 Crash course on open educational resources

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CrashCourse on Open Educational Resources

Guest Lecture
24th and 27th June 2013
Sukhothai Thammathirat Open University, Thailand

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MSc, MSc(Brunel), BSc(Bangalore), MIEEE, MBCS, MIE, MTA
Senior Lecturer, School of Science and Technology, Wawasan Open University, Penang, Malaysia

Acknowledgement

I express my gratitude to:

– Assoc. Prof Dr. Chalerd Pichitponchaiforex tendingmethiskindinvitation;

– Ms. Rattip Phukkeson and all other colleagues at STOU for having me here.
LectureOutline

- Introduction to Open Educational Resources.
- OER from an Asian Perspective: Reflections of the OER Asia Study.
- A Viable Model for OER Reuse in ODL Courses: Case Study.

Introduction to Open Educational Resources (OER)
MainReference


TalkingPoints

- Definition of OER
- Current Status
- The "O" in OER
- Copyright
- Access
- Curation
- Funding and Sustainability
- Impact
- Future Direction
Definition

- “web-basedmaterials,offeredfreelyandopenlyforuseandresearch” (Joyce, 2007).

- “teaching,learningandresearchmaterials in anymedium,digitalorotherwise,thatresideintheopensourceorhavebeenrelesedunderanopenlicense thatpermitsno-costaccess,use,adaptationandredistributionbyotherswithoutlimitedrestrictions” (UNESCO Paris OER Declaration, 2012)


The "O" in OER

The four R's model:

- **Reuse**—the most basic level of openness. People are allowed to freely use all or part of the unaltered, verbatim work.

- **Redistribute**—people can share copies of the work with others.

- **Revise**—people can adapt, modify, translate, or change the form of the work.

- **Remix**—people can take two or more existing resources and combine them to create a new resource.

Increasing openness of the four R's: adapted from Hilton et al., 2010

Increasing openness of the four R's: adapted from Hilton et al., 2010
Copyright

OpenContentLicensing (OCL) schemes:

• PublicDomain

• CreativeCommons (CC)

• GNUFreeDocumentationLicensing

• Otherregionalorinstitutionallicenses
  – BCCommons (discontinued)
CCPorted vs. Unported

- **Unported:** abides by international copyright law and is not subject to regional jurisdictions;

- **Ported:** a version customized to suit the copyright law of a particular region or jurisdiction.

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Access (ALMS)

- **Access to editing tools:** are the software tools needed to reuse the source?

- **Level of expertise required to revise or remix:** is it easy to revise or remix the resource without advanced technical skills or specialist knowledge?

- **Meaningfully editable:** can the resource be used or remixed with less time and effort than needed to create it from scratch?

- **Source file access:** does the resource provide access to an editable source file which can be used to revise or remix?
Curation

- Content repositories– hosts content internally within the repository (e.g. Connexions, WikiEducator).
- Portal repositories– provides searchable catalogues of content hosted in external repositories (e.g. OER Commons, DOER).
- Content and portal repositories– hosts content internally in addition to providing.


Funding and Sustainability

1. Endowment Model
2. Membership Model
3. Donations Model
4. Conversion Model
5. Contributor-Pay Model
6. Sponsorship Model
7. Institutional Model
8. Governmental Model
9. Partnerships and Exchanges

Impact

- “just as the Linux operating system and other open source software have become pervasive computer technology around the world, so too might OER materials become the basis for training the global masses” (Farber, 2009).

- The move towards OER can significantly reduce the cost of learning (Caswell et al., 2009).


Future Direction

Massive Open Online Courses (MOOC)

UDACITY
Questions

OER from an Asian Perspective: Reflections of the OER Asia Study
Main Reference


TheOERAsiaSurvey

- AimedtoidentifythecurrentstateofplayintheAsianRegionwithrespecttoOERpractice.

- The surveymainlyconcentratedon, butnotlimitedto, thecurrentsituationin Malaysia, Vietnam, Indonesia, India, Philippines, Japan, China, HongKong, SouthKorea.

