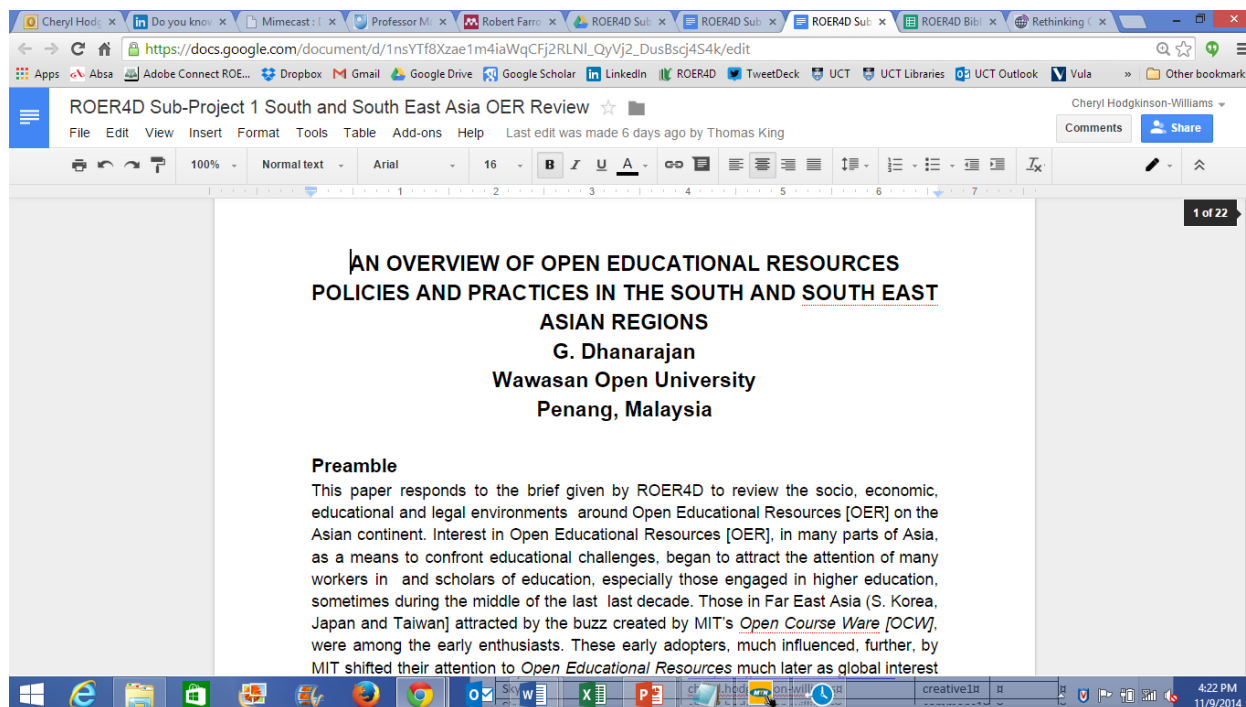




An Analysis of Open Educational Resources Policies and Implementation Practices across South and Southeast Asia

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Preamble

This paper responds to the brief given by ROER4D to review the socio, economic, educational and legal environments around Open Educational Resources [OER] on the Asian continent. Interest in Open Educational Resources [OER], in many parts of Asia, as a means to confront educational challenges, began to attract the attention of many workers in and scholars of education, especially those engaged in higher education, sometimes during the middle of the last last decade. Those in Far East Asia (S. Korea, Japan and Taiwan] attracted by the buzz created by MIT's *Open Course Ware [OCW]*, were among the early enthusiasts. These early adopters, much influenced, further, by MIT shifted their attention to *Open Educational Resources* much later as global interest began to focus more on OER rather than OCW with its inbuilt limitations. This paper, while focussed on OER, examines the issue within the broader canvass of educational issues confronting many countries.

The paper draws, extensively on two reports that Dhanarajan did earlier. They are:

1. Dhanarajan, G and D. Porter [2013]: Open Educational Resources: An Asian Perspective. Commonwealth of Learning, Vancouver, Canada.
2. Asian Development Bank [2012]: Access without equity: Finding a better balance in higher education in Asia. Asian Development Bank, Manila, Philippines

Socio-Economic Context

The landmass including island states, stretching between the Korean peninsula in the east and the borders of Afghanistan, in the west make up the continent of Asia. This continuous landmass and the islands are home to some 4.3 billion people. These people are spread over some 30 nations and two of them account for about two-fifths of humanity. Their civilisations are ancient and so too are their traditions of learning and their storehouse of knowledge. There are more than a 1,000 ethnic groups and speak 600 languages with variations in dialects within them, and of these spoken languages, some 60 have written scripts. Despite the wealth of resources, culture, knowledge and traditions of learning, this is a continent that faces tremendous challenges. Of all the challenges, none is more crucial than the nature, growth and structure of Asia's populations.

The growth of populations and their needs will continue to pose the greatest challenge to the nations and institutions of this continent. The populations of Asia's poor countries will grow much faster and vastly outnumber Asia's richer nations. At least six countries in Asia [China, India, Indonesia, Japan, Bangladesh and Pakistan] have more than 100 million people. Not only will populations grow but the age structure will also change. The richer parts of Asia will get older while the poorer parts of Asia will continue to be young. While those of us who find ourselves in locations such as Japan, Singapore, Korea, Hong Kong, etc., may have to consider educating individuals entering the third age, others in places such as India, Bangladesh, Thailand, Indonesia, Pakistan and Bangladesh may have to cope with a massive increase in providing basic, technical and undergraduate levels of education for the 6 to 24 year-olds.

