UNESCO Strategy for ICT in Education: Challenges, Priority Areas, and Deliverables

Presented for Discussion at UNESCO High-Level Policy Forum on ICT and Education For All, 10-11 June, 2013
I. Challenges of Harnessing ICT for Education
II. UNESCO Strategies for ICT in Education: Vision
III. Priority Areas and Main Deliverables
IV. Strategies for Further Development?
I. Challenges developing countries face in harness ICT’s potentials for education

- **Affordability**: recurrent budget to ensure universal access to ICT devices and online digital resources, and regularly update ICTE

- **Capacities**: in making and managing sector-wide ICT in education policies; institutional and individual capacities in executing polices

- **Inclusion**: equal opportunities for the economically and/or demographically disadvantaged populations

- **Content**: ICT facilitates and complicates the content development and dissemination at the same time. OER and open textbooks holds potentials, but barriers remain huge and complex

- **Quality assurance**: quality of digital content/textbooks; reform of quality framework to embrace new ICT-enabled learning outcomes; quality of online learning (e-safety of children online)

*Neo-PCs (Personal Computing Devices) for Post-2015*
II. UNESCO Strategies for ICT in Education

Overall Goal of UNESCO Strategies for ICT in Education is to assist member states in harnessing the potentials of ICT towards achieving quality education for all goal.
II. UNESCO Strategies for ICT in Education: Respond to challenges, lead the way forward

Based on its five main functions and its global network of offices, institutes and partners, UNESCO is committed to providing Member States with tools and technical advices for elaborating ICT in education policies, strategies and activities to address the challenges.

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<tr>
<th>Policy</th>
<th>Teachers</th>
<th>Mobile Learning</th>
<th>OER</th>
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<td>Standard setting</td>
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<td>Capacity building</td>
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<td>Clearing house</td>
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<td>International cooperation</td>
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III. UNESCO Strategy for ICT in Education: Priority Areas and Main Deliverables

- Policy
- Monitoring and measuring
- Teachers’ pedagogical use of ICT
- Mobile learning
- Digital competency (and e-safety) for students
- Open educational resources (OER)
Facilitating high-level policy dialogues
- Global forward-looking debates on ICT in education
- Regional Ministerial Forums on ICT in education: the 4th Asia–Pacific Forum in November 2013; the 1st African Forum to be launched in October 2013. Latin America and Eastern Europe?

Policy review: Benchmarking against countries with proximal context; review the implementation → Policy recommendations (Malaysia, Thailand)

Policy analysis: Documenting and analyze what policy works → Transforming Education: The Power of ICT Policies

Capacity building on the development of ICT policies: ICT in Education Toolkit → regional & national workshops
UNESCO ICT in Education Toolkit and Capacity Building Workshops on Policy Making

- UNESCO ICT in Education Toolkit (www.ictinedtoolkit.org): An online toolkit to guide policymakers to develop sector-wide national ICT in education policy and a set of master plans, and coordinate among line departments or sectors – facilitated by workshops
- 21 national workshops and 3 sub-regional workshop; directly trained 700+ policymakers of more than 40 countries. The next focus will be African countries.
- Follow-up technical assistance and writing workshops to help member states develop National ICT in Education Master Plans
**ICT in Education Policy: Using educational needs to harness ICT’s promises**

<table>
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<tr>
<th>Educational Need</th>
<th>ICT’s Promise</th>
<th>E-Readiness &amp; Reality</th>
<th>Sector-wide Policy and Master Plans</th>
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<tr>
<td>Universal access to education</td>
<td>Universal access to ICT enables universal access to education</td>
<td>• ICT readiness</td>
<td>• ICT for literacy education</td>
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<td>• Schooling conditions</td>
<td>• Equal access to educational resources</td>
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<td>Better learning &amp; human outcomes</td>
<td>ICT promotes (adds) learning outcomes and human ethics</td>
<td>• Curriculum standards</td>
<td>• ICT for life-long learning opportunities</td>
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<td>• Teachers’ competency &amp; pedagogy</td>
<td>• ICT enhanced learning outcomes of core subjects</td>
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<td>• Assessment</td>
<td>• ICT enable 21st-century skills</td>
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<td>Efficient educational management</td>
<td>ICT improves educational management</td>
<td>• Human &amp; ICT of different Edu. ADMs</td>
<td>• E-safety and e-ethics</td>
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**Vision Orientated**
Main criteria used to review the draft of national ICT in education policies

To what extent your policy targets the expected educational result?

