senior Researcher at the U.S. Department of Education, looks at the past, present and future of efforts to monitor and evaluate the use of technology in education.

**Monday, 16 November - Session 5A**  
**Modalities for Teachers’ Professional Development**  
Venue: Gao Tai Room  
10:30 – 12:00

5.A.1. Effective Integration of ICT in Education: ICT Capacity Building vs. Sustained Professional Development of Teachers  
Anjlee Prakash, *Learning Links Foundation, India*

The Indian sub-continent has made significant progress in education since the introduction of national education policy (1986) in areas related to education access, retention and overall education quality improvement. Since 2005, the education system is focusing on 21st century education and has aligned educational objectives and outcomes with success of the nation in global knowledge economy. Providing professional development to a large number of diverse teacher populations, varying in skills and competencies has always been a challenging task for education policy makers and implementers in India, especially in re-molding teachers' thinking from traditional teaching practices to student centered pedagogy and developing skills that involve the effective usage of Information Communication Technology (ICT) tools. In the recent past there is great emphasis & investment by the state and federal government for ICT in education implementation. However, the various ICT in education initiatives do not comprehensively address the preparedness of teachers for 21st century education and ICT integration. This paper reviews the various models of ICT capacity building in context of fulfilling the actual need of in-service and pre-service teachers and identifies the gaps and addresses the challenges. The paper also discusses levels of ICT capacity building; from basic ICT literacy to advanced online and 1:1 learning and suggests effective scale models and draws recommendations for sustained professional development of teachers for catering to next generation of learners.

5.A.2. Mind of Quest and Self-Learning Abilities for Teachers in the Computer Age  
Yoshinori Tabata, *Hiroshima University, Japan*

Computers and high-speed internet have been spreading very fast and an environment that children can access to internet both at school and at home are growing. In the computer age, what are expected for teachers? Are they expected to manipulate computers like a technician or a programmer? Are they expected to develop wonderful original teaching materials? Does computer replace teachers? What will be the effective use of ICT in education and what will be the role of teachers?
ICT is efficient and effective in collecting information for both teachers and students. The challenge is how to utilize it in education to develop important abilities and skills such as critical thinking abilities, problem-solving abilities, and so on. What kinds of attitudes and abilities are required for teachers to develop those abilities of children? I would like to suggest the “mind of quest” for it. In an increasing number of countries, the level of teacher education is moving to the master’s degree level. The reason for it seems that 4-year is not enough to prepare teachers with ever increasing knowledge and skills. But, I would like to suggest the graduate school for another reason. Graduate school is the place to learn through researching and students are expected to develop research skills as well as the mind of quest. However, in some countries, research experiences for bachelor's degree and even master's degree in education is reduced and I would like to warn to this trend.

5.A.3. What Makes Teachers’ ICT-Supported Resource Centres Effective, Affordable and Sustainable?
Bernadette Robinson, UNESCO Centre for Comparative Education Research, University of Nottingham, United Kingdom

One possible application of ICT in schools is for teachers’ professional development. The need for teachers to continue their professional learning throughout their working lives is now widely acknowledged but the major problem lies in how to provide this. Research has shown that occasional, disconnected, out-of-school training events provide an ineffective and expensive form of in-service teacher education as well as disadvantaging rural teachers. However, the use of ICT provides new opportunities for re-structuring and re-locating teachers’ in-service professional development, especially for teachers in rural and remote schools.

One way of using ICT for teachers’ professional development is through school-based resource centres. This paper reports research on such centres in rural China (Gansu Province). It focuses particularly on issues of effectiveness, costs and sustainability. The findings are based on quantitative and qualitative data gathered from 680 teachers’ learning resource centres (TLRCs) which were used by around 100,000 teachers and head teachers. The research was carried out during the European Union-China Gansu Education Project (2002-2007) and is still ongoing in 2009 in order to investigate issues in long-term sustainability.

Tuesday, 17 November - Session 5B
Blog and Wiki for Collaborative Learning
Venue: Zhang Ye Room
10:30 – 12:00

5.B.1. Professional Development in the Pedagogical Use of ICT Tools in Higher Education: Blogging as a Case
Johnnie Wycliffe Frank Muwanga-Zake, University of New England, Australia

An increase in the cost of on-campus higher education and of digital citizens, a desire to study while working, as well as a need to access and to deliver some courses at a distance, have led to a rise in the number of off-campus students. This has pressurised higher education to adopt Information and Communications Technology (ICT) in their pedagogy, synonymously referred to as eLearning.