The size of the populations and their economic status will also lead to another phenomenon which will have another kind of impact on provisions of education. Asia's population is still largely rural. This is not expected to remain so. There is a drift from rural to urban locations. What this drift does is to take the poorly educated low skilled rural person to urban areas. This drift takes place in both the rich and poor Asian nations alike. In 1955, about 271 million Asians lived in cities. By 1985, this number had grown to 747 million and by the end of the century around 1.2 billion Asians are expected to live, work, seek education and leisure in about 28 mega cities (a mega city is one with more than 4 million inhabitants). They are also expected to progress economically to middle class status by 2030. Table 1 below presents the HDI of a few

selected countries in Asia almost all of whom have moved higher in their human development status [e.g. Cambodia, Lao PDR, Bangladesh, India, Mongolia, Philippines, Vietnam].¹

Table 1. Human Development Indicators Of a Select Number of Asian countries [2012]

HDI Rank	COUNTRIES	HDI 2012	Life Expectancy at Birth	Expected Mean Years in School – [2011]	GDP per Capita [2005 PPP\$]	Public Expenditure on Education [% of GDP] ² (YYYY reporting year)
101	P R China	0.699	73.7	11.7	7,418	na
138	Cambodia	0.543	63.6	10.5	2,080	2.6 [2010]
136	India	0.554	65.8	10.7	3,203	3.2 [2011]
121	Indonesia	0.629	69.8	12.9	4,094	2.8 [2011]
10	Japan	0.912	83.6	15.3	30,660	3.8 [2011]
138	Lao PDR	0.543	63.6	10.1	2,464	2.8 [2010]
64	Malaysia	0.769	74.5	12.6	13,672	5.9 [2011]
108	Mongolia	0.675	68.8	8.3 ³	4,178	5.5 [2011]
114	Philippines	0.654	69	11.7	3,631	2.7 [2009]
18	Singapore	0.895	81.2	14.4	53,591	3.2 [2012]
12	S. Korea	0.909	80.7	17.2	27,541	5.0 [2009]

¹ 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

² World Bank Data – figure in bracket indicates the latest year of data

³

103	Thailand	0.69	74.3	12.3	7, 633	5.8 [2011]
127	Vietnam	0.617	75.4	11.9	3,013	6.3 [2010]

It is in this context of big, growing and shifting populations that the question of access to learning and knowledge and within that context a role for Open Educational Resources [OER] needs to be addressed.

While we consider this question, it may not be out of place to remind ourselves that the promoters of open learning have constantly claimed that one good reason to establish 'open learning' infrastructure and build capacities is to take knowledge and training to those parts of the Asian populations that are marginalised, isolated, underprivileged and unreachable.

Higher Education in Asia

Over the past forty years Asian nations have witnessed an enormous transformation of higher education in Asia at speeds that are quite phenomenal in many aspects. The intrusion of technology, into the educational environment has had some influence but by and large the growth of higher education both in terms of participation as well as provision has been mostly driven by high demand and factors such as the recognition and importance of higher education for both social and economic development, the rapid progress of globalisation and its accompanying demand of talent, the amazing transformation of societies from being mere providers of cheap unskilled or semi-skilled labour for production of goods to being suppliers of services requiring higher levels of skills and knowledge, the mobility of knowledge work across physical borders and a desire by citizens wishing to claim their rights to access learning at all levels.

By any measure the higher education developments in Asia, is a remarkable success story – enrolments have grown, participation in higher education has diversified, literally hundreds of new universities have been created and these institutions are experimenting with new forms of instructional delivery. The nations that make up the continent of Asia have responded to the demand for higher learning in a variety of ways and their means to make the provision available. While overall trends have been upwardly unidirectional, patterns of the provision, growth, focus and purpose seem very much reflective of the socioeconomic and state of development of the countries [Table 2].

Table 2 Salient Traits of the Higher Education Sysytems in Selected Asian Economies⁴

Grouping/Economy	Salient Characteristics
Developing Economies	
Cambodia Laos Mongolia Vietnam	Lower and low-middle income countries in which the higher education systems are focused primarily on system expansion, increasing enrolments, and infrastructure development
Emerging Economies	
China India	Giant emerging economies with largest higher education systems in the world and fastest growing systems in Asia; higher education policies and practices closely watched and influential across other higher education systems in the region; they have several world-ranked universities, though most continue to need quality improvement
Indonesia Malaysia Philippines Sri Lanka Thailand	Other emerging economies with well-established and growing higher education systems; now increasingly focused on quality improvement
Developed Economies	
Hong Kong, China Singapore	Small developed urban economies with mature, highly respected higher education systems characterized by slow growth
Japan Korea, Republic of	Large developed economies with mature higher education systems of respected quality but now facing declining student enrollments

Demand for Higher Education

⁴ Asian Development Bank [2011]: Higher education Across Asia: An Overview of Issues and Strategies. Asian development Bank, Manila, Philippines

The success of expanding provisions of basic education, through the EFA efforts throughout the first decade of the 21st century has had a tremendous impact on enrolments in secondary schooling first and subsequently post-secondary education, in most parts of emerging Asia. Despite the lack of opportunities and accommodation, the numbers of young people coming out of primary schooling and moving on to secondary schooling has been growing. Between 1999 and 2008 this expansion in participation averaged around 66% in F.E and S.E Asia and around 51% in S. Asia. China literally doubled its participation rates during this period and India on the other hand saw an increase of 25%. Besides these two countries others such as Mongolia, Cambodia, Laos, Indonesia and Thailand also improved participation rates between 50% and 60%.⁵

A major outcome of increased participation in basic education and its consequent growth in secondary education has been the demand for higher especially at universities [Table 2]. Given the nature of the demography of South and South East Asia this demand is unlikely to diminish in the middle or longer term till at least 2030. Globally there are many predictions as to the nature of the upward demand curve. Most often than not these predictions end up underestimating such growth. For instance in 2002 the International Development Programme [IDP] of Australia modelled a global demand for higher education which projected an annual rate of 3.5% between 1990 and 2025 meaning in actual numbers a growth from around 48 million to 159 million.⁶ Actually global growth between 1990 and 2007 was around 4.5% annually with most of the growth happening in Asia. In 2007 enrolments in higher education globally was around 152 million of which around 107 million were located in Asia.

Table 3. Gross Enrolments Ratios (%) in Higher Education in Selected Asian Economies,[1999-2010]⁷

Economy	99	00	01	02	03	04	05	06	07	08	09	10
Cambodia												
RC												

⁵ UNESCO [2010]: Global Education Digest: Comparing Education Statistics Around the World 2010. UNESCO Institute of Statistics, Montreal, Quebec, Canada. Available: <http://unesdoc.unesco.org/images/0018/001894/189433e.pdf>

⁶ Olsen, A. [2003]: e-Learning in Asia: Supply and Demand. International Higher Education . winter 2003.USA: Centre for International Higher Education, Boston College. Accessed on 11-7-14 from :http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/News30/text004.htm

⁷ Asian Development Bank [2012]: Access without equity: Finding a better balance in higher education in Asia. Asian Development Bank, Manila, Philippines

India													
Indonesia													
Japan													
Korea, Republic										2	4	4	3
Lao PDR													
Malaysia													
Mongolia													
Philippines													
Singapore													
Thailand													
Vietnam													

- = data missing, Lao PDR = Lao People's Democratic Republic, PRC=People's Republic of China.

