UNESCO’s Toolkit and Programmes for ICT in Education Policy Development
A demand-driven approach

Needs of Member States

ICT in Education Toolkit

Training Programme & Advices on ICT Policy

Global/Regional Policy Dialogue or Review

Teacher Training on ICT (ICT-CFT)

Mobile Learning

Open Educational Resources (OER)
ICTs’ Transformative Power for Education: Alignment with post-2015 education agenda

- **Access**: ICTs are expected to broaden access to learning opportunities at different levels and varied educational contexts.
- **Quality**: ICTs are hoped to improve the quality of knowledge acquisition, knowledge deepening, and knowledge creation, and the development of 21st century skills.
- **Equity**: ICTs are believed holding potentials to equalize learning opportunities in favour of economically and/or demographically disadvantaged populations.

“Ensure **equitable quality** education and lifelong learning **for all** by 2030”
Challenges developing countries are facing in harnessing ICTs’ 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**: content development and dissemination are enhanced and complicated by ICT at the same time. OER and open textbooks hold 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-PC (Personal Computing Devices) era for Post-2015 education
Key Policy Issues

- **Ensure inclusive and equal access** to ICT devices and online resources to the poor, to women and girls, to people with disabilities, and to learners in geographically isolated areas.

- **Build capacities** of policy makers, education managers, education institutions, and individual teachers in leveraging ICT.

- **Promote the free sharing and creative re-use** of open educational resources including online courseware.

- **Seize the emerging opportunities** enabled by the one-to-one (1:1), ubiquitous and mobile learning opportunities.
Overall Goal of ICT in Education Programme UNESCO is to assist member states in harnessing the potentials of ICT towards achieving the equitable quality education and lifelong learning goal.
A demand-driven approach

- Needs of Member States
  - ICT in Education Toolkit
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Global/Regional Policy Dialogue or Review
ICT in Education Policy

- **Facilitating high-level policy dialogues**
  - Global forward-looking debates on ICT in education
  - Ministerial Forums on ICT in Education: Africa, Asia, Eastern Europe

- **Policy review**: Benchmarking against countries with proximal context; review the implementation → Policy recommendations

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

- **Capacity building on the development of ICT policies**
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Teacher Training on ICT in Education

- ICT Competency Framework for Teachers (ICT-CFT)
- Assisting member states in developing ICT Competency Standard for Teachers
- Institutional capacity building for teacher education institutions
UNESCO ICT Competency Framework for Teachers (ICT-CFT)

To help Member States develop national ICT Competency Standard for Teachers and provide guidelines for planning teacher education programmes.
UNESCO has been building the institutional capacity of the teacher education institutions (TEIs) in designing and providing the training on ICT-pedagogy integration for pre-service teachers: more than 60 TEIs from 30+ countries.
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Mobile Learning is learning anywhere, anytime through the use of mobile technologies, often empowered by wireless broadband connection. Scope of mobile devices: tablets, mobile phones, e-readers, etc.

UNESCO’s main focus areas/activities:
• Policy Guidelines for Mobile Learning
• Mobile technologies for teachers development
• Mobile literacy education for women and girls
• Mobiles for reading
• Annual Mobile Learning Week
• Mobile apps for data collection → IIEP
Why Mobile Learning: Leading policies towards Neo-PC era

Penetration of Mobile Phones (ITU or GSMA)
- 90% of world’s population and 80% of rural people have mobile coverage.
- 105 countries have more mobile phone subscriptions than inhabitants.
- Developing countries accounted for more than 80% of the 660 million new mobile subscriptions added in 2011.
- Mobile broadband subscriptions have grown 45% annually over last 4 years.