However, a case study in 2008 involving 61 staff shows that 67% do not have blogs, and of these, less than 40% of staff has basic technical skills. 82% believe they do not have to use blogs for teaching, while 23% use blogs mainly to communicate information. With 42% of staff not sure about the potential of blogs to improve pedagogy, staff generally showed no interest in blogging. Interest among staff to use ICT and specifically blogs in their pedagogy would be fermented upon exemplars of concrete successful pedagogical use of blogs, which simultaneously makes their work easier.

Although there is evidence of successful pedagogical use of blogs in higher education, questions about their specific purpose across the curriculum require further investigation. Research should moreover investigate the processes of making choices of ICT tools against modernist progressivism, dubbed ‘cutting edge’ technology’. Student preferences have also to be researched and be matched with ICT uses in higher education. These challenges are more pertinent for a school of education, which has to model practice for teacher trainees.
This paper proposes models for life-long Professional Development (PD) in ICT skills and pedagogical uses, with clear roles and training programmes for the executive, lecturers, technical staff, and administrative assistants, bearing in mind that lecturers and the executive are not compelled to use ICT and that work agreements might restrict the implementation of certain PD models.

5.B.2. Wiki as Collaborative Learning Tools for Knowledge Sharing: Shifting the Education Landscape
Norhisham Mohamad Nordin, University of Western Australia, Australia

Wikis support collaborative learning in a classroom environment. Nevertheless, the argument of wikis as an unstructured medium for learning and issues concerning security and privacy matters are overshadowed by the full potential benefit it brings to education fields. Educational wikis is very different from wiki that we used to know in the biggest online encyclopaedia; wikipedia.org. The implementation of wikis in education relies on its pedagogy approach, hence known as wikis pedagogy. The study conducted in Malaysia schools provides the case study for educational wikis to be deployed in school. The approach taken in the study using design experiments managed to formulate a pedagogy for effective use of wikis in education. Findings of the study may provide a new perspective in understanding the current practice of teaching and learning in school. The essence of socialization of learning facilitate by using wikis lead to collaborative knowledge building among students that they are not learning the knowledge but they are involved in the learning process which makes them a distinguish learners.

5.B.3. Lessons Learned from the Uses of Blog Multiply.com in Teaching Processes at UPSI Malaysia
Supli Effendi Rahim, Universiti Pendidikan Sultan Idris, Malaysia

The use of variations of methods in teaching processes is nowadays highly demanded in many parts of the world. UPSI, a well known University in Education in Malaysia, has long applied an ICT system as part of teaching processes alongside the traditional one. There, ICT system is known as term of MYGURU portal. The use of this website has given a good support to the University staffs and students in their activities including teaching processes. However, the use of MYGURU is having limitations. One of which is that the website does not have the facilities to enable users to have two-way communications. Since 2008, the author has developed teaching processes using a blog www.multiply.com for several subjects in the departments of Living Skills (now Department of Technical and vocational education) FSM and that of Biology at the Faculty of Science and Technology UPSI. The blog called www.suplirahim.multiply.com. In this blog the author formed a number of groups of interests namely AGRONOMIKHUPSI (for students of Agronomy), MESRALAMFSTUPSI (for students of environmental sciences), KELABPENYELIDIKAN (for students of scientific research), and KELABLABORATORY (for students having tasks in laboratories). Lecture notes, announcements from lecturer, links, videos, calendars of academic and other related things were exposed to everyone in the main home pages. As many as 300 students were served using the blog. A continual assessment is conducted towards this method of teaching. A number of lessons learned from this blog usage were widely realized. First, students and lecturer can communicate two-way 24 hourly regardless their places of residences. Second, students can have wider contacts not limited to the lecturer and other students but to the bloggers in the whole world. Third, this system of teaching is an environmentally sound system for it is paperless and thereafter helps save the environment. Fourth, lecturer can easily assess his or her students’ performance academically and non-academically. Fifth, each student has their own website during and after the teaching processes which enable any body to communicate each other in the future. Lastly, this system of teaching using this ICT (blog Multiply) has been proved to be the best method of teaching among other methods and highly recommended by students who have utilized the system since 2008.
5.C.1. Enhancing Self-Regulatory Motivational Strategies through e-Portfolios
Sadiah Baharom, Universiti Pendidikan Sultan Idris, Malaysia