Note: Gross enrolment ratio is the ratio of total enrolment of International Standard Classification of Education (ISCED); Levels 5 and 6 except Singapore, ISCED level 5 means "short cycle higher education or equivalent," and ISCED level 6 is "bachelor level education or equivalent." Singapore data: Higher education is Type A (University) education and Type B (practical/technical/occupationally specific programs) education.

Sources: UIS (2011). *Singapore Education Statistics Digest*. UIS Singapore. *Singapore Education Statistics Digest_online*.

*Higher education demand projections over the longer term are better known for their uncertainty than their certainty.*⁸ However given the continuing growth of young productive populations in most parts of the continent and the willingness of almost all Asian nations to invest in higher education, both through the national and private purse, the trend of increasing demand can be expected to continue. Through examining population and demographic projections of the relevant age cohorts, a German study projected that by 2025 some 263 million individuals can be expected to seek

⁸ Asian Development Bank [2012]: Access without equity: Finding a better balance in higher education in Asia. Asian Development Bank, Manila, Philippines

participation in higher education. China and India, the two most populous countries on the continent may have to provide around 45 and 61 million places, respectively.⁹

In tandem with the demand the supply of higher education provisions has also seen enormous growth on the continent. To begin with, Governments of the continent have been setting very ambitious targets of between 30 and 60% participation rates by the year 2025 from present levels of about 15-20%. Some countries such as Philippines, Malaysia, Thailand and Indonesia are already reaching and even exceeding the lower end of the targets while others like India and China are expected to do so in the next few years. Financing the growth has involved bringing the private sector into play. More than half the higher education institutions in many Asian countries are private enterprises.

Table 4. Number and Types of HEIs in a selected Asian Countries¹⁰

Country	3-4 Degree & Postgraduate Schools	2-4 Year Undergraduate Schools	2&3 Year Diploma Schools	Short Certificate Schools	Professional and Technical Schools
Cambodia	69	9	-	-	-
PR China	1,237	1,264	1878	-	-
India	504	28,339	-	-	3533
Indonesia	480	3967	162	-	-
Lao PDR	34	-	11	-	-
Malaysia	57	488	24	37	-
Philippines	1710	-	114	30	-
S. Korea	197	152	-	-	-
Sri Lanka	15	16	-	-	-
Thailand	102	32	19	-	-

⁹ Brandenburg, U., D.Carr, S. Donauer, and C. Berthold. 2008. Analysing the Future Market—Target Countries for German HEIs. Centre for Higher Education Development . Working paper No. 107.

¹⁰ Data extrapolated from the Asian Development Bank: *ibid*

The greater participation of private for profit participation seems to have resulted in unintended consequences such as erosion of equitable access, higher cost to users and the erosion of quality. By their very nature private HEIs are almost all demand absorbing and in the rush towards profitability costs and quality often gets compromised. In 2012 the Asian Development Bank¹¹ carried out a series of studies on the Dynamics of Higher Education. While generally upbeat about the higher education environment, the report also highlighted a set of '*interwoven challenges*'. These challenges among others range from coping with the continuous demand to balancing finances in times of citizens clamour of more and better welfare services. As higher education, on the continent, positions to move forward, it will have to address among other things equitable access, quality, relevance, and above all find a balance within a very conflicting environment. Numerous studies and reports from around the world are advocating that under such conditions, a meaningful role for ICTs in educational systems are an imperative and more recently, in the last decade or so the use of open educational resources, especially in the context of quality, has been gaining traction.^{12 13}

14

ICTs and Educational Systems in Asia

All Asian nations have developed an affinity for the use of Information and Communication Technologies to serve their social and economic needs, including education in a variety of ways. These technological tools have been employed to deliver education in various sectors and levels of education. Institutions having been using both low and high technologies and many that have been using the low technologies such as analogue broadcast radio and television and print have been gradually moving in tandem with the evolution of the technologies i.e. from analogue to the digital using the Internet, the Web and other emerging multimedia technologies. Amongst a few, pedagogy has also kept pace along with the evolution of the technologies, albeit not at the same pace as the technologies themselves. Having an affinity to use ICTs for purposes of education and training and being able to use and benefit from the technologies are somewhat different. While the former is driven by passion, enthusiasm and aspiration the latter is dependent on infrastructure, policy, economics and knowhow.

¹¹ ADB [2011]: Higher Education Across Asia: An Overview of Issues and Strategies. Asian Development Bank, Manila, The Philippines.

¹² World Bank [2013]: ICT and Education: An Overview accessed on 11-07-14 from <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:22157535~menuPK:617610~pagePK:148956~piPK:216618~theSitePK:282386~isCURL:Y,00.html>

¹³ UNESCO [IIEP]

¹⁴ UNESCO Bangkok

Good, effective, reliable, affordable and a well-functioning ICT environment is an essential requirement for any venture in the use of OER in educational and training settings. According to recent data from the Internet World Stats (2013), Asia has grown modestly well in its ICT and associated provisions. For instance electricity penetration has grown beyond 79% of households, though reliability of supply varies from country to country and within countries between rural and urban areas. Fig. 1 reflects the proportion of educational institutions with basic electrical and telecommunication infrastructure.

Fig. 1: Proportion of primary and secondary schools with basic electrical and telecommunication infrastructure in selected Asian countries.¹⁵

With better supply of power not surprising the use of technological appliances has also witnessed an upward trend. By 2012 the PC penetration rate in Asia overall had reached almost 42 per 100 households. There is however huge variations say between the high income Asian countries such as high Singapore and middle income [Malaysia, Indonesia] countries and those that are still in the low income bracket [Nepal, Cambodia]. It must be noted that there are large differences in the rates between urban and rural countries. By 2012 more schools on the continent had computing appliances available and assisted by development programmes such One Lap-Top per Child [OLPC]¹⁶, the proportion of computers available in the classroom has seen remarkable improvement in the poorer countries of the continent.[Fig.2] But inter country disparities are high e.g. Singapore and Nepal or Malaysia and Cambodia.