Neo-PCs era is coming:
- Sales of tablet computers are expected to surpass sales of PCs by 2016.
Mobile Learning Under Different Contexts

Resource- Rich Settings

Extrinsic Motivation

One Tablet per Child

Intrinsic Motivation

- SMART School of Korea
- Future School of Singapore
- MOOCS

Resource- Poor Settings

OLPC

Mobiles in Emergencies

Mobile Phones for Literacy/Teachers
Three Pillars of Mobile Learning at Neo-PC Era

- **Policy**: Open Curriculum & Assessment, OER
- **Mobile Learning**
- **Infrastructure**: Ubiquitous access to broadband
- **Pedagogy**: 1:1 Pedagogy and Open Schooling
UNESCO is advising countries on how to shape policy to better leverage mobile technologies for a better learning and better education administration.

- **What** is mobile learning?
- Unique **benefits** of mobile learning
- Policy **guidelines**
- **Complementary resources**
UNESCO explores the establishment of eco-system that enable the use of mobile technologies to support teachers to do a difficult job better and reveal important information about which projects work, which ones don’t, and why.

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

- Effective pedagogy
- School-based professional development

- Ownership
- Local partners
- Governmental scaling-up

Mobile resources & apps – Teacher institution
Teaching & peer coaching - Schools
Social mobilization - local education authority or community
Using Mobile Technologies to Support Teachers Development

Mexico, Nigeria, Pakistan, and Senegal have been selected for the pilot test. Each country project employs a different approach to support the work of teachers.

Mexico: Enhance the teaching practice of primary school Spanish language teachers working with students who speak indigenous languages.

Nigeria: Support the pedagogical practice and content knowledge of primary school English language teachers.

Pakistan: Develop professional practice of early childhood care and education instructors working in rural areas.

Senegal: Improve the teaching of science and math in primary schools.
UNESCO Mobile Learning Week

- UNESCO launched its first Mobile Learning Week (MLW) in November 2011, and held the 2nd one in Feb. 2013
- UNESCO Mobile Learning Week 2014 “Mobile Learning for Mobile Teachers”, tinyurl.com/mlw2014
- 1-day training workshop; 2-day international symposium, 1-day senior policy forum; 1-day research track
Mobile learning provides new opportunities to expand access to learning opportunities, particularly for women and girls.
A demand-driven approach

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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:

- **Policy Development**: supporting Member States to develop sector-wide OER policies through the development of OER Policy Toolkit, capacity building workshops, and the provision of technical support to Member States
- **Case studies on OER policies**
A demand-driven approach

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UNESCO ICT in Education Toolkit (www.ictinedtoolkit.org, Username: facilitator2; Password: toolkit) - An online toolkit to guide policymakers to develop sector-wide national ICT in education policy and a set of master plans.

- 21 national workshops and 3 sub-regional workshop; directly trained 700+ policymakers of more than 40 countries.
- Follow-up technical assistance to help member states develop National ICT in Education Master Plans
UNESCO Modality to Assist ICT in Education Policy Development Cycle

1. **Contextualizing ICT in Ed policies**
   - National team or committee

2. **Inception Meeting**

3. **National Workshops**
   - Knowledge transfer & capacity building – Policy Framework & Policy examples
   - Draft of ICT in Education policy and master plans

4. **Review & Consultation**
   - Review & revision
   - Consultation with multi-stakeholders

5. **Official Approval**
   - Policy endorsed
   - Master plans and funds approved for implementation

6. **Launch of Policies**
   - Policy advocated
   - Aligned with other policies & initiatives
Process of Formulation of ICT Policy and Interventions

- ICT policy development is not a linear process
- A long-standing national steering committee/agency is proved an effective mechanism
- A participatory approach with full consultation with key stakeholders sets foundation for the adoption of the Policy
Varied Approaches to Developing ICT in Education Policies

- Problem-oriented ↔ Goal-oriented
- Bottoms-up ↔ Top-down
- Decentralized ↔ Centralized
- Incremental ↔ Comprehensive
Onion Model for ICT in education Policy Planning

ICT in education programming is like to peel an onion, one layer after another while under systematic planning, and sometimes with tears...