This study describes the development and maintenance of e-Portfolios of pre-service science teachers and its impact on their self regulation strategies. Self-regulated learning is a self-initiated action involving goal setting and regulating one's efforts to reach the goal. E-Portfolios provide the opportunity for students to collect, organize, interpret and reflect on one's learning and practice. Apart from that e-Portfolio serves as a tool for encouraging individuals to take responsibility for and demonstrate the results of their own learning, and further more it increases students' skills and competencies in ICT. Through e-Portfolios, self regulation is increasingly supported by interactive learning environments, and enhanced development of content via Web 2.0 technologies such as Wikis, Weblogs, and social networks like TeacherTube and YouTube. The sample in this study consists of 49 post graduate students attending a course in ICT in Science Education. The Self Regulated Learning Questionnaire (mSLQ) was used to explore the effects of e-Portfolio development on students' self-regulation of their motivational strategies. This questionnaire was administered prior to the e-Portfolio development and on the completion of the e-Portfolio for the course requirement. Bearing in mind the fact that e-Portfolio is web-based, it provides not only evidence and sampling of the learners’ ability to manage his/her own learning but also offers the opportunity to receive feedback and inputs from peers regarding artefacts developed. This study will document e-Portfolio development and provides a showcase of e-Portfolios developed by UPSI's pre-service science teachers. It will also report on students' self regulation of motivation and learning.

5.C.2. Peer-reviewing Integration of ICT in Teaching Practice: Are Vietnamese Teacher Educators Ready to Learn from Each Other?
Nguyen Ngoc Anh, Quang Ninh Teacher Education Institution
Jef Peeraer, VVOB, Viet Nam
Tran Nu Mai Thy, VVOB, Viet Nam

Nowadays, Vietnamese teachers and teacher educators are encouraged to use ICT in their teaching practice. For many teachers it remains unclear though how to use ICT for teaching. Teachers learn the most from what they see other teachers doing. This study addresses the question whether Vietnamese teachers and teacher educators are ready to learn from each other. In the study we follow a focus group of teacher educators participating in a professional development programme on integration of ICT in teaching practice, carried out in 5 teacher education institutes in Viet Nam. We firstly describe peer-assessment, -learning and -reviewing as professional development strategy, after which we analyse the meaning Vietnamese teacher educators give to that. We analyse ascribed strengths and weaknesses, conditions and requirements and limitations of peer-reviewing as a professional development strategy in the Vietnamese Higher Education context. The analysis sheds light on the potential of peer-reviewing in the context of integration of ICT in teaching practice in Viet Nam.

5.C.3. ICT Academic Uses at University: Students Culture and Academic Performance
Josep M Duart and Jonatan Castaño, Open University of Catalonia, Spain

Academic papers and articles on the digital divide stresses the most important factors that will lead to future inequality of people are the different aims and the different ways of using technology. Thus, there is a need to study the uses university students make of technology, the determining factors and consequences for learning. In this paper, we look at the uses being made of the internet by Catalan university students and what types of use aid learning curricular knowledge based on the data obtained from a survey sent to all the students in the Catalan university system.
The results show how most students make the same use of the technology as the rest of their peers, configuring their use of internet in terms of youth culture, rather than student culture. Thus, generally speaking, greater use of the internet leads to worse academic performance. However, analysis also shows that there are uses that have a positive effect on academic performance, especially those linked to using internet as a tool for channelling their interest in learning. Based on the data, this paper offers certain guidelines for integrating use of the internet in student culture in order to improve academic performance.

