Diverse Approaches to Developing Competency Standards for Teachers

ICT in Education
UNESCO Bangkok

Jonghwi Park
Programme Specialist
ICT in Education, UNESCO Bangkok
Asia and Pacific Regional Bureau for Education
Objectives

• By the end of this modules, TFT will be able to
  - Understand different approaches to competency development
  - Choose an appropriate approach (or a combination of appropriate approaches) for Uzbekistan
Case study

- Analyzed five countries cases where national ICT competency standards for teachers are fully operationalized
- Australia, China, Korea, Kenya and Tanzania
- Duration: Jan – Oct 2014
## Education Vision

<table>
<thead>
<tr>
<th>Country</th>
<th>Education Initiatives and Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>• Australian schooling promotes equity and excellence; and&lt;br&gt;• Young Australians become successful learners, confident and creative individuals, and active and informed citizens. <em>(Melbourne Declaration (2008))</em></td>
</tr>
<tr>
<td>Korea</td>
<td>• Transformation from traditional learning into 21st century learning <em>(SMART (Self-directed, Motivated, Adaptive, Resource-enriched, and Technology-embedded) Education initiative (2011); complemented with ICT use in education master plan)</em></td>
</tr>
<tr>
<td>China</td>
<td>• Modernization of education; focus on people development, comprehensive quality education, with a drive for innovation and problem-solving skills <em>(National Medium and Long Term Educational Reform and Development Plan (2010-200))</em></td>
</tr>
<tr>
<td>Tanzania</td>
<td>• Increase in youth literacy &amp; GER, inclusive &amp; quality education, sufficient teacher professional development <em>(PEDP (Primary Education Development Plan; 2001) and SEDP (Secondary Education Development Plan; 2004))</em></td>
</tr>
<tr>
<td>Kenya</td>
<td>• Increase in youth literacy, years of schooling, and level of satisfaction through greater access to free and quality primary and secondary education. <em>(KESSP (Kenya Education Sector Support Programme; 2005))</em></td>
</tr>
<tr>
<td>Title</td>
<td>Domains/Areas</td>
</tr>
<tr>
<td>-------</td>
<td>---------------</td>
</tr>
<tr>
<td>Australia</td>
<td>Professional knowledge</td>
</tr>
<tr>
<td>Korean ICT Skills Standards for Teachers</td>
<td>Information gathering</td>
</tr>
<tr>
<td>China ICT Competence Standards for National Primary and Secondary School Teachers</td>
<td>Awareness and Attitude</td>
</tr>
<tr>
<td>Kenya &amp; Tanzania ICT Competency Framework for Teachers for SIPSE Curriculum Pathways</td>
<td>Policy Awareness</td>
</tr>
</tbody>
</table>
Three Approaches

- **Adapting from Existing ICT Competency Standards Frameworks**
  - used by **Kenya and Tanzania**
  - contextualized and rolled out the UNESCO ICT-CFT for teachers and teacher educators
  - a project-based scheme allowed greater flexibility and innovation

- **Developing Brand-new Competency Standards**
  - used by **China and Republic of Korea**
  - conducted literature review, competency modelling, investigation of exemplary performance, consultations

- **Adding ICT Standards as Integral Part of Teacher Professional Standards**
  - used by **Australia**
  - incorporated ICT competency standards into the established overall framework and standards for Teacher Professional Development
Contextualization of Existing ICT Competency Standards Frameworks
General procedures

Needs assessment & situational analysis → Researching and reviewing existing frameworks

Prioritizing domains and competencies → Developing performance indicators and assessment

Validation & evaluation of the identified competencies & PIs → Curriculum development or Accreditation system
# The UNESCO ICT Competency Framework for Teachers

<table>
<thead>
<tr>
<th>Category</th>
<th>Technology Literacy</th>
<th>Knowledge Deepening</th>
<th>Knowledge Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding ICT in Education</td>
<td>Policy awareness</td>
<td>Policy understanding</td>
<td>Policy innovation</td>
</tr>
<tr>
<td>Curriculum and Assessment</td>
<td>Basic knowledge</td>
<td>Knowledge application</td>
<td>Knowledge society skills</td>
</tr>
<tr>
<td>Pedagogy</td>
<td>Integrate technology</td>
<td>Complex problem solving</td>
<td>Self management</td>
</tr>
<tr>
<td>ICT</td>
<td>Basic tools</td>
<td>Complex tools</td>
<td>Pervasive tools</td>
</tr>
<tr>
<td>Organization and Administration</td>
<td>Standard classroom</td>
<td>Collaborative groups</td>
<td>Learning organizations</td>
</tr>
<tr>
<td>Teacher Professional Learning</td>
<td>Digital literacy</td>
<td>Manage and guide</td>
<td>Teacher as model learner</td>
</tr>
</tbody>
</table>
Three Domains