Infrastructure improvement; hardware, software, and resources procurement & refurbishing
National policy & master plans, ICT standards, management mechanism, and monitoring indicators (UIS)
Partnerships and resources mobilization: public & private; upfront and sustainable; formal & non-formal
Capacity building: planners & administrators, researching or training institutions, teacher educators & teachers,

Education practices: classrooms, families, communities; fix/flexible time & space

High-quality life & learning for students
# ICT in Education Policy: Using educational needs to harness ICT’s promises

## Decision Making & Policy Planning

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• ICT for life-long learning opportunities  
• An ubiquitous learning portal |

Your country’s urgent/major EFA needs/issues? What are the root causes?

E-readiness of out-school children or drop-out youth? Can ICT hit the root causes?

Priority areas or projects to be put into your national ICT in Education Master Plan?
• Mid & long-term objectives?
• Public funds available?
• Other pre-conditions?
Pakistan Mobile Phones Retaining Women’s Literacy Rate: Policy Analysis

Universal access to education | Universal access to ICT enables universal access to education | ICT readiness
---|---|---
Schooling conditions | ICT for literacy education

- ICT for life-long learning opportunities
- An ubiquitous learning portal

- EFA issues: 60 million illiterates; Gender divide (M 63% F 36%)
- Root causes: Low efficiency of traditional literacy approaches + High relapse into illiteracy

- Mobile phone is the highest penetrating ICT (>100 Ms subscribers)
- Handy communicative tool for Islamic females: can be used anytime and anywhere without need to meet F2F
- Limited capacity: 160 scripts per SMS; limited memory – not suitable for initial literacy education

- Using SMS to retain females’ literacy rates
- Total cost of ownership (TCO) per head: Phone ($33), SIM card ($3), 600 SMS by literacy center in 4 months ($7.2), sending SMS by user ($4.8), hiring a teacher (5 months per head) ($7.2), total $55.2
Pakistan Mobile Phones Retaining Women’s Literacy Rate: Policy Analysis (cont.)

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**Main Implementation Steps:**

Step 1: Refresh basic literacy course (1st M)

Step 2: Learning how to use mobile phones and Starting to receive and send SMS (2nd M)

Step 3: Receiving and sending SMS, reading and practice on the working book (2nd – 5th M)

Step 4: Reporting to literacy centers and having weekly or monthly tests (2nd – 5th M)
Lessons learned from the results

- High literacy retaining
- Strong confidence of getting literate and perception of being connected
- Impact on female family members (sisters and mothers)
- Enhanced security of youth and women
- Mobile phone is only a supplemental devise
Self Filming by Children of Nomadic Tribes for Literacy Education - India

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- Too low attendance or motivation for literacy education programme?

- Implemented by Developmental Informatics Lab, Indian Institute of Technology Bombay, Mumbai
- Topics: objects from the immediate environment including the individual “pals” (tents), animals, the journey from the tent to the village/town, the family, the community activities, health & hygiene activities, school life
• Using diverse ICT solutions to deliver quality education for all by the end of 2010
  – Government planned to connect 95% of schools to Internet; to equip all schools with basic educational technologies, covering 160 million students (15 bn USD)
ICT equalizes the access to high-quality educational resources: Case from China (cont.)

• Model 1: Teaching & Learning CD-Rom Playing Portal
  – Targeting 110,000 village-based classrooms, ICT solution: TV set, DVD player, a complete set of curriculum-based CD-Rom

• Model 2: Educational Satellite Receiving & Playing Stations
  – Targeting 380,000 rural primary schools, ICT solution: Model 1 + satellite receiving and playing facilities

• Model 3: Computer Classrooms with Internet
  – Targeting 40,000 rural lower secondary schools, ICT solution: Model 1 + Model 2 + computer classrooms with internet connection
### Korea U-Learning: Digital Textbooks and U-Campus service

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- **Highest spending on education**
- **Top ranking in TIMSS and PISA, while learning interest and motivation going lower**
- **What’s the next: Future School 2030 Project**

- **What are the long-term continuous e-readiness?**
- **ICT in Education Master Plan 1 (MP1) to MP4**

- **U-Learning and U-Campus: Korea’s Ubiquitous learning environment and all Korean textbooks to go digital by 2015**
E-readiness of Korea U-Learning Strategy

• Cyber Home Learning System (CHLS) and Educational Broadcasting Service (EBS) for economically and geographically disadvantaged students; PC support project for low-income families
• 17 Cyber Universities for adults to promote lifelong learning
• Online digital textbook (http://www.edunet4u.net) and pilot testing u-classes
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• E-safety and e-ethics |

Expected education outcomes to achieve employment, personal fulfillment, social inclusion, and active citizenship.