Tuesday, 17 November - Session 5D
Designing Innovative Approaches and Technologies to Reach Out to Children and Youth
Venue: Luo Bu Bo Room
10:30 – 12:00

5.D.1. Bridging the Early Childhood Education Gap: Exploring the Potential of Interactive Radio Instruction in Indonesia
Andrea Osborne-Smith, Education Development Center, Inc., Indonesia

Studies conducted worldwide clearly demonstrate the role early childhood education (ECE) plays in developing school readiness skills in children; however, the majority of children in Indonesia do not have access to ECE. The primary beneficiaries of ECE services in Indonesia are children from high-income families; children from low-income families are unlikely to participate in any sort of school readiness program prior to enrolling in primary school. There is great interest on the part of the Indonesian Government in providing services to bridge this gap. To this end, the USAID Decentralized Basic Education Teaching and Learning (DBE 2) Project has partnered with Ministry of National Education to develop and implement an interactive radio instruction (IRI) ECE pilot program. The IRI program targets 5-6 year olds and follows Indonesia’s national Kindergarten (TK) B curriculum. The program is designed to address the needs of under and untrained TK teachers and ECE educators in Indonesia while providing ECE content to learners and builds on the success of previous Education Development Center IRI ECE efforts in Honduras and Bolivia.

The pilot seeks to test the efficacy of the IRI model in bringing high quality, low cost ECE to communities throughout seven provinces in Indonesia. Drawing on quantitative and qualitative data collected over two years of implementation, this paper will discuss the potential of IRI as a model for bridging the ECE gap in Indonesia.

5.D.2. ICT and Education
Sudhir Bhatnagar, Society for All Round Development, India

Information and communication technologies (ICTs) including radio and television, as well as newer digital technologies such as computers and the Internet, have been touted as potentially powerful enabling tools for educational change and reform. SARD, a non-profit organization aimed at increasing the participation of minorities and disadvantaged communities in mainstream development processes, has identified radio as a medium to reach large sections of the population. SARD’s Interactive Radio Instruction (IRI) Program ENGLISH IS FUN Level - 1 for Municipal Corporation of Delhi (MCD) primary schools in Delhi focuses on improving the English proficiency of the students. This paper provides more information about the IRI program.

5.D.3. HARSH Exhibition on Healthy Sexuality
Philip Bergstrom, UNESCO, Thailand

UNESCO Bangkok and the National Science Museum of Thailand, in partnership with UNIFEM and the Women’s Health Advocacy Foundation, and others, are mounting a major exhibition on Healthy Sexuality. This will be a formal/non-formal education intervention designed to bring critical sexual health information to Thai adolescents. The exhibition will be interactive, highly engaging and ICT-intensive in its delivery of thought provoking elements of Sex, Relationship, and HIV education. Videos will be created by Thai teens, scripts will be written by Thai teens, and all elements will be vetted through a process of consultation with Thai teens. There
will be no adults, doctors, nurses or teachers represented in the exhibition telling Thai teens how to, or how not
to, behave. Instead, we will deliver life-affirming information to them in as objectively neutral, yet engaging
a manner as possible. Provoking dialogue and discussion amongst themselves and/or back in the classroom
is a primary goal of the exhibition. A website will be created that replicates most of the exhibition and will
include video elements and feedback blogs. This will complement the “text” of the exhibit that all visitors will
take away upon exiting. Lesson plans will be prepared for teachers to use in their classrooms, and a special
briefing session will be available for teachers who bring their students. The primary exhibition at the National
Science Museum will be up for one year, and scaled-down versions of the exhibit will be fabricated and sent to
12 science centers around the Kingdom for two more years.

Tuesday, 17 November - Session 5E
ICT in Education Teacher Training Resources
Venue: Projection Room
10:30 – 12:00

UNESCO has produced a set of materials that are useful to teachers for integrating ICT in their pedagogy:

• Free Software for Educators: help educators to produce their own ICT-based learning objects, learning
  materials and classroom resources. About 30 applications are included, categorized into Office & Design,
  Internet, Educational Tools, Audio and Video, Graphics & Animation and Utilities.

• Multimedia Resources: a collection of clip art, PowerPoint backgrounds, icons, pictures, music, flash applets
  for teachers to produce their own materials or lesson plans.

• Web-tools for Educators: contains about 50 web-based applications which are potentially useful for all types
  of education activities. Every application has its own tutorial explaining the educational potential and the
  technical installation.