- Duration:27months
Scope

• **Learning Content:** Full courses, courseware, content modules, learning objects, collections and journals.

• **Tools:** Software to support the development, use, re-use and delivery of learning content including searching and organization of content, content and learning management systems, content development tools and online learning communities.

• **Implementation Resources:** Intellectual property licenses to promote open publishing of materials, design principles of best practice and localization of content.

Objectives

1. To determine the demand for OER;
2. To establish the regional capabilities to develop and/or use OER;
3. To determine, list and describe the range of OER activities in this region;
4. To list and describe the methods adopted for the creation of OERs;
5. To identify the policy, legal and technological issues relating to the use of OERs;
6. To identify/determine the requirements of quality and the irrelevance in the OER environment;
7. To undertake and economic analysis of the OER development and use;
Responses

Individual (N=420)

Institutional (N=98)

Respondent Profile

<table>
<thead>
<tr>
<th>Participant Title</th>
<th>Public</th>
<th>Private not-for-profit</th>
<th>Private for-profit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td>Prof.</td>
<td>20</td>
<td>2</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>80.00%</td>
<td>8.00%</td>
<td>12.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Dr.</td>
<td>77</td>
<td>15</td>
<td>10</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>75.50%</td>
<td>14.70%</td>
<td>9.80%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Mr.</td>
<td>168</td>
<td>32</td>
<td>22</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>75.70%</td>
<td>14.40%</td>
<td>9.90%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Ms.</td>
<td>47</td>
<td>14</td>
<td>10</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>66.20%</td>
<td>19.70%</td>
<td>14.10%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>312</td>
<td>63</td>
<td>45</td>
<td>420</td>
</tr>
<tr>
<td></td>
<td>74.30%</td>
<td>15.00%</td>
<td>10.70%</td>
<td>100.00%</td>
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</table>
### Teaching Profile

<table>
<thead>
<tr>
<th>ParticipantTitle</th>
<th>Undergraduate</th>
<th>Postgraduate</th>
<th>HighSchool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof.</td>
<td>14</td>
<td>15</td>
<td>-</td>
</tr>
<tr>
<td>Dr.</td>
<td>76</td>
<td>63</td>
<td>-</td>
</tr>
<tr>
<td>Mr.</td>
<td>132</td>
<td>46</td>
<td>19</td>
</tr>
<tr>
<td>Ms.</td>
<td>51</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>273</td>
<td>143</td>
<td>23</td>
</tr>
</tbody>
</table>

### OER: Academic Use

#### I have used
- Yes: 65%
- No: 23%
- Unsure: 12%

#### I will use
- Yes: 80%
- No: 15%
- Unsure: 5%
OER: Production

- 61.20%: We currently do not produce open educational content
- 82.26%: As full courses/programmes
- 124.40%: As part of courses/programmes
- 45.14%: As learning objects

OER: Co-operation

The true cost savings for an institution would be visible only when more and more OER-based course materials are developed and shared freely among peer institutions through a “Partnerships and Exchanges” model (Downes, 2007) reducing the need for re-development of common modules.

OER: Co-operation

Producing

- No: 13.4%
- Yes, in the same region/state: 47.16%
- Yes, in another part of the country: 20.7%
- Yes, internationally: 21.73%

Exchanging

- No: 16.5%
- Yes, in the same region/state: 46.15%
- Yes, in another part of the country: 17.6%
- Yes, internationally: 22.74%