What ICT-related or enabled outcomes?  
What (e-)learning environment can your country afford?  
Are teachers ready?

Starting from curricular review/reform, assessment development, ICT standard & teacher training, or hardware & internet?  
CPD & support strategies?  
E-Safety?
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- ICT improves learning outcomes of traditional core subjects → Teachers’ ICT competency; CPD on ICT-pedagogy integration
- ICT enable interdisciplinary skills: critical thinking, problem solving, innovation and creativity → learning environment + pedagogical design and facilitation
- ICT as new competencies: ICT or digital literacy, advanced ICT skills → Curriculum and assessment development
Curriculum review and/or reform in response to ICT-related skills (basic education & TVET)

- **ICT Specialization (Transforming)**
  - ICT-enhanced Life skills, ob skills, self-entrepreneurs

- **Infusing ICT across subject (Infusing)**
  - ICT enhanced inter-disciplinary skills (synthesis, critical thinking)

- **ICT for subject content knowledge (Applying)**
  - ICTs for subject knowledge and skills (simulation, cognitive tools)

- **ICT Literacy (Emerging)**
  - Application of basic ICT skills in subjects

Online communication creation & management; Intercultural understanding

- Complex communication skills & tele-collaboration

- Content related communication or collaboration

- Subject or modules on basic ICT skills and communicative media including e-safety

- Digital products Creation

**Curriculum Methodology:**
- Infusing into subjects or cross-subject content or activities
- New modules in existing subjects
- Separate core subjects or modules
Curriculum review and/or reform in response to ICT-related skills (basic education & TVET)

Possible Initiatives or Projects:

• Curriculum review: National definition on ICT-related/enhanced learning outcomes → Curriculum review (reform) → assessment development (UNESCO Focus)

• Curricular options
  - A: ICT as separate subjects
  - B: ICT integrated into other subjects or interdisciplinary activities
  - C: A+B
• ICT as a subject area: Can start from primary stage, but mostly from secondary level. Focuses on more systematic and advanced ICT skills
• China ICT Curriculum Structure for Upper Secondary Schools: Based on the ICT courses starting from primary schools, the curriculum is to prepare students to enter ICT-rich society or HE.
How to measure students’ ICT-related skills?

- **ICT in/across other subjects**: Focuses on information literacy, and knowledge deepening and creation based on Information literacy → Key Data on Learning and Innovation through ICT at School in Europe 2011

- OECD’s assessment of students' digital reading competencies in PISA [http://www.pisa.oecd.org]
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Digital-native Net Generation is challenging digital-immigrant teachers

A Net Generation Survey of 8,000 college students:
- 97% own a computer, 94% own a cell phone, 76% instant messenger
- Logging on an average of 35 Hs/week, 75% doing school-work while instant messaging;
- 28% own a blog and 44% read others’ blogs; 69% have a

(source: [The Pew Research Center for the People and the Press](https://www.peoplepress.org/))
Shift of teachers’ qualification: Pedagogical content knowledge (PCK) → Technological PCK (TPCK)

**ICT for Pedagogical Transformation**
(Enabling & managing deeper learning through ICT)
- Enabling blended learning environment
- Creation of LMS, interactive tools, gaming

**ICT for Pedagogical Innovation**
(Facilitating students learning with and/or through ICT)
- Designing ICT enabled lesson plans and digital materials, creating pedagogically proper learning environment
- Specific learning tools, Web 2.0 Mind Mapping; WebQuest

**ICT Integration in subject teaching (Teaching with ICT)**
- Integrating ICT in lesson planning; Use of multimedia tools
- Authoring tools Multimedia tools