• Directory of ICT resources for Teaching and Learning of Science, Mathematics and Language: contains a set
  of ICT-based resources for teaching and learning of science, mathematics and language for secondary-level
  students, including simulations, video clips, interactive learning objects for quizzes, animation, and other
  kinds of multimedia learning activities

This session will provide an opportunity for participants to have a hands-on introduction to these resources,
but participants must bring their own laptops to the session.

Tuesday, 17 November - Session 5F
Closed Door World Bank Session: ICT and Education in 2010 and
Beyond: Moving Forward
Venue: Xi An Room
10:30 – 12:00

This is a closed-door session. Participation is by invitation only.
PLenary Speakers

Jurin Laksanavisit  
Minister of Education, Thailand

His Excellency Mr. Jurin Laksanavisit is currently Thailand’s Minister of Education. He graduated with a Master Degree in Public Administration in the field of Public Policy and Planning. Before assuming the position of the Minister of Education, he was appointed as the Deputy Minister of Agriculture and Cooperatives in 1994 and as the Deputy Minister of Commerce in 1992. In recognition for his contribution to Thai society, His Excellency was awarded with the Knight Grand Cordon (Special Class) of the Most Exalted Order of the White Elephant, one of the most esteemed Thai Royal Declarations.

Wei Yu  
Vice Chairperson of China Association of Science and Technology, Peoples’ Republic of China

Ms. Wei Yu is an Academician of Chinese Academy of Engineering. She served as the Vice Minister of Ministry of Education, Peopleís Republic of China from 1993-2002. She received her Bachelor of EE in 1961, Masters of Electronics in 1965 from Nanjing Institute of Technology, and her Ph.D of EE in 1981 from Aachen Technique University in West Germany. She was a Professor of Electronics, Dean of Faculty of BME and acted as President of Southeast University from 1986 to 1993. Dr. Wei has been invited as honorary doctor at eight universities in the United States, United Kingdom, Canada, Japan, Hong Kong and Macao.

With 40 years of work in the area of electronics as a teacher and researcher, Dr. Wei Yu has made systematic and important achievements, particularly in the development of bioelectronics and grounding molecular electronics in China. She has supervised more than 50 graduate students for Ph.D and MS and published over 300 papers on electronics. She has also made many important contributions to the reform of higher education and the development of modern distance learning in China.

Benjamin B. Bederson  
Associate Professor Computer Science, Institute of Advanced Computer Studies and School,  
University of Maryland, USA

Co-Founder, International Children’s Digital Library, USA

Dr. Benjamin B. Bederson is an Associate Professor of Computer Science and the previous director of the Human-Computer Interaction Lab at the Institute for Advanced Computer Studies and iSchool at the University of Maryland. He is the Co-Founder and Technology Project Director of the International Children’s Digital Library, which has been building a digital library of outstanding children’s books from around the world and supporting communities of children and adults in exploring and using this literature through innovative technology, designed in close partnership with children for children. Dr. Bederson’s research and patents concentrate in the areas of mobile computing, human-computer interaction, computer vision, robotics, information visualization, digital libraries and electronic voting. He has published more than 100 articles in conferences, journals and magazines; his most recent book is “The Craft of Information Visualization.” Dr. Bederson is also Co-Founder and Chief Scientist of Zumobi, a startup offering a mobile content platform based on that research. He earned his B.S. in computer science at Rensselaer and his Ph.D. in computer vision and robotics at New York University.
Gwang-jo Kim  
*Director, UNESCO Asia and Pacific Regional Bureau for Education, Thailand*

An education expert, Mr. Kim has worked in various capacities for the Government of the Republic of Korea. As the Deputy Minister of Education and Human Resources Development, he initiated the Global Human Resources Forum aimed at providing an international platform for sharing information, knowledge and best practices in human resources issues among leaders. He also worked in the Office of the President of the Republic of Korea where he played a key role in an education reform that contributed to the restructuring of the entire Korean educational system. From 2001 to 2003, he was seconded as a senior education specialist to the World Bank working mainly in the Latin American and Caribbean regions. He served as a professor at the Graduate School of Education at Keimyung University in Korea before joining UNESCO Regional Bureau for Education in Asia and the Pacific in early 2009. Mr. Kim has a Bachelor’s degree in Public Administration from Korea University. He also holds a Master’s degree and Doctor of Education in Economics of Education from Harvard University in USA.