Figure 2: Learner to Computer ratio in primary and secondary schools in Selected Asian countries.¹⁷

Table 5 summarises data of the core indicators on access to and use of a broad range of ICTs by households and individuals in a select list of Asian countries. For example, in 2012, for the five countries and regions with the highest penetration rate, the mobile phone penetration rate on average was 214 per 100 people, while for the five countries and regions with the lowest penetration rates it was just 35 per 100 people. There were 1.076 billion Internet users in Asia with a penetration rate of 27.5%. Asians make up 44.8% of the world Internet user population. Mass broadcast media [TV and Radio] had reached beyond 83% by 2011 in a number of countries across the continent. These are impressive achievements.

¹⁵ UNESCO [2014]: Information and Communication Technology [ICT] in Education in Asia: A comparative analysis across Asia. UNESCO Institute of Statistics, Montreal, Canada

¹⁶ one.laptop.org/

¹⁷ UNESCO [2014]: Information and Communication Technology [ICT] in Education in Asia: A comparative analysis across Asia. UNESCO Institute of Statistics, Montreal, Canada

But, despite enormous efforts and investment into IT infrastructure the digital divide is still an issue of concern for a number of Asian economies including those countries. All countries in Asia have shown enormous growth. The region has to come to terms that growth rates, however are not necessarily a reflection of how deeply the technologies have penetrated the various segments of society. Cambodia, Laos, Sri Lanka, Indonesia and India have penetration rates less than 10% [2008 figures]. At the middle level are countries such as the Philippines and Thailand at below 20% and others like Malaysia [59%], Korea and Japan above 70% [op cit]. In the nature of such developments it is the urban centres, first, that most benefit from the technologies with higher education institutions being the very early beneficiaries. Another factor that can inhibit the free flow of information stunting educational users from deriving benefits of access and penetration to the Internet and WWW are regulatory and cost considerations. Almost all countries in S.E. Asia seem to have some kind of restriction on the easy and free flow of information. Utilizing the Internet as a tool to deliver learning cannot but take these issues seriously as a part of a ICT strategic framework for education.

Table 5. Core indicators on access to and use of ICT by households and individual in a select list of Asian Countries¹⁸

ICT Country	Radio	Y*	TV	Y*	Fixed line Tel.	Y*	Mob .	Y*	Comp .	Y*	Internet Access	Y*
Bangladesh	11	'10	32.2	'10	2.2	'11	76.6	'11	3.9	'11	2.8	'11
Cambodia	43	'10	62.4	'10	8.1	'10	61.9	'10	4.3	'10	0.2	'08
PR China									35.4	'10	23.7	'10
India	19.9	'11	47.2	'11	63.2	'11			9.5	'11	3.4	'08
Indonesia			71.6	'09	9.5	'10	72	'10	15.1	'12	6.5	'12

¹⁸ International Telecommunication UnionTU [2014] : accessed on 06 June, 2014 from http://www.itu.int/en/ITU/Statistics/Pages/stat/default.aspx?utm_source=twitterfeed&utm_medium=twitter

Lao PDR									6.9	'1 0	3.4	'1 0
Malaysia												
Pakistan			68	'0 9								
Philippine s	65.2	'0 8	73. 6	'0 9	11.6	08	70.1	'0 8	13.1	'1 0	10.1	'1 0
S. Korea			98. 8	'1 2	93.7	'1 2	96.8	'1 2	82.3	'1 2	97.3	'1 2
Singapore					88.8	'1 1	97	'1 1	87.7	'1 2	76.6	'1 2
Sri Lanka									12.3	'1 0	5.9	'1 0
Thailand	58.1	'1 1	98. 1	'1 1	15.5	'1 2	91.8	'1 2	26.9	'1 2	18.4	'1 2
Vietnam	4.6	'1 1	87. 8	'1 1	46.2	'0 9	62.2	'1 1	5.9	'1 1	4.8	'1 1

*Year Latest data available

Similarly access to the internet, fixed broadband and internet assisted instruction showed tremendous variation between the high and middle income countries and those that were still trapped in the lower income groups [Fig.3]. While the figures illustrate availability of these communication technologies in secondary schools in almost all Asian countries, it is not so at the primary level. The Philippines is a case in point in S.E.Asia where about 40% of secondary schools have both internet and broadband links, it is almost non existent at the primary level. The UNESCO cited did not data on the availability of the internet and broadband assets at the tertiary level other studies focussing on higher education have indicated that While the at the post secondary institutional levels especially in universities such access including personal appliances is almost universal; though reliability of the services as well as the cost of using the services inhibit a greater use of the technologies for purpose of instruction. Poorer nations continue to be handicapped - the digital divide is still alive and kicking. A major part of the reason clearly is financial but equally important are policies and capacities of

teacher to utilize the full potential of the technologies. Policies have an important and critical role.

Fig. 3: Proportion of primary and secondary schools in selected Asian countries with internet, broadband and internet assisted instruction.¹⁹

All nations in S and S. E. Asia have ICT policies for Education. By and large these policies are arranged in tandem with the overall ICT strategy of the nation as well as embedded within the countries educational strategy. Briefly ICT policy objectives across Asia are characterised by some aspects of the following:

- ICT policies are ubiquitous in the higher and upper middle income countries but in others it is less so.
- ICT policies generally seem to be aligned with the national ICT vision and strategies
- Some countries have ICT policies specifically targeting secondary education while others include all sectors. In higher education it is generally assumed that ICTs are an integral part of an institutions basic infrastructure.
- In addition to the instruction of basic computer skills or computing, ICT is used to teach other subjects as well as to enhance or expand student learning opportunities, in some but not all countries.
- Partnerships with the ICT industry are beginning to be seen.

Table 6 below summarises the main features of ICT policy statements of a select number of Asian countries.

Table 6: ICT Policies and Objectives with reference to Education in a few select Asian Countries^{*20 21}

Cate gory Country	Education policies Related to ICT	Main Actors	Policy Objectives
Cambodia	· The Education Strategy Plan 2009-2013(ESP)	· The Ministry of Education, Youth, and Sport	· Ensuring Equitable Access to Education

¹⁹ UNESCO [2014]: Information and Communication Technology [ICT] in Education in Asia: A comparative analysis across Asia. UNESCO Institute of Statistics, Montreal, Canada.

²⁰ UNESCO [2013]: ICT in Education: Policy, Infrastructure and ODA Status in Selected Asian Countries. UNESCO [Bangkok], Bangkok, Thailand

²¹ InfoDev and Price, Waterhouse and Cooper [2010]: Survey of ICTs for Education in India and South Asia.