**Teachers’ Learning about ICT**
- Teachers experience good pedagogy as a student
- Enhancing daily life, teaching, and traditional management using ICT
- Productivity tools Internet (information searching & online community); E-mail

**Technological Pedagogy**
- Teachers experience good pedagogy as a student

**Subject & Professional Competencies**
- Enabling blended learning environment
- ICT-based Generic Pedagogical Skills (Present, guide search for information, create content, facilitate)

**ICT Competency**
- Creation of LMS, interactive tools, gaming
- Specific learning tools, Web 2.0 Mind Mapping; WebQuest

**Integrating ICT in lesson planning; Use of multimedia tools**
- ICT-based Subject-Specific Pedagogical Skills (Conceptual learning, organization of ideas, tele-collaboration)
- Authoring tools Multimedia tools

**Enhancing daily life, teaching, and traditional management using ICT**
- Designing ICT enabled lesson plans and digital materials, creating pedagogically proper learning environment
- Integrating ICT in lesson planning; Use of multimedia tools
Four stages of Teachers’ Development on ICT-pedagogy Integration

(a) Stages of ICT usages

- Becoming aware of ICT
- Learning how to use ICT in subject teaching
- Understanding how and when to use ICT
- Specializing in the use/design of ICT

(b) Pedagogical Usages of ICT

- Applying productivity tools
- Enhancing traditional teaching
- Facilitating blended learning within or across subject areas
- Creating & managing ubiquitous & interactive e-learning environments
- Transforming
- Infusing
- Applying
- Emerging
Total Ownership of an ICT Competency Standard for Teachers: China’s Experiences

- **Step 1 Standard Setting:** China Educational Technology Standards (CETS) was developed and endorsed at 2004

- **Step 2 Standard Adoption:** CETS was adopted as a new set of compulsory criteria for Teacher’s Certificate

- **Step 3 Syllabus and Training Programme:** Government invested in and monitoring the development of in-service teacher training courses

- **Step 4 Public Training Providers:** Government selected local training (and exam) centers through bidding process who are entitled funds and authorized certification

- **Step 5 Coherent Teacher Education:** Pre-service teacher training courses reformed accordingly
A “4-14-N” structure was designed for CETS

- 4: 4 Dimensions (1st Indexes);
- 14: 14 second indexes;
- N: N numbers of performance indicators for different target groups:
  - 41 indicators for teachers
  - 46 for Administrators
  - 44 for Technology Coordinators
CETS: Content and Framework

- **AWARENESS AND ATTITUDE**
  - Awareness of Demand of ICT
  - Awareness of Implementation and Innovation of ICT
  - Interest and Attitude of ICT

- **IMPLEMENTATION AND INNOVATION**
  - Instruction Design
  - Implementing Lesson
  - Integrating ICT into the Curriculum
  - Collaboration and Communication
  - Learning and Professional Development

- **KNOWLEDGE AND SKILLS**
  - Basic Concepts
  - Basic Skills
  - Information searching, processing and presenting
  - Information security and evaluation

- **SOCIAL RESPONSIBILITIES**
  - Social Ethics
  - Rule of Law
  - Social Responsibilities
  - Humane Care
  - Information security and evaluation
CETS for Teachers

Awareness and Attitude
- Awareness of Educational Value of ICT
- Self-Consciousness of Using ICT
- Assessment and Self-Reflection
- Concepts of Life Long Learning

Knowledge and Skills
- Basic Knowledge and Information Literacy
- Basic ICT Skills
- Designing and Implementing Lessons
- ICT-Supported Teaching and Management
- ICT-Enhanced Research and Professional Development
- ICT- Mediated Communication & Collaboration

Implementation and Innovation
- Applying ICT Equitably
- Applying ICT Effectively
- Applying ICT Appropriately
- Self-Regulating Practice

Social Responsibility
CETS-based In-service Teacher Training Courses on ICT-pedagogy Integration