**THE FRAMEWORK**

<table>
<thead>
<tr>
<th>TECHNOLOGY LITERACY</th>
<th>KNOWLEDGE DEEPENING</th>
<th>KNOWLEDGE CREATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT as subject</td>
<td>ICT embedded in the curriculum</td>
<td>Knowledge-building pedagogy</td>
</tr>
<tr>
<td>ICT literacy</td>
<td>Project-based learning</td>
<td>Communities of practice</td>
</tr>
<tr>
<td>Traditional pedagogy with some ICT</td>
<td>Real world problem solving</td>
<td>Continuous innovation</td>
</tr>
<tr>
<td>Blended learning</td>
<td>School autonomy and accountability</td>
<td></td>
</tr>
<tr>
<td>Digital content</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Six Aspects of Teachers’ Work

- Understanding ICT in Education
- Curriculum and Assessment
- Pedagogy
- ICT
- Organization and Administration
- Teacher Professional Learning
18 modules

<table>
<thead>
<tr>
<th>THE FRAMEWORK</th>
<th>TECHNOLOGY LITERACY</th>
<th>KNOWLEDGE DEEPENING</th>
<th>KNOWLEDGE CREATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDERSTANDING ICT IN EDUCATION</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CURRICULUM AND ASSESSMENT</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>PEDAGOGY</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>ICT</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>ORGANIZATION AND ADMINISTRATION</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>TEACHER PROFESSIONAL LEARNING</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
• three domains, 18 indicators

• a. Basic Computer/Technology Operations and Concepts
• b. Personal and Professional Use of Technology
• c. Application of Technology in Instruction

• six domains, 23 indicators

• a. Technology Operations and Concepts
• b. Planning and Designing Learning Environments and Experiences
• c. Teaching, Learning, and Curriculum
• d. Assessment and Evaluation
• e. Productivity and Professional Practice
• f. Social, Ethical, Legal, and Human Issues

• five domains, 20 indicators

• a. Facilitate and Inspire Student Learning and Creativity
• b. Design and Develop Digital Age Learning Experiences and Assessments
• c. Model Digital Age Work and Learning
• d. Promote and Model Digital Citizenship and Responsibility
• e. Engage in Professional Growth and Leadership
• Countries that localized and developed their own standards, adopting from the ISTE framework: Malaysia, Korea, Japan, Australia, the Philippines and more

• Also available for students and administrators (stemming from TSSA-Technology Standards for School Admin)

• For more info: [http://www.iste.org/standards.aspx](http://www.iste.org/standards.aspx)
Advantages and weaknesses

• Pros:
  – Time and cost effective

• Cons
  - Lack of ownership
Developing brand-new competency standards
Procedures (Case from Korea)

1. Forming a research team
2. Competency modeling of higher performers through interviews
3. Expert consultation
4. Validation by higher performers
5. Development of Teacher Competency Standards and PIs
6. Validation through survey
7. Finalize the competency standards
Sample results: Domains

Field practices
Specific educational tasks and activities intended to implement SMART education

Fundamentals
Personal characteristics which is the foundations for SMART education implementation
Sample results: Domains & competencies

Teacher Competencies for SMART Education: 13 Competencies, 61 Indicators

Defined as “traits required for teachers who perform effective education to promote key competencies of 21st-century learners and to achieve educational innovation toward future education”

- Personal attributes fundamental to practice of SMART education
  - Foundations (6)
  - Creative problem-solving
  - Social ability
  - Flexibility
  - Technology literacy
  - Ethics
  - Passion

- Practice Competencies (7)
  - Understanding of future education
  - Contents expertise
  - Building rapport with learners
  - Instructional design & development
  - Building learning affordance
  - Evaluation and reflection
  - Building collaborative relationship with community

- Specific educational tasks and activities intended to implement SMART education
Competency based module design

**Teacher Competencies**

**Fundamentals**
- Creative problem-solving
- Social ability
- Flexibility
- Technology literacy
- Ethics
- Passion

**Practice competencies**
- Understanding of future education
- Contents expertise
- Building relationship with learners
- Instructional design & development
- Building learning affordance
- Evaluation & reflection
- Building collaborative relationship with community