OER: Barriers

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Yes?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Lack of awareness</td>
<td>Yes</td>
</tr>
<tr>
<td>2 Lack of skills</td>
<td>Yes</td>
</tr>
<tr>
<td>3 Lack of time</td>
<td>Yes</td>
</tr>
<tr>
<td>4 Lack of hardware</td>
<td>No</td>
</tr>
<tr>
<td>5 Lack of software</td>
<td>No</td>
</tr>
<tr>
<td>6 Lack of access to computers</td>
<td>No</td>
</tr>
<tr>
<td>7 Lack of ability to locate specific and relevant OER for my teaching</td>
<td>Yes</td>
</tr>
<tr>
<td>8 Lack of ability to locate quality OER for my teaching</td>
<td>Yes</td>
</tr>
<tr>
<td>9 No reward system for staff members devoting time and energy</td>
<td>Yes</td>
</tr>
<tr>
<td>10 Lack of interest in pedagogical innovation among staff members</td>
<td>Yes</td>
</tr>
<tr>
<td>11 Lack of support from management level</td>
<td>Yes</td>
</tr>
</tbody>
</table>
OER: Copyright Awareness

Individual

- Yes: 89%
- No: 11%

Institutional

- Yes: 97%
- No: 3%

OER: Use of Copyright Licenses

Individual

- Yes, Creative Commons: 43.73%
- Yes, other "open content license": 7.12%
- No: 22.9%
- Other: 148.61%

Institutional

- Yes, Creative Commons: 43.73%
- Yes, other "open content license": 9.15%
- No: 7.12%
OER: Key Copyright Concerns

- Remixing different resources legally;
- Incorporates unlicensed third party content;
- Discovering materials can be legally used;
- Publishing material created.

OER: Benefits in Teaching

- Gaining access to the best possible resources
- Promotes scientific research and education as publicly open activities
- Bringing down costs for students
- Bringing down costs for course development for institutions
- Outreach to disadvantaged communities
- Assisting developing countries
- Becoming independent of publishers (~50/50)
- Creating more flexible materials
- Conducting research and development
- Buildings sustainable partnerships
Points for Action

- Further support is needed especially at the institutional level to facilitate capacity building in the use of digital resources and OER;
- A culture of collaboration between institutions needs to be established to harness the full potential of open content;
- More capacity building is needed at the institutional as well as national level to familiarise users with the benefits and limitation of open content licensing;
- Institutions need to establish set policies encouraging the wider use and reuse of open content.

The Research Team

<table>
<thead>
<tr>
<th>OERAsia Team Member</th>
<th>Region and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Emeritus Gajara Dhanarajan (Principal Investigator)</td>
<td>Malaysia: Wawasan Open University (WOU)</td>
</tr>
<tr>
<td>Professor Tsunéo Yamada</td>
<td>Japan: Open University of Japan (OUJ)</td>
</tr>
<tr>
<td>Professor Yong Kim</td>
<td>S. Korea: Korea National Open University (KNU)</td>
</tr>
<tr>
<td>Professor Li Yawanyu</td>
<td>China: Beijing Open University (BJU)</td>
</tr>
<tr>
<td>Dr. Yuen Kin Sun</td>
<td>Hong Kong: China Open University of Hong Kong (OUHK)</td>
</tr>
<tr>
<td>Dr. Alex Wong</td>
<td>Hong Kong: China Open University of Hong Kong (OUHK)</td>
</tr>
<tr>
<td>Professor Patricia Arinto</td>
<td>Philippines: University of the Philippines Open University (UPOU)</td>
</tr>
<tr>
<td>Professor Daryono</td>
<td>Indonesia: Universitas Terbuka Indonesia (UT)</td>
</tr>
<tr>
<td>Dr. Minh Do</td>
<td>Vietnam: Vietnam Foundation</td>
</tr>
<tr>
<td>Dr. Venkataraman Bala</td>
<td>India: Commonwealth of Learning (COL)</td>
</tr>
<tr>
<td>Dr. Bharathi Harishankar</td>
<td>India: University of Madras</td>
</tr>
<tr>
<td>Mr. Ishan Abeywardena</td>
<td>Malaysia: Wawasan Open University (WOU)</td>
</tr>
</tbody>
</table>
OER Asia Meeting: 16-17 April 2012
THE OPEN UNIVERSITY OF HONG KONG

Let’s discuss more over tea?