Emerging Stage

Applying Stage

Infusing Stage

Transforming Stage

Course A

Course B
Unit 1 Orientation
Activity 1 Experiencing ICT in Education
Activity 2 Introduction to the Training Package
Activity 3 Collection and Management of Individual and Group Information
Unit Exercise and Reflection

Unit 2 Re-cap Educational Technology
Activity 1 Key Concepts of Educational Technology
Activity 2 Concepts and Methodology of Instructional Design
Activity 3 PPT on My Understanding of Educational Technology
Unit Exercise and Reflection

Unit 3 Application of Teaching Media and Resources
Activity 1 Understanding Values of Teaching Media
Activity 2 Processing and Compilation of Digital Learning Resources
Activity 3 Searching Educational Resources
Activity 4 Evaluating Educational Resources
Activity 4 Applying Digital Educational Resources Legally and Appropriately
Unit Exercise and Reflection

Unit 4 ICT-enhanced Expository-Based Learning
Activity 1 Analysis of Sample Lessons
Activity 2 Design and Development of Lesson Plans
Activity 3 Peer Review on Lesson Plans
Activity 4 Understanding and Applying Learning Assessment
Unit Exercise and Reflection
Unit 5 ICT-enhanced Inquiry-Based Learning
Activity 1 Analysis of Sample Lessons
Activity 2 Understanding and Applying Rubric
Activity 3 Design Inquiry-Based Learning Activities
Activity 4 Presentation and Peer Review on Lesson Plans
Unit Exercise and Reflection

Unit 6 Planning Facilitation and Organization of ICT-enhanced Lessons
Activity 1 Analysis of Sample Plans
Activity 2 Creation of Implementation Plans
Activity 3 Peer Review on Implementation Plans
Activity 4 Evaluating Students’ Performance
Activity 4 Management of Teaching and Learning Information (Portfolios)
Unit Exercise and Reflection

Unit 7 Infusing ICT across Curriculum
Activity 1 Understanding Integration of ICT and Curriculum
Activity 2 Discussion on Key Issues and Strategies of Infusing ICT across Curriculum
Activity 3 Upgrading Integration of ICT in Lesson Planning
Unit Exercise and Reflection

Unit 8 Documentation and Sharing of Training Outcomes
Activity 1 Compilation of e-Portfolios
Activity 2 Design and Development of Learning Webpages
Activity 3 Publication of Training Outcomes
Activity 4 Peer Review on Training Outcomes
Unit Exercise and Reflection

Annex I Sample lessons or lesson plans; Annex II Related Resources
Unit 1 Orientation
Activity 1 Sharing of Stories on Using ICT in Teaching
Activity 2 Introduction to the Training Package
Activity 3 Team Building and e-Portfolio Creation
Unit Exercise and Reflection: Blog; Mind Mapping Tools

Unit 2 Seminar on Infusing ICT across Curriculum
Activity 1 Understanding Integration of ICT and Curriculum
Activity 2 Diagnostic Study on Effectiveness of ICT-pedagogy Integration
Unit Exercise and Reflection

Unit 3 Integration of ICT in Unit Planning
Activity 1 Understanding and Analysis of Unit Planning
Activity 2 Planning Integration of ICT in Unit-level Learning
Activity 3 Creation of Mind Map of Unit Planning
Activity 4 Finalization of Integration of ICT in Unit-level Learning
Activity 5 Unit Plan Sharing and Peer Review
Unit Exercise and Reflection

Unit 4 Design of Inquiry Based Learning
Activity 1 Mapping Out Key Concepts
Activity 2 In-depth Analysis of Inquiry Based Learning
Activity 3 Design Inquiry Based Learning Activities
Activity 4 Presentation and Peer Review
Unit Exercise and Reflection
Unit 5 Development and Application of Thematic Learning Resources
Activity 1 Understanding Thematic Learning Resources
Activity 2 Designing Thematic Learning Resources
Activity 3 Creating a Website of Thematic Learning Resources
Activity 4 Publication of Websites and Peer Review
Unit Exercise and Reflection

