

Adoption and Utilization of Open Educational Resources in Indonesia: A ReviewG. Dhanarajan

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Introduction

Indonesia is an archipelagic nation made up of 17,000 islands. It is among the nine or 10 big population countries with well over 224.4 million people. Slightly more than half of the Indonesian people live in urban conurbations with a per capita income of USD 1,918. The population is a mosaic of ethnicities with well over 1,000 local dialects. Bahasa Indonesia is the national language, the medium of instruction in schools and universities. The Indonesian constitution grants every citizen the right to education as basic tenet. Primary education is compulsory and in response to its EFA undertaking the country now has extended compulsory education to nine years of schooling i.e. six years of primary and three years of middle school. On completion of middle or junior school young people may continue with 3 more additional years of senior school or enter the employment market. Entry into tertiary education requires senior high school certification. Since 2009 mandate by law the country's allocation to education in its annual expenditure budget has been 20%¹. UNDP in measuring the country's expenditure on education as a *percentage of its GDP* in 2012 quoted 2.8%.²

Indonesia has been remarkably successful in its efforts to bringing a larger proportion of its people into education. Combined GRE in education was 73.37% in 2011 and the adult literacy rate has exceeded 92% by 2009. Table 1 below illustrates a slow but gradual progress in the country's educational achievement during a five-year period for which time series data is available. This progress in all recent reports seems to indicate a promising trajectory.

Table 1. Selected Indicators of Participation Rate in School³

Selected Indicators	2003	2004	2005	2006	2007
Participation Rate at School (%)					
Age 7-12 Years	96,42	96,77	97,14	97,39	97,6

¹ Law No. 41 of 2008 Concerning the Indonesia Revenues and Expenditures Planning 2009-2014. [pers. Com. Daryono]

² UNDP [2013] : Human Development Report 2013: The Rise of the South – Human Progress in a Diverse World, United Nations development Programme, New York .

http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf

³ HDI Report; Statistik Pendidikan Indonesia

Age 13-15 Years	81,01	83,49	84,02	84,08	84,26
Age 16-18 Years	50,97	53,48	53,86	53,92	54,61
Highest Level of Education Age over 10 Years (%)					
Not Completing Primary School	21,87	15,31	21,46	20,77	20,37
Primary School	33,42	31,87	32,34	31,67	31,19
Junior Secondary School	16,65	20,12	17,06	17,56	17,49
Senior High School	19,56	23,72	21,32	22,56	23,37
Literacy Rate for Age over 10 Years	90,93	91,47	91,91	92,39	92,74

Higher Education

There are 3,115 higher education institutions in Indonesia, comprising 104 state institutions and 3,011 private institutions. In terms of organisational types, they can be categorised into 460 universities, 1,306 higher schools (*sekolah tinggi*), 162 polytechnics, 54 institutes, and 1,034 academies. In addition about 62 two-year community colleges have been developed. In terms of geographical distribution, these institutions are located in 34 provinces and 507 cities and districts throughout the country, including in these 5 major cities of Medan (157), Bandung (130), Makassar (112), South Jakarta Selatan (104), and East Jakarta (94).⁴

Admission to higher education is competitive, particular that in state institutions. There were over 2.26 million applicants to higher education and only 1.08 million, or less than half, were accepted, in 2010. In terms of distribution of enrolment, there are 910,879 in state institutions (excluding UT), 490,661 students in the state open university (UTI), and 2,210,165 students in private institutions. Demand for higher education has been increasing over the years, and this has resulted in pressures for expansion in higher education enrolments and institutions. The trends for expansion in higher education will continue as the country still has to improve participation rates in this sector. Slightly more women than men seemed to be participating in higher education. Participation in terms of gender can be seen in the following Table 2.

Table 2. Students in Higher Education Based on Gender⁵

Type of Higher Education Institution	Male	Female	Total
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⁴ Accessed on 04-08-2014 from http://otda.kemendagri.go.id/images/file/data2014/file_konten/jumlah_daerah_otonom_ri.pdf, retrieved on August 1st, 2014

⁵ Perspektif PT DIKTI; Rembugnas 2010 Dikti

State Institutions	448.457	462.422	910.879
Open University	166.845	323.816	490.661
Private Institutions	1.135.655	1074.510	2.210.165
Grand Totla	1.750.957	1.860.748	3.611.705
Percentage	48.48%	51.52%	100%