IshanAbeywardena:GuestLecture24th
and27thJune2013(STOU)
AViableModelforOERReuseinODLCaStudy

MainReference


Available at: http://www.col.org/resources/publications/Pages/detail.aspx?PID=441
Wawasan Open University (WOU)

Established in 2007 for adult learners
Vision: We aspire to be a vibrant learning community that inspires learning, supports innovation and nurtures all-round personal growth.

Mission: We commit ourselves to the expansion of opportunities in higher education and to teaching excellence in order to increase the level of knowledge and scholarship among all Malaysians.
ODLCourseDevelopmentTeam

- CourseTeamLeader(CTL)
- CourseCoordinator(CC)
- CourseWriter(s)(CW)
- AcademicMember(AM)
- InstructionalDesigner(s)(ID)
- Editor
- ExternalCourseAssessor(ECA)
- GraphicsDesigner(s)(GD)
- RepresentativefromLearningandLibraryServices(LLS)
- RepresentativefromInformationTechnologyServices(ITS)

CourseDevelopmentProcess

- Course Syllabus
- Draft Course Materials
  - Course Guide
  - Course Assessment (TMA, Exam)
- Finished Course Materials
  - Course Guide
  - Course Assessment (TMA, Exam)
- Final Product
  - Print and distribute Course Materials to students

Library & ITS

Wrap-around course: 12 months; Stand-alone course: 18 months
Course Development Approach

- Use pre-developed proprietary course material from more established ODL institutions such as the Open University of Hong Kong (OUHK) under license:
  - WOU pays royalties!
- Develop course material as wrap-around material to established textbooks.
  - WOU gives away textbooks for free!

Need for OER

1. Move away from proprietary course material under license;
2. Abandon the model which bundled costly textbooks with the course material;
3. Develop all the course material in-house from scratch as self-contained or "stand-alone";
4. Reduce course development times (stand-alone: 18 months);
5. Better utilize resources (CDT).
Institutional Policy on OER

The first official venture into OER was announced in the beginning of 2011 when the WOU Council endorsed the use of OER wherever possible in the development of course material.

WOU-OER Policy: Prepared by the Office of Assistant Vice Chancellor (Academic Support) and approved by the Senate, Management Board and Board of Governors of WOU (August 2012)

Available at: http://eprint.wou.edu.my/policies.html

Pilot Project

TCC242/05 Web Database Application

A five-credit-hour middle-level core Information Technology (IT) course (equivalent to a second-year course in a conventional University).

The course deals with the development of database-driven web applications using the PHP scripting language and MySQL databases in the Linux, Apache, PHP and MySQL environment commonly referred to as the “LAMP” architecture.
Reasons Behind Course Selection

1. The availability of required materials as OER;
2. The availability of official technical manuals released by php.net and mysql.com which can be used to cross-check the integrity of the OER material;
3. The composition of the course which includes theory and practical exercises;
4. The expertise available in the CDT with respect to the subject matter.

Methodology

1. Formation of the CDT
2. Identification of the relevant OER material
3. Adaptation of the OER material
4. Quality Assurance
Formation of the CDT

- The CTL, CC, CW, AM, ID, and ECA need to be subject matter experts in this particular area of IT.

- The composition of the CDT needs to be perfect with respect to the expertise as well as team dynamics.

- The team members need to have a general acceptance of the concept of OER and a thorough understanding of how to use it within the Creative Commons license framework.

The Team

<table>
<thead>
<tr>
<th>CDT Member</th>
<th>Level of Competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CTL/CC</td>
<td>Senior Lecturer in IT and Computer Science</td>
</tr>
<tr>
<td>2. CW</td>
<td>Senior R&amp;D Engineer in Software Development</td>
</tr>
<tr>
<td>3. AM</td>
<td>Lecturer in IT and Database Management</td>
</tr>
<tr>
<td>4. ECA</td>
<td>Professor in IT</td>
</tr>
<tr>
<td>5. ID</td>
<td>Senior Instructional Designer</td>
</tr>
</tbody>
</table>
Identification of OER Material

the CC was assigned the task of identifying suitable material for each of the topics:

- reviewed OER repositories were identified and shortlisted after discussion among the CDT;
- each of the repositories were manually reviewed using their native search mechanisms to locate the relevant OER material.

