Indonesia:
OER Initiatives & ICT in Teachers’ Training

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Board of Higher Education
Ministry of Education and Culture

Ari Santoso
Director,
Center of ICT for Education
Ministry of Education & Culture

UNESCO – OER Follow up meeting, Paris March 26-27, 2013
more than 300 ethnic groups live in Indonesia speaking not less than 500 languages and dialects
Our Challenge

5,193,252 km² - 17,508 islands - 3 time zones - 80,000 km shoreline - 1/8 earth circle horizontal stretch (Sabang-Merauke; Talaud-Rote)

is managing ...
240 millions peoples different demographic, geographic, religions, cultures & traditions.
3.7 Millions Teachers

51.3 Millions Students
293,419
Schools & Universities
Education Vision: to produce the bright and competitive Indonesian individuals in 2025.
Teacher Distribution per Region – Percentage of Oversupply and Undersupply

Urban: 68% Over, -21% Under
Rural: 52% Over, -37% Under
Remote: 17% Over, -66% Under

Source: Kemdiknas, 2009
Teachers’ qualification

In-service Teacher Training to upgrade teachers’ qualification

Source: Kemdiknas, 2009
Presently, there are 3,016 higher education institution + 680 under MoRA in Indonesia, serving 5.4 million students.
Higher Education – Regional Disparity of Access to Higher Education

National average = 27.1%
HE Socio-Economic Disparity of Access to Higher Education

Poorest to Richest Percentages:
- Private:
  - 0.75% to 0.35%
  - 1.66% to 1.06%
  - 3.29% to 2.35%
  - 12.19% to 6.06%
  - 38.89%
- Public:
  - 0.75% to 0.35%
  - 1.66% to 1.06%
  - 3.29% to 2.35%
  - 12.19% to 6.06%
  - 22.53%

National average: 22.53%

Source: WB, 2010
<table>
<thead>
<tr>
<th>Quality Gap</th>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5%</td>
<td>Level Four</td>
<td>World Class University</td>
</tr>
<tr>
<td>9.5%</td>
<td>Level Three</td>
<td>Accreditation A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fulfill the ideal quality</td>
</tr>
<tr>
<td>52.2%</td>
<td>Level Two</td>
<td>Accreditation B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fulfill the average quality</td>
</tr>
<tr>
<td>38%</td>
<td>Level One</td>
<td>Accreditation C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fulfill the minimum quality</td>
</tr>
</tbody>
</table>

Only a very few quality HE institutions, although the government would like to achieve a very progressive target.
There are several problems faced simultaneously by the government, especially with regards to the access to a quality and affordable education.

<table>
<thead>
<tr>
<th>National Issues</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem of Disparity</td>
<td></td>
</tr>
<tr>
<td>Problem of Diversity</td>
<td></td>
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<tr>
<td>Problem of Resource Limitation</td>
<td></td>
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<tr>
<td>Problem of Access to Education</td>
<td></td>
</tr>
<tr>
<td>Problem of Quality and Quantity</td>
<td></td>
</tr>
<tr>
<td>Problem of Infrastructure</td>
<td></td>
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<tr>
<td>Problem of Affordability</td>
<td></td>
</tr>
</tbody>
</table>
The government and education community have agreed to transform the national education system through enforcing collaboration among HEI.
## Legal Framework

<table>
<thead>
<tr>
<th>Law on National Education (2003)</th>
<th>Distance education (and the use of ICT) as one modality to deliver education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Development of open educational resources</td>
</tr>
<tr>
<td></td>
<td>Promote Resource sharing &amp; collaboration</td>
</tr>
<tr>
<td></td>
<td>Development of ICT based HE network and information system</td>
</tr>
<tr>
<td></td>
<td>In service teachers’ training through distance education</td>
</tr>
<tr>
<td></td>
<td>E-book, e-journal</td>
</tr>
<tr>
<td></td>
<td>ICT based distance learning</td>
</tr>
<tr>
<td></td>
<td>Resource sharing and OER</td>
</tr>
<tr>
<td></td>
<td>Credit earning &amp; transfer system</td>
</tr>
</tbody>
</table>

A legal framework in the form of Law will provide a strong base for development of OER, resource sharing in education, and open/distance education.
By integrating the internal ecosystem and external forces, an open education ecosystem within campus can be generated to expedite the adoption of OER.
Firstly, there are four external factors that force campus to promote and to adopt the concept of open education internally.
The Government should lead on socialising and educating the public on the importance of adopting open education paradigm.