1. Delivering equal life-long learning opportunities through ICTs
2. Defining and assessing E-Skills and E-ethics as results
3. Creating inclusive usable e-learning environment
4. Preparing ICT-qualified teachers and supporting CPD
5. Fostering innovative ICT-pedagogy integration and e-learning
6. Institutionalizing EMIS
Monitoring and Measuring the Impact of ICT on Education

- UIS ICT in Education Indicators
- Assisting member states in developing its national ICT in Education Indicators – UNESCO has been helping China develop a set of ICT in Education Indicators
Teachers’ pedagogical use of ICT

- ICT Competency Framework for Teachers (ICT-CFT)
- Assisting member states in developing ICT Competency Standard for Teachers
- Institutional capacity building for teacher education institutions
To help Member States develop national ICT Competency Standard for Teachers and provide guidelines for planning teacher education programmes, UNESCO has developed the ICT-CFT.
Follow-up activities on ICT-CFT

• UNESCO Guidebook: A _Guidebook on the Development of National ICT Standard for Teachers_ will be developed to fill in the gap between the ICT-CFT and the knowledge needed in developing the national ICT competency standards for teachers.

• Technical assistances to member states in developing their national ICT Competency Standards for Teacher, e.g., Indonesia
Building the institutional capacity of the teacher education institutions (TEIs) in designing and providing the training on ICT-integration for pre-service teachers: more than 50 TEIs from 20+ countries.

- Curriculum Development Workshops and follow-up technical assistances
- Dean’s Forums
  - Institutional evolution
  - Broadening to other TEIs
  - Scaling up to national policy
- Capacity building workshops for teacher educators
- Where TEIs are:
  - Current situation
  - Training content
  - Trainers
- Curriculum
- Leadership
- Instructors' Capacity
- How e-ready
  - Institutional evolution
  - Broadening to other TEIs
  - Scaling up to national policy
The institutional capacity is a systemic capability of coordinating **internal elements** toward the destination illuminated by a visionary leadership, and of **assimilating** external resources or **adapting** itself to contextual changes during its evolitional process.
Objectives and Expected Results

- **Leadership:** Enhance the leadership of the deans of TEIs in planning and managing effective training programmes on ICT in education → I. Dean’s Forum

- **Capacity of instructors:** Build capacity of teacher educators on ICT-pedagogy integration → II. Capacity building workshop on ICT-pedagogy integration

III. Peer Coaching

- **Training content:** Catalyze the efforts of TEIs in reforming ICT-related curricula → IV. Curriculum Development Workshop
Main deliverables of UNESCO in building institutional capacity of TEIs

I. Dean’s Forum

II. ICT-pedagogy Integration

III. Curriculum Development

IV. Innovative T/L (Project based learning and tele-collaboration)

Cloud Platform for Teacher Training?

MOE

Inter-TEIs cooperation

Other TEIs

Local schools

TEI-School partnership
I. Dean’s Forum

### Objectives

5 Forums: 5 forums for 150 deans of 50+ TEIs from 20 countries

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<th>Setting vision; Building leadership, Action planning</th>
<th>Setting</th>
<th>Building</th>
<th>Action</th>
<th>Planning</th>
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<tr>
<td>Thematic or in-depth Dean’s Forum</td>
<td>Thematic discussion and experience sharing</td>
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<td>National Forums or inter-TEI exchange</td>
<td>Local follow-up</td>
<td>Institutional actions</td>
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<td>1st Regional Dean’s Forum</td>
<td>Systematic vision</td>
<td>Training on leadership</td>
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Institutionalization is a process ‘fossilization’ of best practices