Unit 6 Designing Unit-based Learning Assessment
Activity 1 Understanding Learning Assessment
Activity 2 Analysis of Unit-based Learning Assessment Plans
Activity 3 Applying Multiple Assessment in Evaluating Unit Learning Outcomes
Unit Exercise and Reflection

Unit 7 Organization and Facilitation of Unit-based Learning
Activity 1 Creation of Unit Implementation Plans
Activity 2 Reflection on Lesson Implementation and Action Study
Unit Exercise and Reflection

Unit 8 Sharing of Outcomes and Reflection over Training Process
Activity 1 Compilation of Training Outcomes
Activity 2 Publication of Training Outcomes
Activity 3 Reflection over Process
Unit Exercise and Reflection

Annex I Sample lessons or lesson plans

Annex II Related Resources
# ICT in Education Policy: Using educational needs to harness ICT’s promises

<table>
<thead>
<tr>
<th>Educational Need</th>
<th>ICT’s Promise</th>
<th>E-Readiness &amp; Reality</th>
<th>Sector-wide Policy and Master Plan</th>
</tr>
</thead>
</table>
| Efficient educational management | ICT improves educational management | • Human & ICT of different Edu. ADMs | • EMIS and evidence-based policy making  
• School-home-community portal  
• ICT for in-emergency & post-crisis edu. |

- **National and local level:** A comprehensive e-governance to enhance efficiency and quality of general civil services of education sector; Sharing data and information among education administration organizations and other government departments

- **School level:** Enhancing micro-level education administration and strengthening school-home-community communication

OpenEMIS of UNESCO ([http://ptf.com/download/openemis_user/6210970](http://ptf.com/download/openemis_user/6210970)) piloted in Mongolia
Case of Korea : NEIS

- National Education Information System
- Web-based online administration system for Korea’s educational administration

Concept of NEIS Service

- General Affairs
- Statistics
- Academics Affairs
- Teacher/Non-teaching staff (Schools)
- Parents/Citizen
- G4C Service (Home-Edu)
II. Key qualitative policy indicators for ICT in education policy review

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
1. Delivering equal life-long learning opportunities through ICTs

1.1 ICT providing literacy and/or basic education to the un-reached groups

| No initiative or plan | Supporting externally-driven ICT for literacy or basic education projects | National initiative relying on external funds and targeting part of the un-reached groups | National initiative funded by public funds and targeting majority un-reached groups |

1.2 ICT broadening the access to higher education and further skill training opportunities

| No plan | Recommending online courses | Investing in online courses and/or open universities | Sponsoring and/or recognizing cross-board accreditation |
1. Delivering equal life-long learning opportunities through ICTs

1.3 Access of people with disabilities and students with learning difficulties

- No initiative or plan
- Supporting externally-driven projects
- National initiative relying on external funds
- National initiative funded by public funds

1.4 ICT enhancing learning opportunities for under-served groups: low-income families, Immigrants or migrant workers

- No plan
- Recommendation
- Initiatives or project relying on local funds
- Public funds supporting household ICTs for low-income families
2. Defining and assessing E-Skills and E-ethics as results

2.1 Definition of e-skills and mapping-out in curriculum structure

| No mention | Mixed use of external definitions | Learning outcomes and qualification of students reviewed and reformed in response to e-skills | E-skills refined into curriculum standards at different education levels and into subjects or areas |

2.2 Assessment of e-skills

| No mention | Recommendation without methods | Recommend assessment methods on e-skills in national steering educational documents | National survey or assessment in school-leaving examinations |
3. Creating inclusive usable e-learning environment

3.1 Equal availability of ICT for All Students and Teachers

- **Policy and funds only available to ensure access of administration and teachers to computers**
- **Policy and funds available to ensure all urban and rural teachers and students’ access to computers**
- **Policy and funds available to ensure both teachers and students’ sufficient access to computers with reliable internet connection**
  
  *European Countries: 1:4 computer student ratio*

- **Standard or recommendations on students’ **sufficient** and ubiquitous** access to computers with internet connection in classrooms and different school locations
### 3. Creating inclusive usable e-learning environment