**Teacher Training Modules**

1. Concept of future education & teacher's role
2. Concept of SMART education
3. Teacher competency for the practice of SMART education
4. Understanding 21C learner & strategies for promoting the competency
5. Participating in digital ecosystem
6. Class observing copyrights
7. Information & communications ethics
8. Smart lesson plan for digital native
9. Building rapport with learners through SMART education
10. Organize creative SMART education programs
11. Constitute primary theme-centered SMART curriculum
12. Curricular plan by SMART education level
13. Learning smart learning tools
14. SMART learning environment design
15. Collaborative learning design for communication
16. Learning design for lively experience
17. Self-directed intelligence-type customized learning design
18. Using digital textbooks
19. Immerging into the sea of SMART content
20. Comprehensive design for school SMART education system
21. SMART education design for outside the school
22. Features and methods of SMART education assessment
23. Learning process-centered evaluation for 21C competency
24. SMART education and on-site studies
25. Strategies for implementing and facilitating SMART lessons
26. Method of monitoring learning process
27. How to cope with problems in SMART class
28. Constant cultivation of expertise for SMART education
Advantages and weaknesses

• Pros:
  – Maximum reflection of teachers’ voice and needs
  – Ownership and bespoke

• Cons
  - Expensive and time-consuming
  - Technical expertise needed
Adding ICT Components on to Generic Teacher Professional Standards
**Integrated vs stand-alone**

- To what extent/how are the ICT competencies presented in the national competency standards for teachers?

<table>
<thead>
<tr>
<th>Stand-Alone</th>
<th>Integrated</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH, JP, KOR, PHI, SG, TH</td>
<td>MAL, AUS, NZ</td>
<td>BR, CAM, IND, LAO, MYN, VN</td>
</tr>
<tr>
<td>8, 42%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6, 32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5, 26%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*CH, JP, KOR, PHI, SG, TH* | *MAL, AUS, NZ* | *BR, CAM, IND, LAO, MYN, VN* | *KAZ, KYR*
## Procedure

<table>
<thead>
<tr>
<th>Foci</th>
<th>Stage</th>
<th>Element and timeline</th>
<th>Process</th>
</tr>
</thead>
</table>
| **APST standards development** | 1     | Advice and drafting from the expert group and appointed writers (18 months: June 2009 to Dec 2010) | • Analysis and review of the standards in use by Australian teacher registration authorities, employers and professional associations  
    • Development of draft standards for consultation  
    • Continuing revision based on consultation |
|                              | 2     | Extensive public consultation (3 months: March to May 2010) | • National consultation workshops  
    • Online submissions  
    • Analysis of submissions |
|                              | 3     | Validation Study of standards (6 months: July to December 2010) | • Online surveys: (i) teachers in selected schools and (ii) open to any teachers  
    • Focus group workshops: teachers, teacher educators and teacher associations |
| **ICT Competency Standards Integration** | 4     | Teaching Teachers for the Future Project: ICT Statements and Illustrations of Practice (18 months: April 2011 to December 2012) | • Development of Statements of Practice using consultants and focus groups of expert teachers  
    • Development of three Illustrations of Practice through partnership between the Australian Council for Computers in Education (ACCE) and Education Services Australia (ESA)  
    • Development of a further seven Illustrations of Practice by AITSL and ESA |
| **Operationalization**       | 5     | Certification of Teachers (Commenced June 2011: Ongoing)     | • Development of National Framework  
    • Development of Certification Process |
| **Evaluation**               | 6     | Evaluation (Commenced June 2013: Ongoing)                   | • National forum – wide range of Stakeholders  
    • National online survey of teachers, school leaders, teacher educators, pre-service teachers. |

Teacher career ladder in AUS

Initial Teacher Education

- undergraduate programs (4 years)
- graduate entry program (12, 18 or 24 months)
- intensive programs with employer support

Graduation

Teacher Registration

Career Stages
- Graduate
- Proficient
- Highly Accomplished
- Lead
## Integrated ICT competencies