Example of results achieved-

**Institutional Policy**

From: Filomena Dayagbil

ftdayagbil@yahoo.com

I am Filomena T. Dayagbil, Dean of the College of Teacher Education of Cebu Normal University (CNU). We have institutionalized our ICT training for graduating Education students in the university. For the past two years, all 4th year Education students (600 students every year) cannot graduate without undergoing the training on ICT integration into teaching and learning.
II. Workshop on ICT-pedagogy Integration

- A 5-day workshop for teacher educators (one for each of the TEIs of the target country) on ICT-pedagogy integration
  - Effective (training) strategies on how to use ICT into different pedagogy: Pedagogical principles, supporting examples, appropriate tools, etc.
  - Hands-on practices of ICT-based unit/lesson design
- Achievement: 13 national Workshops on ICT-pedagogy Integration have been organized
ICT-pedagogy Workshop

Overview

- ICT-pedagogy integration model
- Suggested training content and methodology
- TPCK

ICT in expository based learning

- Pedagogical principles supported by lesson videos
- Useful pedagogical techniques
- Relevant ICTs
- Lesson design

ICT in inquiry based learning

- Pedagogical principles supported by lesson videos
- Useful pedagogical techniques
- Relevant ICTs
- Lesson design

Individual resources based learning

- Pedagogical principles supported by lesson videos
- Useful pedagogical techniques
- Relevant ICTs
- Lesson design

ICT in cooperative learning

- Pedagogical principles supported by lesson videos
- Useful pedagogical techniques
- Relevant ICTs
- Lesson design

- Gaining confidence by self-achievements
- Practicing the “pedagogy-in-use”
- Starting from what they can do & what they need to do
Training FRAMEWORK on ICT-pedagogy integration

### Introduction

- Expository based learning
- Inquiry based learning
- Individual learning
- Cooperative learning

### Pedagogy Content Knowledge

**PBL on pedagogy:**
- Learning theory background;
- Key concepts;
- Key features
- What ARE & ARE NOT Practical knowledge
- General procedure
- Typical issues & coping strategies

**Further quest:**
- Key problems or key concepts
- Resources

### ICT-facilitated

- General principles and showcases
  - Key points showing relative advantage ICT for pedagogy
  - Suggestions and principles
- Scenarios to read and analyze
  - Analyze their appropriateness, effectiveness, and efficiency
  - Connected to real context

### Hands-on Instructional Design

Put all together
For what?
- Content and objectives
- To whom?

Match of ICT & pedagogy:
- ICT-amplified existing ones & ICT-empowered emerging ones.

Design and provision of ICT
- Select; combine compile; create
III. Curriculum Development Workshops

- Objectives: Building capacity in ICT-related course development
- Expected results: Existing training courses on ICT updated or new ones developed and authorized
- Activities: Curriculum-development workshops followed by technical assistances and wrapped up by curriculum authorization
## Main Categories of ICT-related Training Courses in TEIs

### Decision you need to make (authorization & resources)

<table>
<thead>
<tr>
<th>1. Develop a new course</th>
<th>2. Upgrade the content</th>
<th>3. Promote methodology</th>
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<tbody>
<tr>
<td><strong>A. Educational Technology</strong></td>
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<td>non-computer</td>
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<td>computer-based</td>
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<td>Other media</td>
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<td><strong>B. ICT in Subjects</strong></td>
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<td>subject tools</td>
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<td>courseware</td>
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<td>design</td>
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<td>lesson design</td>
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<td><strong>C. e-learning</strong></td>
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<td>Focusing on design &amp; development of online environments</td>
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<td><strong>D. ICT-pedagogy integration</strong></td>
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<tr>
<td>Focusing on pedagogical design</td>
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<td><strong>E. ICT-subject teacher training courses</strong></td>
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<tr>
<td>Focusing on design &amp; development of online environments</td>
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### Main Curricular AREAS

- **A. Educational Technology**
- **B. ICT in Subjects**
- **C. e-learning**
- **D. ICT-pedagogy integration**
- **E. ICT-subject teacher training courses**
Examples of ICT-related Teacher Training Courses: East China Normal University

- **ICT Literacy**–Grade Year 1
  - Computer & Information Literacy
  - Word, Powerpoint, Excel...