	· ICT-in-Education Master Plan 2009-2013	(MoEYS) · The Open Institute · The Education Strategy Working Group (ESWG) · Joint Technical Working Group (JTWG)	Services · Improving the Quality and Efficiency of Education Service · Institutional and Capacity Development for Educational Staff for Decentralization
Lao PDR	· National ICT Policies · Education Sector Development Framework 2009-2015	· The Department of Information Technology · The Department of Telecom and Internet · Lao National Internet Committee (LANIC) · Ministry of Education and Sports (MOES)	· Infrastructure and access; · Enterprise and industry; · R&D; · Applications; · HR development; · Legal framework; · Awareness · Poverty alleviation; · Standardization and localization.
Mynamar	· ICT Infrastructure Development · ICT Master Plan 2011-2015	· Communications, Information and Technology (MCIT) · Ministry Of Science and Technology	· Phone network · Fully-automatic switching system, and developing a fibre optic backbone

			network · Providing broadband and mobile Internet connections
Thailand	· Eleventh National Economic and Social Development Plan 2012-2016 (NESDP) · MICT Second National ICT Master Plan 2009-2013 (NICTMP) · MOE Master plan on ICTs in Education 2007-2011(MICTE)	· Ministry of ICT (MICT) · Office of the Basic Education Commission (OBEC) · Office of the Education Council (OEC)	· Bridging unequal access to technology · Being creator of technology
Vietnam	ICT in Education Plan (2001-2005)	The Ministry of Education and Training (MOET)	· Improving familiarity with and training in ICT for students · Improving ICT use by teachers
Malaysia	Education Blueprint 2013-2025	Ministry of Education (MOE) Multimedia Development Corporation (MDeC)	· Provide Internet access and virtual learning environment · Augment online content · Maximize use of ICT for distance and self-paced learning

Indonesia	Five-Year Action Plan for the Development and Implementation of ICT in Indonesia	· Ministry of National Education of Indonesia (MoNE) · National Education Standards Agency (BSNP) · Indonesian National ICT Council (DeTIKNas) · Ministry of Communication and Information Technology (MCIT)	
Singapore	Third Master Plan for ICT in Education (mp3)2009-2014	· Educational Technology Division (ETD) · Learning Partnership in Educational Technology Branch (LPET) · Media Design and Technologies for Learning (MDT)	· Strengthening the integration of ICT into learning process · Professional development of teachers · Enriching and transforming the learning experiences through ICT
Philippines			
India	· National Policy on Education · National Policy on ICT in School Education	· Ministry of Human Resource Development · Ministry of Communications and Information Technology	· Exposure to computers and training to be part of professional education · Employing educational

			technology to spread information and train and re-train teachers · ICT literacy and competency enhancement · ICT enabled teaching-learning process · Capacity Building of teachers · ICT infrastructure in schools · ICT for open and distance learning
Pakistan	· National Information and Communications Technology Strategy for Education (NICTE) [2005] · National IT Policy [2005 revised 2008]	· Ministry of Education · Ministry of Information Technology · Ministry of Science and Technology	• Use ICT to extend the reach of education • Use ICT to improve quality of teachers • Use ICT to enhance student learning • Integrate ICT into the curriculum • Develop capacity at federal and state level education departments • Provide low cost computers and connectivity to educational institutes • Network all higher education institutes

			• Enhance Open and Distance Learning • Establish a national education intranet
Bangladesh	• National ICT Policy [2009] • Broadcasting and Operation Policy [2008]	• Ministry of Primary and Mass Education • Ministry of Education • Ministry of Science and Information and Communication Technology	• Larger pipeline of ICT professionals • ICT literacy and access to schools • Social equity in using ICT • Building ICT infrastructure • Provide incentives for e-learning content development
Nepal	IT Policy [2000]	• Ministry of Education • Ministry of Science and Technology • Ministry of Information and Communications	• Include computer education in the curriculum • Use IT to improve the quality of education • Computer knowledge to be made compulsory for teachers
Bhutan	• 26th Education Policy Guidelines and Instructions (EPGI -2007) • Communications Technology Policy and Strategy	• Ministry of Education • Ministry of Information and Communication	• Provide computers to all schools that have electricity supply • Ensure IT literacy for all students who complete basic education (class

	(BIPS)		X) Bhutan Information and · Expand ICT infrastructure to educational institutions · Develop adequate ICT literacy curriculum for schools · Share educational resources throughout Bhutan · Encourage adoption of open source software in schools
Sri Lanka	National Policy on Information and Technology in School Education (NAPITSE) [2002]	· Ministry of Education · Ministry of Higher Education · Ministry of Science and Technology	• Introduce IT in the curricula for schools and teacher training institutes • Improve the IT infrastructure in schools and in the community • Increase IT penetration
Maldives	· Seventh National Development Plan	· Ministry of Education · Ministry of Civil Aviation and Communication	· Provide computer access to all students · Create larger pool of ICT professionals · Raise awareness and promote ICT

			· Ensure affordability of ICT services
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*Table adapted from UNESCO [2013]

Open Educational Resources

Long before the interest in OER, many governments and their institutions in Asia embraced the idea of open education almost as far back as 1971 when the then government in Pakistan established Asia's first Open University following and emulating the establishment of the much spoken of and highly successful UK Open University. Despite half a century of well-organised distance education programmes by highly regarded as well as other most innovative universities, serious concerns still linger both at policy and consumer levels. At the policy levels quality, and completion rates hinder progress towards greater openness and at the consumer level economics, technology deficits and traditions of higher education practice inhibit truly open access. Open Educational Resources based praxis is being seen by many as one way of getting out this situation.²²

Notwithstanding debates and dialogues around OER, especially in N. America and Western Europe, the interest in OER *in Asia* began more as result of the enthusiasm generated by the MIT Open Courseware [OCW] initiative rather than any well thought of and designed policies by either governments or their institutions. More recently both i.e. governments and their institutions are waking up to this innovation notably as a result of the call from UNESCO, the Commonwealth of Learning as well as advocacy movements like OER Africa, OER Asia, the Asian Association of Open Universities. A number of countries notably S. Korea, India, Indonesia and China have national and institutional policies while others such as Malaysia and Thailand among a few others have policies in the making.