Shelly M. Esque  
*Vice President, Legal and Corporate Affairs and Director, Corporate Affairs Group, INTEL Corporation, USA*

Shelly Esque is a vice president in the Legal and Corporate Affairs group and director of Corporate Affairs for Intel. In this role she oversees a staff that manages corporate social responsibility, education, media relations, government and community affairs programs. Her global team, in more than 30 countries, works to enhance Intel’s position as the world’s leading technology brand in business and corporate citizenship.

Ms. Esque joined Intel in 1996 as manager of Public Affairs for the Arizona site. In 2002 she assumed responsibility for Public Affairs in the United States, and in 2004 her role was expanded to include oversight of the worldwide Public Affairs organization as well as Intel’s corporate social responsibility functions. Following the formation of the Corporate Affairs Group in 2006, she assumed broader responsibilities including the management of Intel’s various education programs around the world.

From 1990 to 1996, Ms. Esque served as public affairs director for the Clerk of the Superior Court in Maricopa County, Arizona and from 1984 to 1990 she led all aspects of operations for a small executive recruiting and market research firm focused on the auto industry.

Ms. Esque received her bachelor’s degree in communications from Arizona State University’s College of Public Programs.

Mike Trucano  
*Senior ICT and Education Specialist, The World Bank, USA*

Mike Trucano is the World Bank’s Senior ICT and Education Policy Specialist, serving as the Bank’s focal point on the topic within the education sector. In this role he provides support to World Bank education projects with ICT-related components, and is involved in a variety of research activities. Current areas of focus include policy development, the use of mobile phones in education, ICT and education indicators, ‘new economy skills for Africa’, and evaluations of low-cost devices. He is also a principal contributor to the World Bank’s EduTech blog and oversees the organization’s internal knowledgebase wiki on ICT/education topics.
He previously served as the ICT and Education Specialist at infoDev, the multi-donor ‘ICT knowledge shop’ housed within the World Bank’s Global ICT Department (GICT), where he coordinated activities related to information and communication technologies and the Millennium Development Goals (“ICTs for MDGs”), especially as they related to education. He also led infoDev’s work exploring the use of various low-cost ICT devices to meet developmental objectives in the social sectors, an initiative he continues to help lead from within the World Bank education sector. Highlights during his time at infoDev include ‘Knowledge Maps: ICT and Education (what we know, and what we don’t, about ICT use in education in developing countries)’, over 75 country-level surveys of ICT and education in Africa and the Caribbean, a handbook on ‘Monitoring and Evaluation of ICT in Education Projects’, and the ICT in Education Toolkit for Policymakers, Planners & Practitioners (with UNESCO, used in over 25 countries to date).

Mike brings experience working in a variety of capacities with on-the-ground ICT/education initiatives in several regions of the world, including feasibility studies, evaluation and assessment, teacher training and professional development, appropriate technologies and targeted policy advice, especially related to uses of ICTs in education and community telecentres. He joined the World Bank Group in 1997, first with the IFC, and then serving on the Education and ICT for education teams at the World Bank Institute, where he was a core member of the team that developed the World Links for Development Program. You can follow him on Twitter @trucano.

Nancy Law

Professor Nancy Law is the Director of the Centre for Information Technology in Education, and Professor and Head of Division of Information and Technology Studies of the Faculty of Education in the University of Hong Kong. She has contributed to education in various capacities within the university and beyond, including serving on a variety of policy advisory committees in education in Hong Kong, such as the Steering Committee on Strategic Development of Information Technology in Education of the Education & Manpower Bureau of the HKSAR government. Professor Law actively keeps up with new development and knowledge through her involvement in many international research projects. She has served as a member of the International Steering Committee as well as the National Research Coordinator for Hong Kong for the Second International Information Technology in Education Study (SITES), and a member of the Steering Committee the APEC Cyber Education Consortium (ACEC). She led the development of the modeling environment ‘Worldmaker’ and associated curriculum resources, and initiated the development of the eLearning platform “Interactive Learning Network” (ILN). Her main research interest include the evaluation of ICT policies and implementation for educational innovation as well as the design, development and use of digital technology to support innovative pedagogies, including collaborative knowledge building and modeling. She has a PhD from the Institute of Education at the University of London.
Jonathan Anderson
Emeritus Professor, Flinders University, Australia