<table>
<thead>
<tr>
<th>Rules and Regulation</th>
<th>Rewards and Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Learning and Distance Education Decree</td>
<td>Continuous Grant Allocation (incentive)</td>
</tr>
<tr>
<td>Digital Books and E-Journal Decree</td>
<td>E-learning development grant</td>
</tr>
<tr>
<td>The Use of ICT for Education Decree</td>
<td>OER development grant</td>
</tr>
<tr>
<td>IGOS – UGOS</td>
<td>Collaboration Project Endorsement</td>
</tr>
<tr>
<td>OER adoption (new Law on HE)</td>
<td>Conducive Environment for sharing &amp; innovation</td>
</tr>
<tr>
<td>Resource sharing (new Law on HE)</td>
<td></td>
</tr>
</tbody>
</table>
The Standard & Quality Force

<table>
<thead>
<tr>
<th>Changing Paradigm</th>
<th>Development of Standard &amp; Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizing digital publication</td>
<td>QA System for ODL</td>
</tr>
<tr>
<td>Creative commons copyrighting</td>
<td>Board of National Education Standard</td>
</tr>
<tr>
<td>Rewarding Campus that Shares Resources</td>
<td>National Accreditation Board</td>
</tr>
<tr>
<td>Giving Higher Score for Quality E-Learning</td>
<td>Credit Transfer &amp; Earning System</td>
</tr>
<tr>
<td>Using Search Engine for Publication Recognition</td>
<td>Open Platform Development</td>
</tr>
</tbody>
</table>

National standard and accreditation board should redesign its assessment instruments to promote the adoption of open education principles.
The new paradigm on learning should be well understood by all key stakeholders in national education system.

### 21st Century Learning Model
- Ubiquitous Learning – content from everywhere
- Collaborative & sharing
- Utilizing ICT in Delivering Learning Process
- Open and flexible learning (credit transfer, RPL, etc)

### Today’s Students DNA
- Digital natives
- Education and Learning Should be “Open”
- Business Models on IPR are Changing
- The Landscape of Open Education is Getting Stronger
The Values Expectation Force

<table>
<thead>
<tr>
<th><strong>Direct Benefits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving Quality of Education</td>
</tr>
<tr>
<td>Increasing Students Intakes</td>
</tr>
<tr>
<td>Optimizing the Use of Limited Resource</td>
</tr>
<tr>
<td>Efficient and effective use of taxpayer money</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Indirect Benefits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Making the Brand Stronger</td>
</tr>
<tr>
<td>Participating on Global Movement</td>
</tr>
<tr>
<td>Empowering Governance Model</td>
</tr>
</tbody>
</table>

By the end of the day, open education initiative should bring direct and indirect values and benefits to all education communities who adopt the concept.
Promoting open education initiative in a campus environment should be done by using holistic and systemic approach to accelerate adoption.
In 2011 & 2013, APTIKOM and DGHE - Ministry of Education were conducting research on 350 HEIs to map and to find issues on implementing open education concepts.
Summary

Infrastructure

Suprastructure

People

Practice

Content

Tools
Education Strategic Plan

- **2005 – 2009**: Increasing capacity and modernization
- **2010 – 2014**: Strengthening services
- **2015 – 2020**: Strengthening regional competitiveness
- **2020 - 2025**: Strengthening international competitiveness
## Improvement of teachers’ qualification

Plan of teachers’ qualification improvement to S-1

<table>
<thead>
<tr>
<th>Academic Qualification</th>
<th>Length of Study study</th>
<th>No. of teacher</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; High School</td>
<td>4 Years</td>
<td>487.701</td>
<td>243851</td>
<td>Projected to finish 2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>243851</td>
<td>Projected to finish 2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>3 Years</td>
<td>40.626</td>
<td>13542</td>
<td>Projected to finish 2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13542</td>
<td>Projected to finish 2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D2</td>
<td>2 Years</td>
<td>705.190</td>
<td>176298</td>
<td>Projected to finish 2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>176298</td>
<td>Projected to finish 2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D3</td>
<td>1 Years</td>
<td>104.672</td>
<td>20934</td>
<td>Projected to finish 2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20934</td>
<td>Projected to finish 2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scholarships</td>
<td></td>
<td>1.338.189</td>
<td>454.625</td>
<td>Projected to finish 2012</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>454.625</td>
<td>Projected to finish 2012</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>210.774</td>
<td>Projected to finish 2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20.934</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