Required conditions for creating, accessing or using digital resources as an OER or otherwise will include a number of assets and skills. These include experience in using ICTs for instruction, access to ICT resources for teachers and academics, sources of digital content, skills in using and knowledge of digital resources. While almost all Asian countries have high levels of competencies in the use of audio, video and the older analogue technologies based broadcast media, very few can do so with the digital technologies of today. The exceptions are countries like Singapore, Malaysia, Thailand and teachers working in the secondary sector in the Philippines [Fig. 4]. This lack of

²² OECD (2007) *Giving Knowledge for Free: the Emergence of Open Educational Resources*, Accessed from <http://tinyurl.com/62hjsx6> on 04-02-2009.

competencies shows up in the use of technologies by teachers in the tertiary sector in countries such as Laos and Cambodia but not so in Singapore or Malaysia.

Fig. 4: ICT assisted instruction in selected Asian countries at primary and secondary levels of education²³

A survey done not too long ago amongst academics from higher education institutions, around the region, on a number of the above mentioned requirements indicated disparities in their availability and use.²⁴ Some key findings of the survey include:

1. **Access to ICT Resources:** Supply of reliable electricity, availability and cost of appliances, the skills to install, maintain and use appliances, access to the internet albeit at a higher cost of connection and smaller size of bandwidth, are available to most workers in higher education. Urban populations both staff and students have easier access to ICT infrastructure, but with the increasing availability of mobiles the urban rural balance is somewhat mitigated. Infrastructural resources besides the availability of personal computers and mobiles also include access to the internet, the World Wide Web email, presentation software and in some cases electronic libraries [Fig.5].

Fig. 5: Access to ICT Resources for individual academics²⁵

2. **Use of Digital Resources for Instruction:** Depending on residential locations and bandwidth availability academics *mostly* accessed a range of resources such as digital readers [Adobe and Acrobat], Image and visual materials such drawings, photographs, art posters, Online reference materials, digitized documents, digital film and video and course packs. The least accessed resources included data archives, audio materials such as speeches, oral interviews, on line diaries, government documents, and simulations and animations.

Table 7: Type digital resources used by academics²⁶

Types of digital resource	Use (%)					

²³

²⁴ Dhanarajan, G and I.S Abeywardena [2012]: An Overview of Higher Education and Open Educational Resources in Asia *in* Open Educational Resources: An Asia Perspective. [Ed. Dhanarajan, G. and D. Porter]. Commonwealth of Learning, Vancouver, Canada.

²⁵ Dhanarajan, G and I.S Abeywardena [2012]: An Overview of Higher Education and Open Educational Resources in Asia *in* Open Educational Resources: An Asia Perspective. [Ed. Dhanarajan, G. and D. Porter]. Commonwealth of Learning, Vancouver, Canada.

²⁶ Dhanarajan, G and I.S Abeywardena [2012]: An Overview of Higher Education and Open Educational Resources in Asia *in* Open Educational Resources: An Asia Perspective. [Ed. Dhanarajan, G. and D. Porter]. Commonwealth of Learning, Vancouver, Canada.

	Almost all the time	Often	Sometimes	Rarely	Never	N
Digital readers (e.g., Adobe Acrobat reader)	30.4	34.2	21.3	8.0	6.1	395
Images or visual materials (drawings, photographs, art, posters, etc.)	26.8	41.3	23.3	7.3	1.5	400
Online reference resources (e.g., dictionaries)	24.2	40.9	25	7.1	2.9	396
Online or digitized documents (including translations)	17.3	34.9	23.4	16.3	8.0	398
Online class discussions (including archived discussions)	15.9	25.8	27.4	16.6	14.3	391
Digital film or video	15.4	33.9	35.7	10.6	4.3	395
News or other media sources and archives	15.3	35.1	32.3	13.0	4.3	393
Course packs	14.7	20.4	35.6	16.2	13.1	388
Curricular materials and websites that are created by other faculty and/or other institutions (e.g.,	13.8	29.4	33.3	15.3	8.3	398

MIT OpenCourseWare, World Lecture Hall, Merlot)						
Other	13.3	20.5	25.8	9.3	31.1	151
E-Book readers (e.g., Kindle)	10.3	19.6	19.57	22.83	27.72	368
Data archives (numeric databases; e.g., census data)	9.16	23.4	31.6	20.6	15.3	393
Audio materials (speeches, interviews, music, oral histories, etc.)	7.9	23.5	35.4	22.0	11.1	395
Personal online diaries (e.g., blogs)	6.9	18.9	27.0	27.3	19.9	392
Government documents in digital format	6.6	21.1	33.84	21.37	17.05	393
Simulations or animations	5.37	26.6	34.2	23.3	10.5	391
Maps	3.8	12.2	33.9	29.4	20.8	395
Digital facsimiles of ancient or historical manuscripts	2.3	6.9	16.0	26.7	48.2	394

3. **Sources of Digital Resources:** Academic staff use almost all of the popular search engines [Google, Yahoo, Safari and Bing], a few build and maintain their own personal collections, media sources such as CNN, BBC local television and radio channels, limited use of resources from Museums and professional organization as well as commercial data bases [the limited use is probably a reflection of cost to access these resources. [Table 8.]

Table 8: Sources of digital content²⁷

Sources of digital resources	Use (%)					
	Almost all the time	Often	Sometimes	Rarely	Never	N
Search engines/directories (e.g., Google, Yahoo)	54.38	32.47	9.54	2.32	1.29	388
My own personal collection of digital materials	30.59	39.85	17.48	9.77	2.31	389
Public (free) online image databases	23.31	34.27	27.53	9.55	5.34	356
Online journals (e.g., JSTOR)	21.43	28.06	27.3	15.82	7.4	392
Library collections (digital)	16.41	27.95	29.23	17.69	8.72	396
Campus image databases from my own institution (e.g., departmental digital slide library)	13.44	22.22	28.17	18.35	17.83	387
“Portals” that provide links or	13.04	33.25	36.32	11.51	5.88	391

²⁷ Dhanarajan, G and I.S Abeywardena [2012]: An Overview of Higher Education and Open Educational Resources in Asia *in* Open Educational Resources: An Asia Perspective. [Ed. Dhanarajan, G. and D. Porter]. Commonwealth of Learning, Vancouver, Canada.