- **ICT in Subjects**–Grade Year 3
  - Instructional Design & Practice on ICT in Teaching
  - Application of Multimedia in Edu.
  - Application of Teaching Media
  - Graphic Design of Educational Media

- **ICT across Subjects**
  - Application of ICT across Subjects - Elective for all subjects at any grade years
  - ICT-pedagogy Integration - Elective for all subjects at any grade years

- **Specialization in Educational ICTs**
  - Instructional Website Design & Programming
    - Compulsory for Subject of Computer Science
  - Didactical Game Development
  - Application of Virtual Reality Technique in Education
  - Creation of 3-D Animation in Education
  - Webquest & Online Learning
  - Application of Teaching Media
  - Application of Virtual Reality Technique in Education
  - Creation of 3-D Animation in Education
  - Webquest & Online Learning
  - Didactical Game Development

- **Transforming**
- **Infusing**
- **Emerging**
- **Applying**
Promoting Peer Coaching to Sustain School-based Professional Development

Collective school-based professional development

- Objectives: Training of (master) trainers on ICT-pedagogy integration → peer coaching and institutional trainings
- Activities: 2 Peer Coaching workshops covering >60 master teacher educators
- Results: Peer coach adopted by TEIs and training localized
UNESCO has been leading the global initiative of using mobile technologies in education:

- **Global reviews** on mobile learning in Asia, Africa, Europe, Latin America, and North America
- **UNESCO Working Paper Series on Mobile Learning**
- **Mobile Learning Policy Guidelines**
- **UNESCO Mobile Learning Week**
- Using mobile technologies to support teachers’ development
- Case studies on **Mobile Phone Literacy**: Empowering Women and Girls
- **UNESCO Mobile for Reading project**
Using Mobile Technologies to Support Teachers Development

Exploring the establishment of eco-system that enable the use of mobile technologies to support the development of competencies among teachers: Mexico, Nigeria, Pakistan, and Senegal.

- Innovative mobile solutions to local teacher gaps
- Training programme and continuous support strategy

- Mobile resources & apps – Teacher institution

- Teaching & peer coaching - Schools

- Social mobilization - local education authority or community

- Effective pedagogy
- School-based professional development

- Ownership
- Local partners
- Governmental scaling-up
Mobile Phone Literacy: Empowering Women and Girls
Mobile Phone Literacy: Empowering Women and Girls
UNESCO’s Work on Open Educational Resources (OER)

- The term **Open Educational Resources (OER)** was coined UNESCO in 2002: Open Educational Resources (OER) are teaching, learning or research materials that are in the public domain or released with an intellectual property license such as Creative Commons that allows for free use, adaptation, and distribution.

- UNESCO, in cooperation with Commonwealth of Learning has developed and published *Guidelines for OER in Higher Education*
UNESCO’s Work on Open Educational Resources (OER)

- **World Congress on OER**: UNESCO, in cooperation with Commonwealth of Learning, organized a World Congress on OER in June 2012. Paris OER Declaration 2012 was released by the end of the World Congress:
  - Facilitate enabling technological environment for the access to OER through the provision of universal access to internet connection and low-cost digital devices;
  - Encourage the inter-sector policies on adopting open licensing of educational materials produced by public funds;
  - Provide capacity building and technical supports in developing sector-wide or institution-wide OER policies;
  - Create evidence base of, and disseminate knowledge on, effective use of OER to improve the quality of teaching & learning
Projects to operationalizing Paris OER Declaration funded by Hewlett Foundation:

- **Activity 1 - Policy Development**: supporting Member States to develop sector-wide OER policies through the development of OER Policy Tool, capacity building workshops, and the provision of technical support to Member States: Kenya, Indonesia, Oman, and Bahrain (self-funded). COL is working for Caribbean countries.