Professor Jonathan Anderson is a graduate in psycholinguistics, education and computer science and, in the days when computers could be counted, he worked on Australasia’s third computer. He has worked in universities and schools in Australia, Britain, Fiji, Jamaica, New Guinea, Singapore, Sweden, and the United States. He is the author of books, journal articles, reading tests, research reports, reading and language computer software, CD-ROMs, and online teaching and learning resources. His books include Technology and Adult Literacy, Computing in Schools, Computers in the Language Classroom, Assignment and Thesis Writing, Study at the University (with Sir Fred Schonell), and Developing Computer Use in Education. He edited the UNESCO publications Computers in Education, ICT in Education: A Curriculum for Schools and Programme of Teacher Development, Technology-Pedagogy Integration for Improved Teaching and Learning, and ICT in Schools: How ICT Can Create New, Open Learning Environment. He contributed chapters to two other UNESCO books – A Planning Guide for ICT and Teacher Education and Teacher Development in an E-learning Age. For many years he served as co-editor of the online International Education Journal.

Professor Anderson is Past President of the Australian College of Education and the Australian Reading Association, and was founding editor of the Australian Journal of Reading. He is active in information communications technology and literacy research in Australia and Southeast Asia. He represented Australia on UNESCO’s International Informatics Program and has participated in many UNESCO projects around the world. For his contributions in education, literacy and ICT, Professor Anderson was made a Fellow of the Australian College of Education and the Australian Computer Society; he was elected to the Academy of the Social Sciences in Australia; and he was awarded Honorary Life Member of the Australian Literacy Educators Association.

Jeff Mao
Learning Technology Policy Director, Maine Department of Education, USA

Jeff Mao is the Learning Technology Policy Director for the Maine Department of Education. He provides vision and oversight to Maine’s education technology programs including the Maine Learning Technology Initiative (MLTI).

Jeff has presented at numerous conferences around the United States as well as in Australia. He has testified in support of education technology to the United States Senate Committee on Commerce, Science and Transportation. He has published articles in the One-to-One Institute Newsletter, THE Journal, and online for MacWorld.com. Jeff is Vice Chair of the Board of Directors for the State Educational Technology Directors Association.

Jeff began his career in the classroom at Brewster Academy where he helped develop its pioneering 1:1 program in 1993. After ten years in the classroom, Jeff transitioned to a Technology Director’s position at one of Maine’s larger school districts before he joined the Maine Department of Education.
Chen Xin

Vice President, Shanghai TV University, People’s Republic of China

Professor Chen Xin has been Deputy Director of Shanghai Distance Education Group, Vice President of Shanghai TV University since 2003. With a strong belief in education equality, Professor Chen shares his expertise with his university trying to provide more accessible and flexible learning opportunities to local adults through web-based programmes. He is a prolific writer on ICT education and has received numerous awards for leadership, research, and publications in higher education and distance learning. Professor Chen sits on many educational committees and boards, and is well-known among the national and international communities for his practical hands-on experiences and knowledge in teaching and administration. He has a Bachelor of Engineering from Shanghai University and a MBA from West Virginia University, USA.

Jung Keun Lim

Vice President, Kyung Hee Cyber University, Republic of Korea

Dr. Jung Keun Lim has extensive experience in International NGOs and Social Movements. He is currently the Vice President of Kyung Hee Cyber University and an Associate Professor in the Department of NGO Studies. Before assuming this position, he was the Chairman for the People’s Solidarity for Participatory Democracy (PSPD) from 2004 to 2006 and the Director for the Korea Academy of Business Ethics (KABE) in 2005. He was also a member of the Executive Committee in ASEM Civil Forum (2000) and Steering Committee Member for People’s Solidarity for Participatory Democracy (PSPD) in 1998. He has also taught many courses such as “Internet and Social Movements”, “Relations between NGOs and Corporations” and “Modern Society and NGOs”. He has been also published numerous articles related to social rights and the roles of NGO.