URL's relevant to particular disciplinary topics						
Media sites (e.g., NPR, New York Times, CNN, PBS)	10.97	25.59	32.64	19.58	11.23	383
Other	5.56	11.11	18.52	12.04	52.78	108
Online exhibits (e.g., from museums)	3.66	10.44	25.85	32.11	27.94	383
Commercial image databases (e.g., Saskia, AMICO)	2.86	9.61	24.16	27.01	36.36	385

4. **OER National and Institutional Policies:** Policy support by governments is extremely important to accelerate the adoption of innovations in education. Governments have it in their powers through a variety of instruments to support innovation or retard it. Policies restricting the free flow of information, limitations on access to search engines such as Google or Yahoo, limiting financial support to adopt innovations, limiting the extent to which curriculum and content can be explored at the delivery end, and not permitting open access to and use of data and content through adoptions policies such as the Creative Commons family of licenses are some of the ways in which Asian governments could discourage adoption of OER production, use, reuse and distribution. At the last count some eleven countries in Asia had established national CC affiliates. Some of the affiliates are active while others not so.

Besides policy support at government levels, such support or lack of at institutional levels also places limitation on the extent to which OER can play an effective role. Familiarity with the purpose and benefits of OER as well as comprehensive knowledge of copyright matters play a role in encouraging academic staff to engage in OER related activities. Recent studies indicate that while there is sufficient familiarity, at a surface level, of copyright legislation and Creative Commons licensing in at least three hundred of academics surveyed, in depth knowledge of both was less so [Dhanarajan and Abeywardena, 2012]. Institutional policies to incentivize through recognition and rewards, the production and use of OER, are also somewhat thin in most Asian Institutions. [Fig. 6]

Fig 6: OER Policy provisions at institutional level²⁸

POLICY ON	RESPONSE
<i>Copyright [Individual]:</i> No policies —73% CC license —15%, Other types of license 12% N= 253	
<i>Collaboration on OER projects [Individual]</i> · NO —82%; · YES —18% N=389	
<i>Sharing and importing Open Educational Resources [Institutional]</i> No — 82% Yes — 18% N= 71	
<i>Staff Training to support OER activities [Institutional]</i> No [58%]	

²⁸ Dhanarajan, G and I.S Abeywardena [2012]: An Overview of Higher Education and Open Educational Resources in Asia *in* Open Educational Resources: An Asia Perspective. [Ed. Dhanarajan, G. and D. Porter]. Commonwealth of Learning, Vancouver, Canada.

YES [42%] N= 69	
<i>Incentivizing staff to engage in OER activities [Institutional]</i> NO [65%]; YES [35%] N= 69	

In their book *Distance and Blended Learning in Asia*, Latchem and Jung²⁹ consider three factors that require attention when nations embark on an e-learning facility. These are a nation's digital infrastructure environment with regards to Internet use and penetration, its E-readiness and E-learning readiness.

5. ***E-Readiness and E-Learning Readiness:*** Latchem and Jung contend that having access to the Internet alone is not a guarantee that institutions can progress into making available their programmes, on an online platform, of study to their learners in their immediate vicinity or at a distance. The level and depth at which the Internet can be used for the greatest pedagogic advantage depends on the communities preparedness to use it. On the basis of 100 qualitative and quantitative data elements the Economic Intelligence Unit of the *Economist* applied measurements to about 70 countries among which were some of our target countries. The measures applied to assess *e-readiness* included connectivity and technology infrastructure, business environment, social, cultural and legal environments, government policies and vision as well as citizens ability to use the services. Among the measures applied to assess *e-learning readiness* the EIU studied 150 qualitative criteria grouped under four categories which included:

- Connectivity especially broad band as well ownership of personal computers and cost of connectivity,
- Content development skills to use in the new media and a capacity to manage the online learning transaction

²⁹ Latchem, C and I. Jung [2010]: *Distance and Blended Learning in Asia*. Routledge, New York, USA

- Capability that is the ability to design, deliver and at the same time for users to learn through the Internet and
- A culture to promote, recognize, reward and accord respect to online teaching and learning ventures and accomplishments.

Table 9: Asian e-readiness rankings (EIU, 2008) and E-learning readiness rankings (EIU, 2003)

<i>Countries</i>	<i>E-readiness rankings</i>		<i>E-learning readiness rankings</i>	
	<i>Score [out of 10]</i>	<i>Overall ranking [out of 70 countries]</i>	<i>Score [out of 10]</i>	<i>Overall ranking [out of 70 countries]</i>
South Korea	8.34	15	8.24	5
Malaysia	6.16	34	6.48	25
Thailand	5.22	47	5.11	36
India	4.96	54	4.56	45
Philippines	4.90	55	4.80	43
China	4.85	56	4.52	46
Sri Lanka	4.35	60	3.75	59
Vietnam	4.03	65	3.32	57
Indonesia	3.59	68	3.67	53

6. **Legal Environment:** Almost all countries in Asia are signatories to international copyright regimes. Many of them are original signatories to the Paris³⁰ and Berne³¹ convention of 1884 and 1886 respectively and subsequently with the coming of the WIPO agreements to the terms and regulations such as TRIPS, of this arrangement. Adjustments to the TRIPS agreement, with the arrival of the Internet age such as 'fair use' and 'copyleft' have made it possible for many in Asia and other developing countries, including those engaged in education, to

³⁰ www.wipo.int/treaties/en/ip/paris

³¹ www.wipo.int/treaties/en/ip/berne

access and use in a limited way the millions of copyrighted digital resources. The coming of Open licensing like GNU, the GNU-GPL and those that were subsequently spawned such as AShareNet, OER Commons, Creative Commons as well as many others has further improved the ‘free to use/access’. A few Asian countries also have provisions within their copyright laws for the ‘free’ use of copyrighted materials for their teaching and learning [fairuse] many others do not. At the institutional levels copyright policies are mostly dictated by MOE regulations. While Creative Commons licenses are becoming the standard provision for free access to and reuse and repurpose of educational resources in a number of Asian Countries, it is not so across the continent.