Higher education in Indonesia is confronted with the challenges of access and equity and quality. Access relates to physical as well as non-physical factors. The large number of higher education providers throughout the country has facilitated access to the system, and the UT has further made possible easier access to higher education by students from the remote areas of the country. However, there are issues relating to non-physical factors of access that have to be addressed, such as cost, flexibility, opportunity, economics, work commitments, and other restricting factors. Despite the reasonable numbers and location of higher education institutions, this system is considered expensive and inflexible to many students. Equity issues continue to engage political leaders and policy makers as they try to balance participation disparities between the rich, the middle class and the poor as well between rural and urban populations. Equally, quality concerns also preoccupy Indonesian planners and community at large. The proliferation of for-profit private institutions and inadequate resourcing of public institutions seems to have resulted in the erosion of standards. Much is being done to improve the situation but much more is required to be done if the aspirations of Higher Education Master Plans are to be achieved.⁶

ICT in Higher Education

Indonesia announced a five year action plan for the development and implementation of ICT for the nation in 2001. The action plans also included provisions for education which among other things envisaged putting in place ICT networks for the public and private universities, embedding ICT as an essential part of the curricula, teaching and learning tools and participate in Global Development Learning networks [A World Bank effort called GDLN]. The primary focus of all these efforts is first to connect all schools and second to train teachers in the use of ICT and build capacity amongst Indonesians to use the technologies for a multiplicity of academic purposes.

Indonesia
Population: 254 million (est. 2014)
Median age: 29.2

⁶ Wicaksono, T.Y. and Friawan, D. [2011] Recent development in Higher Education in Indonesia: Issues and Challenges *in* Financing Higher Education & Economic Development in East Asia. [Ed. S. Armstrong and B. Chapman]. Australian National University E Press. Canberra, Australia.

Literacy Rates: 92.8
Telephone (main lines): 38 million
Telephones (cellular): 282 million
% Households with PCs: 36.7
Internet hosts: 1.34 million
Internet users: 72 million
Source: Daryono (pers. Com.)

At the pre tertiary level this manifests itself in a number of initiatives such as *Block Grants* for selected secondary schools to procure computer facilities, a public private partnership between the Ministry of National Education and the Indonesian Internet Service Provider Association called *High School 2000* that connects high schools to the internet, a *Wide Area Network City [Wan-City]* that built a wireless-based connection among schools in 30 cities with multiple digital services, a *One School One computer Laboratory [OSOCL]* programme where a small number of rural schools were funded to set up computer laboratories with support from multinationals and a SchoolNet programme called *SpeedySchoolNet* which enabled some 30,000 primary and secondary schools to access educational materials through the web. A special programme for Vocational schools – the *Schools Internet Network* programme with the aim of increasing Internet accessibility was also launched in 2001 with a number of PC and servers given to all publicly funded vocational schools. In addition a communication network – the School Information Network was created in every region with the aim of teaching basic ICT knowledge and skills to tech-voc trainees. At the higher education level a number of initiatives were also launched during this period; the most important of these, besides financial provisions to enable higher education institutions to build the necessary ICT infrastructure included the following:

- *Global Distance Learning Network (GDLN) Indonesia* established in 2004 to improve access to global knowledge, narrow access disparity among regions, and introduce latest technology to wider audience The GDLN Indonesia activities include course content development, policy communication by the DGHE, public lectures, seminars and trainings using video-conferencing facilities.
- *INHERENT*, launched in 2008, is designed to link universities and HEIs throughout the Indonesian archipelago. The network covers over 220 public and private universities, allowing for information transfer, resource sharing and distance learning opportunities. Moreover, the World Bank's Global Development Learning Network allows any Indonesian university connected to INHERENT to access distance learning opportunities throughout South-East Asia.
- *Jardiknas [Jaringan Pendidikan Nasional]* the National Education Network with the aims to improve teachers, competencies, help prepare teacher certification, support teaching and

learning and management of schools, and enhance competency-based curriculum development. This knowledge repository includes e-learning resources, digital library, online laboratory, and other online knowledge resources.

Given the size and geographical spread of the country, besides the disparities inherent in many middle income countries between urban and rural areas due to the socio-economic structures, infrastructure, skills and knowledge levels, progress in realizing the full potential of ICT for educational purposes is somewhat patchy in Indonesia. In a recent report published by UNESCO the following comments were made:

*"Indonesia lacks a coherent and cohesive Master Plan for implementing ICT throughout its education system, perhaps as a result of the continued efforts to decentralize its governmental processes. Without a forward-looking plan that can go beyond the electoral cycle and bring public and private actors together, piecemeal and stopgap measures will continue to be introduced. There are several constraints on the use of ICT in schools in Indonesia, including the lack of appropriate ICT equipment and infrastructure (including telephone lines and reliable electricity supply); the lack of skilled teachers who can integrate ICT in the teaching and learning process; the unavailability of personnel to manage ICT equipment, particularly in rural areas; the prohibitively high cost of Internet access in much of Indonesia; and the lack of digital learning resources written in Bahasa....One potential growth opportunity exists in the development of mobile learning applications. Indonesia has the highest dependence on mobile Internet access in Southeast Asia. Around 48 percent of Internet users in Indonesia use a mobile phone to access the Internet, while another 13 percent use other handheld multimedia devices."*⁷

There is an inherent gap between the nation's aspiration and its capacities to fulfill those ICT aspirations. This gap will make it difficult for the fast, rapid and nationwide adoption of newer technologies including the creation and use of OER especially in semi urban and rural Indonesia.