176298 Projected to finish 2011
Challenges of teachers’ qualification program

- Geographical
- Transportation
- Infrastructure
- Maintain the duty
A good number of initiatives is being introduced by education communities based on the spirit of sharing and collaborating among scholars and HEIs.
Provision of ICT INFRASTRUCTURE for Education e-Services
JARDIKNAS: National Education Network
[nation scale wide area network]
Providing ICT Facilities
The challenge is to facilitate classroom with appropriate ICT & tools for learning, not only providing classroom with computer as computer laboratories.
## Ratio and Projection PCs Needed by Schools 2010-2025

<table>
<thead>
<tr>
<th>No.</th>
<th>Level</th>
<th>Number of School</th>
<th>∑ Ideal of PCs</th>
<th>Ratio 1 School : ∑ Komputer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2010</td>
<td>2015</td>
</tr>
<tr>
<td>1</td>
<td>SD</td>
<td>144.228</td>
<td>1.442.280</td>
<td>1 : 10</td>
</tr>
<tr>
<td>2</td>
<td>SMP</td>
<td>28.777</td>
<td>5.75.540</td>
<td>1 : 20</td>
</tr>
<tr>
<td>3</td>
<td>SMA</td>
<td>10.762</td>
<td>387.432</td>
<td>1 : 36</td>
</tr>
<tr>
<td>4</td>
<td>SMK</td>
<td>7.592</td>
<td>273.312</td>
<td>1 : 36</td>
</tr>
<tr>
<td>5</td>
<td>SLB</td>
<td>1.686</td>
<td>8.430</td>
<td>1 : 3</td>
</tr>
<tr>
<td>6</td>
<td>MI</td>
<td>21.529</td>
<td>215.290</td>
<td>1 : 10</td>
</tr>
<tr>
<td>7</td>
<td>MTs</td>
<td>13.292</td>
<td>265.840</td>
<td>1 : 20</td>
</tr>
<tr>
<td>8</td>
<td>MA</td>
<td>5.648</td>
<td>203.328</td>
<td>1 : 36</td>
</tr>
<tr>
<td>9</td>
<td>PT</td>
<td>3.532</td>
<td>282.560</td>
<td>1 : 80</td>
</tr>
<tr>
<td></td>
<td>Total Number</td>
<td>237.046</td>
<td>3.650.640</td>
<td></td>
</tr>
</tbody>
</table>

Providing e-Learning Content and Delivery Services
Portal RUMAH BELAJAR

http://belajar.kemdikbud.go.id

Belajar di mana saja
Kapan saja
Dengan siapa saja

VIRTUAL CLASS services

DIGITAL LEARNING RESOURCES services

CONTINUING PROFESSIONAL DEVELOPMENT services

World wide telescope

Portal RUMAH BELAJAR

http://belajar.kemdikbud.go.id
VIRTUAL CLASS

Provide learning management system for facilitating teaching & learning process virtually between students and teachers anytime anywhere. Enabling students to learn learning materials asynchronously anytime anywhere. In certain time, scheduled by teachers, students can follow instruction virtually and synchronously with the teacher through synchronous communication tools (chat, video conference, audio conference, desktop sharing, whiteboard, etc.). Instructional strategy used is more constructivist learning theory that demand student centered and active learning to promote the 21st century learning skills of student.
Provide any **learning object** in many forms (text, graphics, animation, audio, video, simulation, games, etc.) for free. Teaching material can develop by teachers and education communities based on national standard of competencies with tools application provide in the portal.