Selected Source of OER

**WIKIBOOKS**

<table>
<thead>
<tr>
<th>Language</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Open content textbooks 0.400+ pages</td>
</tr>
<tr>
<td>Español</td>
<td>Libros de contenido libre 0.660+ páginas</td>
</tr>
<tr>
<td>Português</td>
<td>Livros didáticos gratuitos 0.700+ páginas</td>
</tr>
<tr>
<td>Polski</td>
<td>Czytelnik narodowy 0.500+ stron</td>
</tr>
<tr>
<td>Italiano</td>
<td>Libri a contenuto aperto 0.500+ pagine</td>
</tr>
<tr>
<td>Nederlands</td>
<td>Leerboeken 0.700+ pagina</td>
</tr>
</tbody>
</table>

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Adaptation of the OER Material

Integration Model

- QA Process
- Adaptation of OER by CW
- Second draft of unit
- Pedagogical input by ID
- First draft of unit

Quality Assurance

- Vetting of the second draft of study unit
- Cross-checking the OER material with the official technical manuals
- Amendment of second draft of study unit
- Produce third draft

- Vetting of the third draft of study unit
- Produce ECA report on the suitability of unit and amendments needed

- Discuss how best the comments by the ECA can be incorporated into study unit

- Amend third draft of study unit
- Produce fourth draft of study unit

- Vetting of the fourth draft of study unit
- Acceptance of the draft
- Forward to Editor for production
Final Product

The OER content adapted from Wikibooks comprised approximately 70% of the complete course material.

The remaining 30% was developed by the course development team, which included assessments, manuals, laboratory exercises, and course guides.

Course has been successfully presented twice in January 2012 and January 2013 semesters.

Available for free download:
http://eprint.wou.edu.my/31/

Course Development Time

- Usual course development time for a “stand-alone” course is 18 months.

- TCC 242/05 Web Database Application went from the Blueprint stage to the Approval stage in approximately 10 months.
Course Development Cost

<table>
<thead>
<tr>
<th>Course</th>
<th>Type</th>
<th>Completion Date</th>
<th>Development Cost (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TIC304/05 Satellite and Optical Communication</td>
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<td>01-January-2010</td>
<td>21,365.48</td>
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<td>2. WUC116/05 University Mathematics for General Studies</td>
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<td>01-July-2010</td>
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<td>3. TCC240/05 Object-Oriented Analysis and Design</td>
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<td>24,635.79</td>
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</tbody>
</table>

The Reasons Behind the High Cost

• the CW's time saved with respect to writing the course material was spent ensuring the integrity of the OER content;

• additional content needed to be developed by the CW to bridge the gaps in the disparate OER material;

• the standard WOUQA process needed to be followed to ensure that the course material was at an acceptable standard.
CostSavingsforInstitutions

The true costs savings for an institution would be visible only when more and more OER-based course materials are developed and shared freely among institutions through a "Partnerships and Exchanges" model (Downes, 2007) reducing the need for development of common modules.

Licensing

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Questions

About...

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- MSc in Wireless Enterprise Business Systems, Brunel University, UK.
- MSc in Engineering Management, Brunel University, UK.
- BSc in Computer Science, Bangalore University, India.
- PhD Candidate in Computer Science, University Malaya, Malaysia. Areas of specialisation: text mining, metadata, faceted search

Professional Membership
- Institute of Electrical and Electronic Engineers (MIEEE)
- British Computer Society (MBCS)
- Institution of Engineering and Technology (MIET)
- Microsoft Technology Associate (MTA)

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Professional Profile: http://www.linkedin.com/in/ishansa
Research Profile: http://www.researchgate.net/profile/Ishan_Abe
Tech Blog: http://www.ishantalks.com
E-mail: ishansa@wou.edu.my

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- http://commons.wikimedia.org/wiki/File/Active_learning_-_Jigsaw_map_of_Southeast_Asia.jpg