The Legal Environment

Indonesia is a signatory too all of the international copyright conventions; it is also a member of WIPO. Copyright protection is enshrined in the current Copyright Act No. 19 of 2002. In law, the notion of copyright is "the exclusive rights for the creator or the recipient the right to publish or reproduce the creations or give permission for it by not reducing the restrictions according to the laws and regulations that apply" (Article 1, point 1). There are some exceptions to e.g.:

Indonesian Copyrights law respects education and research activity, in the article 15 Copyrights Law Number 19/2002 stated utilization (use) of copyrights material for research, education and scientific activity by the condition that source (copyrights material) must be mentioned is not considered as a copyrights infringement. Similar with the issue (education), reproduce of copyrights material is not infringement for disable, unless the use of copyrights material for commercial reproduction. For home users (for their own use) reproducing CD, MP3 and the other computer program is allowed. News in any media (electronic and non electronic)

⁷ UNESCO [2013]: ICT in Education: Policy, Infrastructure and ODA Status in Selected ASEAN Countries. Unesco Asia Pacific Regional Bureau for Education APEID/ICT in Education. UNESCO, Bangkok, Thailand.

*protected copyrights, reproduced of news wholly or partially for review or criticism is allowed, with provision the source must be mentioned clearly and complete (article 14 Copyrights Law No. 19/2002).*⁸

This window does allow for, subject to interpretation, the development of a Commons environment especially in promoting OER. Parallel to the principles of fair use and fair dealing to educational materials adopted by Copy Right Law 19 of 2002, the Law No. 12 of 2012 on Higher Education stipulates that the government shall develop open educational resources.⁹ The Ministry of National Education has expressed an intention through APTIKOM to move in this direction with policy instruments. Indonesia's Creative Commons affiliates have the following CC provisions:

CC-BY 3.0 Indonesia	CC-BY-NC 3.0 Indonesia	CC-BY-NC-ND 3.0 Indonesia	CC-BY-NC-SA 3.0 Indonesia	CC-BY-ND 3.0 Indonesia	CC-BY-SA 3.0 Indonesia
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OER Activities and Research

Human resources and development in Indonesia is being guided by the Indonesian Economic Masterplan [MP3E1] which aims to transform the nation into a developed country by 2025. In tandem with this grand plan the Indonesian Parliament passed the BILL on Higher Education which among other things wants improvement in quality, access and governance. The Bill wishes to further promote open education and OER is seen as one way of achieving this. APTIKOM [] an association of higher education institutions in computer science and information has been tasked by the government to promote OER.¹⁰ In 2013 APTIKOM launched OERINDONESIA [<http://www.oerindonesia.com>]¹¹ to its 1000 member colleges and universities. Among early responders to these initiatives are some of the country's better-known universities such as Universitas Indonesia (<http://www.ui.ac.id/>) Universitas Sumatera Utara (<http://ocw.usu.ac.id/>) and the Udayana University (<http://www.unud.ac.id/eng/>). All are members of the OCW consortium but except Universitas Utara Sumatra, evidence of OER activities in the other two was not seen.

Much earlier to the APTIKOM initiatives, the Open University of Indonesia -Universitas Terbuka Indonesia [UTI – (<http://www.ut.ac.id/en/>)] which over the last 30 years has been a major provider of

⁸ Accessed from *Consumers in the Digital Age* and licensed under CC-BY-SA on 26 July, 2014 from <http://a2knetwork.org/reports/indonesia>

⁹ Art. 17 (4) para. 1. Law No. 12 of 2012 concerning Indonesia Higher Education.

¹⁰ Indrajit, Richardus E. (2014). APTIKOM Open Education Architectural Framework. In Proceedings of OpenCourseWare Consortium Global 2014: Open Education for a Multicultural World.

¹¹ At the time writing this site was dormant

open education at the tertiary level launched its Open license Policy on Educational Material in 2012. The policy spells out the nature of the arrangement including the use of the CC NC-SA license. Among the materials under this policy is teacher enhancement content.