#### 3.2 School ICT Supporting Staffing

<table>
<thead>
<tr>
<th>Policy Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No staffing policy for ICT coordinators</td>
<td>Using ICT subject teachers or other subject teachers to act as ICT supporting staff without recognition of extra workload</td>
</tr>
<tr>
<td>National policy on the position of full-time ICT supporting staff (ICT coordinators or ICT integrator) or recognizing the workload of part-time ICT supporting staff</td>
<td>Clear policy on the position and professional development plan or standards</td>
</tr>
</tbody>
</table>

#### 3.3 Promoting the development and sharing of educational resources

<table>
<thead>
<tr>
<th>Policy Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No national policy or practice</td>
<td>Limited resources development partially funded by public budget</td>
</tr>
<tr>
<td>Publically funded resources development for all subjects at all levels without standard</td>
<td>Publically funded and national standard-based resources development and sharing</td>
</tr>
</tbody>
</table>
4. Preparing **ICT-qualified teachers and supporting CPD**

### 4.1 ICT competency standard for teachers

<table>
<thead>
<tr>
<th>No</th>
<th>Integrating ICT requirements into teacher professional standard</th>
<th>Approved ICT competency standard or national educational technology standard for teachers</th>
<th>Embedded into criteria for teacher recruitment and promotion</th>
</tr>
</thead>
</table>

### 4.2 Investing into training of in-service teachers

| No | Public funds to develop training programme for teachers without further funds training activities | The development of training programmes and organization of training activities fully funded by governments | Recurrent public funds available for continuing professional development |
## 4. Preparing ICT-qualified teachers and supporting CPD

### 4.3 Improving the initial teacher training

| No standard or policy for pre-service teacher training on ICT in Education | Pre-service teacher training programme focusing on individual teacher educators | Institutional capacity building for teacher education institutions on initial training on ICT in Education | Based on the Institutional capacity building strategy, further streamline the initial training, teaching practices, and preparation for the new teaching career |

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**Key qualitative policy indicators for ICT in education policy review**
5. Fostering innovative ICT-pedagogy integration and e-learning

5.1 Encouraging and recognizing individual innovation

- **No policy**
  - Administrative requirements for innovative ICT-pedagogy integration
  - National and/or local prizes/awards for recognizing innovative practices
  - Integrating the innovative ICT-pedagogy integration into regular personnel policy for teachers

5.2 e-school strategy

- **No whole-school strategy**
  - Recommendation on e-school strategy in planning and supporting ICT-pedagogy integration
  - National/local recognition for self-initiated e-school strategy
  - National e-school standard (integrated into general standard for schools) and national assessment against the standard
5. Fostering innovative ICT-pedagogy integration and e-learning
5.3 Monitoring and fostering effective and safe e-learning

| No policy | Policy on promoting students’ effective use of ICT for subject specific content and mainly limited in schools | National and/or local policy in recognizing inter-displinary e-learning beyond classrooms and recommendation of monitoring students’ e-safety | National policy and funds to create and support ubiquitous e-learning portal for students facilitated by national monitoring mechanism on students’ e-safety | Key qualitative policy indicators for ICT in education policy review |
6. Institutionalizing EMIS

6.1 EMIS staff capacity building

- No
  - Centralized EMIS without strengthening of necessary local e-readiness
  - Multi-layer EMIS with sufficient e-readiness without staff building
  - Multi-layer EMIS with sufficient e-readiness and staff building

6.2 School-home-community communication

- No
  - Monitoring the household ICTs without intervention
  - National funds or policy of supporting household ICTs
  - Centrally coordinated and locally implemented school-home-community communication
### 6. Institutionalizing EMIS

#### 6.3 ICT enhanced emergency response system

| No | ICT only for practical education on disaster preparedness | ICT for both the education on disaster preparedness and the recovery of regular education for post-emergency students | An ICT-enhanced quick response system to deliver regular education to post-disaster/emergency students |

Key qualitative **policy** indicators for ICT in education policy review
Thank you...

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