- **Activity 2 – Harnessing of OER for effective use of the ICT CFT**: focusing on the development and use of OER materials to support the contextualization of the ICT CFT at the institutional and/or governmental level (based on national contexts).
OER Project Intervention: Technical Assurances to the OER Policy Cycle

- Contextualizing OER policies
- National team or committee

Inception Meeting

- Knowledge transfer & capacity building – policy brief & toolkit
- First draft of OER policy and master plans

National Workshops

- Consultation with multi-stakeholders

Review Meetings

- Policy endorsed
- Master plans and funds to ensure implementation

Official Approval

- Policy advocated
- Aligned with other policies & initiatives

Launch of Policies

- International Advocacy
- Policy dialogues
- Knowledge sharing on effective practices – case studies
Project Inception Meeting (March, 2013): Contextualizing OER Policies

- EFA challenges
- Deeper learning beyond EFA
- Institutional coordination
- ‘Legal Power’ of OER policy
- Integrated in education strategies vs. standalone
- Well funded vs. empty promise
- Open textbooks
- Digital materials supporting teacher training, teaching, learning
- National educational web portal
The UNESCO Prize for the Use of ICTs in Education by the Kingdom of Bahrain
### III. UNESCO Strategy for ICT in Education: Priority Areas and Main Deliverables

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<th>Action Line</th>
<th>Deliverable</th>
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<td><strong>Policy</strong></td>
<td>1.1 Policy debate</td>
<td>• Global and regional forums</td>
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<td>1.2 High-level policy forums</td>
<td>• Toolkit and workshop</td>
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<td>1.3 Policy analysis</td>
<td>• Publication of policy analysis</td>
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<td>14. Capacity building for policy makers</td>
<td>• ICT in Education Policy at PC+ Age</td>
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<td><strong>Monitoring and measuring</strong></td>
<td>2.1 ICT in Education Indicators</td>
<td>• Regional reports of impact of ICT on Education</td>
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<td>2.2 Regional (meta-)survey</td>
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<td><strong>Teachers</strong></td>
<td>3.1 ICT Competency Framework for Teacher (ICT-CFT)</td>
<td>• Building institutional capacity of teachers colleges</td>
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<td>3.2 Supports for teachers’ CPD</td>
<td>• 1:1 Pedagogy</td>
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<td>3.3 Fostering innovation</td>
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<td><strong>Mobile Learning</strong></td>
<td>4.1 Mobile learning policy</td>
<td>• Policy guideline</td>
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<td>4.2 Mobile literacy</td>
<td>• Global forum</td>
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<td>4.3 Mobile supporting teachers</td>
<td>• Models of using mobiles for teachers</td>
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<td>4.4 Mobile reading</td>
<td>• Cases studies of mobile literacy</td>
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<td><strong>Digital competency for students</strong></td>
<td>5.1 Digital competency in context of 21C Skills</td>
<td>• Digital competency framework for students</td>
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<td>5.2 E-safety &amp; E-etiquette</td>
<td>• Policy guideline for e-safety</td>
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<td><strong>Open Educational Resources</strong></td>
<td>6.1 OER policy</td>
<td>• OER policy toolkit</td>
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<td>6.2 OER for literacy</td>
<td>• Open Textbook</td>
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<td>6.3 OER for teachers</td>
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Strategies for Further Development

- Any missing strategic priorities?
- Any suggested implementing strategies?
- How to strategize the impact of partnership?

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| Laboratory of ideas | | | | | ✔️
| Clearing house | | | | |
| International cooperation | | | | |

Strategize the existing partnership: Alliance of ICT For Access
Open Partnership
Thank you...

f.miao@unesco.org
http://twitter.com/#!/UNESCOICTs
http://www.facebook.com/UNESCOICTinEducation