Like many other countries in S. E. Asia, despite the promulgation by the Indonesian Ministry of National Education on OER and the subscription of some 1000 Colleges and Universities to APTIKOM's OER initiative, except for UTI, uptake seems to be somewhat modest. Daryono and Prasetyo consider a lack of awareness on the benefits and value of OER amongst the academic community.¹² But there may be other underlying causes as well including weaknesses in the nation's ability to effectively implement its ICT policies in education, the state of the implementation of copyright regulations which makes it easier to access web based material regardless of their IPR as well as an absence of comprehensive skills on the part of many in the education sector to produce or use OER effectively.

The following list of sites and publications illustrate Indonesian efforts on OER:

1. **E - dukasi . net** contains interactive learning resources in multimedia formats, animation, simulation, image, video, audio and structured interest. [<http://edukasi.kemdikbud.go.id/>].
2. **Electronic School Books**. A website that contains some 1331 books catering to primary, junior and high school curriculum.
[<http://bse.kemdikbud.go.id/buku/kurikulum2013>]
1. **INHERENT** is a closed network data communication system between universities in Indonesia. While sharing network infrastructure the system is also expected to be an enabler for the sharing of teaching and learning resources. [<http://www.inherent-dikti.net/>]
2. **Jardiknas Schoolnet** is a network for schools created by the Ministry of National Education connecting schools, education departments at the district and provincial levels. It is made up of four geographical zones to allow the technology to fit the needs of a particular zone. Jardiknas facilitates the strengthening of capacities to use technology for teaching, learning and administration. It is a source of curricula materials as well.
[<http://setjen.kemdikbud.go.id/pustekkom/>]

Recent Publications on OER

Recent articles on OER in Indonesia are listed below:

1. Daryono and Belawati T, (2013) Prospect and Challenges for Introduction of OER in Indonesia in *Open Educational Resources: An Asian Perspective*, Gajjaraj Dhanarajan and David Porter ed. Commonwealth of Learning.

¹² Daryono and D. Prasetyo [2014] Harmonising Universitas Terbuka's OER Platform: Increasing Access and Sharing Capability. Paper Presented at the 2nd Regional Symposium on Open educational Resources, Penang, Malaysia.

2. Kusmawan Udan (2013) Teacher's Online Forum: An online interactive forum for sustaining teacher professional development, in *Open Educational Resources: an Asian Perspective*, Gajaraj Dhanarajan and David Porter ed. Commonwealth of Learning.
3. Mukti Amini (2013) Developing Model through the Integration of Facebook and Digital References for Online Tutorial Child Development Psychology. *OCWC Global Conference Proceeding 2013*.
4. Irsanti Widuri Asih (2013) The Web-based Seminar (Webinar) as An Open Courseware For Universitas Terbuka's Students, *OCWC Global Conference Proceeding 2013*.
5. Heni Safitri, Tuti Purwoningsih (2012) Integrating OERs in Online Tutorial to Enhance the Quality of Student Teacher Learning, *OCWC Global Conference Proceeding 2013*.
6. Lidwina Sri Ardiasih (2013) The Online Assessment for BIPA Program by Utilizing OER, *OCWC Global Conference Proceeding 2013*.
7. Dimas Agung Prasetyo, Tengku Eduard Azwar Sinar (2013) The Development of Virtual Reading Room in Universitas Terbuka, *OCWC Global Conference Proceeding 2013*.
8. Denny Setiawan, Della Raymena Jovanka (2013) INTEGRATING UT'S OPEN COURSE WARE TO FACE TO FACE TUTORIAL A Case Study in "Integrated Learning" Subject for PAUD Students of UT, *OCWC Global Conference Proceeding 2013*.
9. Daryono and P. Dimas [2014]: Harmonisinf Universitas Terbuka's OER Platform: Increasing Access and Sharing Capability. *Proceedings of 2nd Regional Symposium on Open educational Resources: Beyond Advocacy, Research and Policy, 24-27 June, 2014, Penang, Malaysia*.
10. Nizam and Ari Santoso [2013] Indonesia: OER Initiatives and ICT in Teachers' Training. Paper presented in UNESCO – OER Follow up meeting, Paris.

Repositories

There are about thirty two Open Access Institutional Repositories [OAIR] in Academic Libraries in Indonesia.¹³ None of them seem to have any special provision for OER though all of them state they hold curriculum materials in the repositories. University Terbuka Indonesia is in the process of planning such a repository as part of a network arrangement in association with OERASIA [<http://www.oerasia.org>] and GLOBE [Global Learning Objects Brokered Exchange [<http://globe-info.org/>].

¹³ Accessed on 28-07-14 from <http://repository.uinjkt.ac.id/dspace/bitstream/123456789/23755/3/IDA-IPI.pdf>