<table>
<thead>
<tr>
<th>Career Stage</th>
<th>Focus Area 2.6: Information and Communication Technology (ICT)</th>
<th>Focus Area 3.4: Select and use resources</th>
<th>Focus Area 4.5: Use ICT safely, responsibly and ethically</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate</td>
<td>Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.</td>
<td>Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.</td>
<td>Demonstrate an understanding of the relevant issues and the strategies available to support the safe, responsible and ethical use of ICT in learning and teaching.</td>
</tr>
<tr>
<td>Proficient</td>
<td>Use effective teaching strategies to integrate ICT into learning and teaching programs to make selected content relevant and meaningful.</td>
<td>Select and/or create and use a range of resources, including ICT, to engage students in their learning.</td>
<td>Incorporate strategies to promote the safe, responsible and ethical use of ICT in learning and teaching.</td>
</tr>
<tr>
<td>Highly Accomplished</td>
<td>Model high-level teaching knowledge and skills and work with colleagues to use current ICT to improve their teaching practice and make content relevant and meaningful.</td>
<td>Assist colleagues to create, select and use a wide range of resources, including ICT, to engage students in their learning.</td>
<td>Model, and support colleagues to develop, strategies to promote the safe, responsible and ethical use of ICT in learning and teaching.</td>
</tr>
<tr>
<td>Lead</td>
<td>Lead and support colleagues within the school to select and use ICT with effective teaching strategies to expand learning opportunities and content knowledge for all students.</td>
<td>Model exemplary skills and lead colleagues in selecting, creating and evaluating resources, including ICT, for application by teachers within or beyond the school</td>
<td>Review or implement new policies and strategies to ensure the safe, responsible and ethical use of ICT in learning and teaching.</td>
</tr>
</tbody>
</table>
Advantages and weaknesses

**Pros:**
- mandatory compliance to general professional standards (including ICT competency standards)
- ICT standards are more generic and open for creative implementation by teacher education institutions/providers

**Cons**
- suitable for countries with bigger autonomy of education institutions to decide on its implementation
- relies on the availability of more advanced local education experts, universities, and education institutions
Key factors in successful implementation of ICT NCST
Key factors

• Identification and involvement of multi stakeholders along the process

• Interdepartmental coordination for in-service, pre-service training and other divisions for teacher performance and evaluation

• A strong system of teacher preparation and professional development, drawn upon the standards

• A performance evaluation system against the standards

• A clear recognition/qualification system that motivates teachers to constantly develop their competencies
<table>
<thead>
<tr>
<th>Countries</th>
<th>Who were involved</th>
<th>How were they involved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td>Teachers, representatives of teacher professional associations, unions, and teacher education academics.</td>
<td>In consultation process of draft standards development.</td>
</tr>
<tr>
<td></td>
<td>Thirty-nine stakeholder groups (among others included key education organisations, teacher professional associations, national bodies, policy makers, employers and school leaders).</td>
<td>In the evaluation of the standards. A National Forum was held to explore perceptions of the success factors for standards implementation.</td>
</tr>
<tr>
<td><strong>Korea</strong></td>
<td>Educational experts, policy makers, and school teachers.</td>
<td>In the Delphi rounds for standards development.</td>
</tr>
<tr>
<td></td>
<td>Parents and community</td>
<td>Identification of parent support and voluntary services for local communities.</td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>Teaching staff, administration staff, and technical staff.</td>
<td>In the investigation and consultations for standards development.</td>
</tr>
<tr>
<td></td>
<td>Schools</td>
<td>In the feedback process from implementation.</td>
</tr>
<tr>
<td><strong>Kenya and Tanzania</strong></td>
<td>Policy makers, TEIs and universities representatives, teachers, principals, national task force members, and partner experts.</td>
<td>During all stages of activities, from situational and need assessment, contextualization, curriculum mapping, module development, and evaluation. Involvement of stakeholders is needed to gain buy-in from key stakeholders in both pre-service &amp; in-service educational institutions.</td>
</tr>
</tbody>
</table>
Three Approaches: which one is for Uzbek?

- **Adapting from Existing ICT Competency Standards Frameworks**
  - used by **Kenya and Tanzania**
  - contextualized and rolled out the UNESCO ICT-CFT for teachers and teacher educators
  - a project-based scheme allowed greater flexibility and innovation

- **Developing Brand-new Competency Standards**
  - used by **China and Republic of Korea**
  - conducted literature review, competency modelling, investigation of exemplary performance, consultations

- **Adding ICT Standards as Integral Part of Teacher Professional Standards**
  - used by **Australia**
  - incorporated ICT competency standards into the established overall framework and standards for Teacher Professional Development
## Comparison

<table>
<thead>
<tr>
<th></th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapting from existing frameworks</td>
<td>• Cost and time effective</td>
<td>• Might lack ownership</td>
</tr>
</tbody>
</table>
| Developing brand-new bespoke standards | • Maximize teachers involvement  
• Ownership | • Expensive and time-consuming  
• Technical expertise needed |
| Adding ICT on to teacher professional standards | • Compliance to general professional standards  
• More generic and open for creative implementation by teacher education institutions/ providers | • Requires bigger autonomy of education institutions  
• relies on more advanced local universities and education institutions |
• Among the three approaches, which one would you think is most appropriate for Uzbekistan contexts? Can some approaches be combined?
THANK YOU.

Jonghwi Park (j.park@unesco.org)
ICT in Education, UNESCO BANGKOK
(www.unescobkk.org/ict)