Asha Kanwar

Vice President, Commonwealth of Learning, Canada

Professor Asha Singh Kanwar became Vice President of the Commonwealth of Learning (COL) on 1 April 2006 and assumed additional responsibility as Programme Director in April 2007. Her engagement with distance education began when she joined Indira Gandhi National Open University (IGNOU) where she served as Professor, Director of the School of Humanities and Pro-Vice Chancellor. Professor Kanwar was a Consultant at UNESCO-BREDIA and has over 30 years of experience in teaching, research and administration. She received her undergraduate, master’s and MPhil degrees from the Panjab University in India and a DPhil from the University of Sussex. She was also a Fulbright Fellow for post-doctoral research at Iowa State University, where she was later invited to teach.
Mary Thorpe  
*Professor, Institute of Educational Technology, The Open University, United Kingdom*

Mary Thorpe is Professor of Educational Technology in the Institute of Educational Technology at the Open University, United Kingdom. Since joining the University in 1975, she has evaluated course materials, tuition and learner support systems, and authored courses in Third World Studies, Adult Learning, and Open and Distance Learning. She has also contributed to the development of courses for the professional accreditation of teachers in Higher Education. As Director of the Institute between 1995 and 2003, she led a centre of international excellence for the teaching, research, evaluation and development of educational technology in the service of student learning. The Institute received a rating of 5 in the 1992 and 1996 Research Assessment Exercises. Her current projects include research into interaction in OU courses, funded by the Andrew Mellon Foundation, and research funded by the National College for School Leadership, on online participation. She is also co-leader of a TLRP Thematic Seminar Series on Contexts, Communities and networks: Mobilising learners' resources and relationships in different domains. Professor Thorpe also contributes to the University-wide project for development and review of Course Models, with particular responsibility for pedagogy and the student experience.

Anita Dighe  
*Director, Directorate of Distance Learning, India*

Dr. Anita Dighe is presently working in the Himgiri Nabh Vishwavidyalaya in Dehradun. She retired from the University of Delhi (India) as Director, Campus of Open Learning, in September 2005. She has worked in the areas of adult and non-formal education, continuing and extension education. She has a large number of publications to her credit. In recent years, she has focused on the use of ICT for adult literacy and non-formal education. She has done short-term consultancy work for United Nations Educational, Scientific and Cultural Organization (UNESCO) on several occasions.

Tae-Rim Lee  
*Professor, Korea National Open University, Republic of Korea*

Dr. Tae Rim Lee has worked for 25 years in the Korea National Open University in many capacities. Her training and education on biostatistics from the Seoul National University and Joongang University together with her involvement in many associations as the President of the Korean Public Health Information Statistics Society, President of Korean Biometric Society, and President of the Korean Classification Society, have contributed substantially to her standing among her colleagues and students. She is also an active member of the Asia Europe Meeting (ASEM) e-Learning Network and an ASEM Education Hub Advisory member. She has published numerous books and articles, and participated in as many conferences and meetings presenting her work.
Molly Lee
Coordinator of APEID and Programme Specialist in Higher Education, UNESCO, Thailand

Dr. Molly Lee is the Coordinator of the Asia-Pacific Programme of Educational Innovation for Development (APEID) and Programme Specialist in Higher Education at UNESCO Bangkok. As APEID Coordinator, she works closely with her team on higher education, teacher education, technical and vocational education, and ICT in education. Prior to joining UNESCO Bangkok, she was a Professor of Education at Universiti Sains Malaysia, with research interests in higher education, teacher education, globalization and education, and gender and education. Dr. Lee has a PhD in International Development Education, a Master's in Sociology from Stanford University, and a Master's in Education Planning and Development from the Institute of Education, University of London.
About UNESCO-APEID and the Conference

Based in the UNESCO Asia-Pacific Regional Bureau for Education in Bangkok, Thailand, the Asia-Pacific Programme of Educational Innovation for Development (APEID) is a UNESCO regional inter-country cooperative programme involving more than 40 Member States. APEID was approved at the 17th UNESCO General Conference in 1972 and came into official operation in 1973.

The central mission of APEID is to contribute to sustainable human development through the design and implementation of educational programmes and projects, mainly at the post-primary level of education and focusing on educational innovation for development.

This series of international conferences, held since 1995, has been recognized as an important platform for policy dialogue and information/knowledge sharing on development-oriented education innovations and exemplary practices in and beyond the Asia-Pacific region.

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