Now consisted of more than **12,934** learning objects for all level and type of education.
Learning interactive Media 2012

- SD
- SMP
- SMA
- SMK

Materi Pokok
Modul Online
Pendukung BSE

Visited by more than 13,000 users/day
Provide learning/content management system developed to facilitate continuing professional development online. This feature used to facilitate online distance training for all educators and education staff in the Ministry of Education and Culture. Right now, it will be used to train teachers all over Indonesia regarded to the dissemination of a new curriculum, curriculum of 2013 implementation.
SECOND2
Chanel 1: for students
[broadcast 24 hours a day]

Chanel 2: for teachers
[broadcast 8 hours a day]
Delivery strategies:
Uplink Broadcast through Telkom-1 satellite
Relayed by local TV stations and TV Cables
Streaming TV program
Free Video on Demand
http://tve.kemdikbud.go.id
Delivery strategies:  
**Uplink Broadcast** through Telkom-1 satellite  
**Relayed** by local TV stations and TV Cables  
**Streaming** TV program  
**Free Video on Demand**  
http://tve.kemdikbud.go.id
THIRD
Instructional audio broadcast streaming and podcast
Instructional audio broadcast streaming and podcast
TEACHER
ICT COMPETENCY DEVELOPMENT
Hundreds teachers trained each year by Pustekkom, Provincial/municipal regency education offices and any other main units in MoE and even private sectors such as Intelteach Program (Intel), Partner in Learning Program (Microsoft), etc.
but, the **focus** of the training ... 

mostly still related to ... 

**how to use ICT** NOT  
**how to teach with ICT**
Since 2004, Pustekkom (the Center of ICT for Education) focusing training teacher more on how to integrate ICT into curriculum and instructional strategies appropriately to develop student’s 21st century skills.
as modeling to promote it ....

we build teacher community, contest and award annually (e-learning award)
Recently, we are establishing such a kind of Ministry Regulation related to **ICT Competency for Teacher** ... [on progress]
One other challenge

how about ICT for education in rural and border area?

19 municipal regencies in 7 provinces with insufficient basic infrastructures
So far, we established **learning resources center (LRC)**, utilizing solar panel, parabola dish, and LAN (server, access point, and digital content) as access point for learning center.
Install ICT for education in rural and border area

Kec. Cibeber-Kabupaten Lebak Banten
Install ICT for education in rural and border area

Kec. Sebatik-Kabupaten Nunukan Kalimantan Timur
Technology is not the end. It is a mean to meet the end.

- Dryden & Voss, in the Learning Revolution, 1996

THANK YOU
Electronic Books for K-12

The example of the initiatives by Ministry of Education and HEI communities is producing electronic books for K12 (almost 1,000 official references)
The example of the initiatives by Ministry of Education is the Establishment of Rumah Belajar (open educational resources for K-12)
The heterogeneous environment of Indonesia forces the adoption of multi-channel access architecture in implementing open education initiatives.
By integrating the internal ecosystem and external forces, an open education ecosystem can be generated to expedite the adoption of OER.
Thank you
Merci
Terima kasih

BY

nizam
1. Mendefinisikan kebutuhan bersama dan menyerahkan solusi secara kolektif

2. Membuat panduan detail mengenai usulansolusi kerjasama secara nasional untuk dilaporkan dan diminta ipersetujuan

3. Mendukung dan mengawasi pelaksanaan inisiatif atau gagasan kerjasama terkait

4. Menunjuk dan memonitor pembangunan, implementasi, dan pengembangan manajemen operasional program yang dicanangkan

5. Menyediakan infrastruktur dan jasa yang dibutuhkan oleh seluruh komunitas

The NEXUS is developed as a system for open education system
OER needs reliable ICT infrastructure. Indonesia Higher Education and Research Network (INHERENT) is the National backbone for OER sharing – hub for education network (e-school)
Latest National Educational Strategy Document outlining overall vision and objectives (maximum 3 slides)
   a. Name of Guiding Document 
   b. Link in Guiding Document to OER Policy

Development and ICT in Education Teacher Training Initiatives
2. General ICT in Education Policy (3 to 5 slides), with highlights on:
   a. Policy for OER 
   b. Policy for ICT in Education Teacher Training

3. Challenges to overcome to implement OER policy; ICT in Education Teacher Training Initiatives (2 slides)

4. Successful stories of implementing OER