Table 10: Selected asian countries with CC license provisions³²

China	CC BY 3.0 China Mainland	CC BY- NC 3.0 China Mainland	CC BY-NC- ND 3.0 China Mainland	CC BY-NC-SA 3.0 China Mainland	CC BY- ND 3.0 China Mainland	CC BY- SA 3.0 China Mainland
India	CC-BY 2.5 india	CC-BY- NC-2.5 India	CC-BY-NC- ND2.5 India	CC-BY-NC-SA 2.5 India	CC-ND 2.5 India	CC-SA 2.5 India
Indonesia	CC BY 3.0 Indon	CC BY- NC 3.0 Indon	CC BY-NC- ND 3.0 Indon	CC BY-NC-SA 3.0 Indon	CC BY- ND 3.0 Indon	CC BY- SA 3.0 Indon
Japan	CC-BY 2.1 Japan	CC BY- NC 2.1 Japan	CC BY-NC- ND 2.1 Japan	CC BY-NC-SA 2.1 Japan	CC BY- ND 2.1 Japan	CC BY- SA 2.1 Japan
Korea S.	CC BY 2.1 S.Korea	CC BY- NC 2.1 S.Korea	CC BY-NC- ND2.1 S.Korea	CC BY-NC-SA 2.1 S.Korea	CC BY- ND 2.1 S.Korea	CC BY- SA 2.1 S.Korea
Malaysia	CC BY 2.5 Mal.	CC BY- NC 2.5 Mal	CC BY-NC- ND 2.5 Mal.	CC BY-NC-SA 2.5 Mal	CC BY- ND 2.5 Mal	CC BY- SA 2.5 Mal
Philippines	CC BY 3.0 PHP	CC BY- NC 3.0 PHP	CC BY-NC- ND 3.0 PHP	CC BY-NC-SA 3.0 PHP	CC BY- ND 3.0 PHP	CC BY- SA 3.0 PHP
Singapore	CC BY	CC BY-	CC BY-NC-	CC BY-NC –	CC BY-	CC BY –

³² Source: Creative Commons

	3.0 S'pore	NC 3.0 S'pore	ND 3.0 S'pore	SA 3.0 S'Pore	ND 3.0 PHP	SA 3.0 PHP
Thailand	CC BY 3.0 Thai.	CC BY- NC 3.0 Thai	CC BY-NC- ND 3.0 Thai	CC BY NC-SA 3.0 Thai	CC BY- ND 3.0 Thai	CC BY- SA 3.0 Thai
Vietnam	CC BY 3.0 Viet	CC BY- NC 3.0 Viet	CC BY-NC- ND 3.0 Viet	CC BY-NC-SA 3.0 Viet	CC BY- ND 3.0 Viet	CC BY- SA 3.0 Viet

In the next section of this paper, the state of OER provision, knowledge and practice in a number of selected countries in South and S. East Asia is briefly analysed.

Educational Systems and Open Educational Resources in selected Asian Countries

Bangladesh³³

In 2009 [latest year of available data] Bangladesh expended 2.23% of its GDP on education³⁴. The *educational system in Bangladesh* is three-tiered and highly subsidized. The government of Bangladesh finances and operates many schools in the primary, secondary, and higher secondary levels. It also subsidizes parts of the funding for many private schools including those by well established NGOs and charitable Foundations. In the tertiary education sector, the government also funds more than 15 state universities. Budgets for the public universities are channeled through a University Grants Commission, established under law and put together by the MOE. Besides the 15 public universities there are about 57 privately sponsored and funded Universities. Bangladesh presently does not have a declared national policy on OER. However, there is the Bangladesh Open Source Network (BdOSN. This) is a non-profit, voluntary initiative of Bangladesh Fundamental Research Institute (BdFRI). Its purpose is create a broad organization where the Open Source and Open Content volunteers and professionals can exchange their ideas and embark on new initiatives. In the last year after formation BdOSN has matured into an independent organization with partnerships with other Open Source based organization and individuals. Besides BdOSN there is also a Creative Commons group in People's Republic of Bangladesh, which is affiliated with the Bangladesh Open Source Network.³⁵

³³ Data Source: <http://wdi.worldbank.org/table/2.10>

³⁴ Data Source: <http://www.indexmundi.com/facts/bangladesh/public-spending-on-education>

³⁵ <http://wiki.creativecommons.org/Bangladesh>

Cambodia³⁶

In 2012 Cambodia expended 2.6% of its national budget on education³⁷ which is controlled by the State through the MOE at the national level and by the Department of Education at the provincial level. The five pillars of the system are pre and primary schools providing basic education, secondary schools the offers post basic secondary education at the lower and upper levels, post secondary education through a system of colleges, academies and Universities, There are about 91 Universities and Colleges of which 57 are privately owned and operated³⁸. The fifth pillar in the system is provision for non formal education. There are specialised institution to impart education and training in Sports, information technology and tech-voc education. EFA efforts has resulted in almost 96% of the age cohort attending primary schooling, while 34% and 26% of the relevant age groups participate in lower and upper secondary schooling, respectively. No published document is available on any OER initiatives in Cambodia. There is an Open Institute of Cambodia³⁹ which runs an Open Schools program *committed to ensure the development of all the necessary tools required to improve the quality of education through the use of ICT, including the necessary plans, computer programs in Khmer language, curricula, distance learning methodology, training materials, and technology for sustainability.*

CHINA

In 2012 China spent 4% of its GDP on education.⁴⁰ China has a highly centralised education system with the 49 provinces and 29 autonomous regions having some local control. Basic education is compulsory for at least nine years. This is funded by government. Secondary education lasts six years of which three are middle and three high school. Participation rates is almost 99% at the primary level and 80% at middle and high school levels. Through a highly competitive selection process successful graduates coming out of high school find places in Universities and Colleges. By 2011 there were 2723 universities and colleges offering 2, 4 year degree and postgraduate programmes of study. Of these 836 are privately owned⁴¹. Further, there are also another 1835 diploma level schools catering for the technical and vocational sector. Almost a half of the post secondary institutions are funded by the state and the remaining half by private enterprise. About 11 million young people participate in conventional higher education and a further 3-4 million in distance, virtual and e-

³⁶ http://www.seameo.org/index.php?option=com_content&view=category&id=99&Itemid=525

³⁷ Data Source: <http://wdi.worldbank.org/table/2.10>

³⁸ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

³⁹ (<http://www.open.org.kh/en>)

⁴⁰ Data Source: <http://wdi.worldbank.org/table/2.10>

⁴¹ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

learning The Ministry of Education of the People's Republic of China has a policy on OER, and China has developed several governmental OER action plans involving Chinese universities (www.moe.edu.cn). A list of institutions active in one or another aspect of OER is given in Table 11 below:

Table 11:List of Open Educational Resources sites in China

INSTITUTION	URL
National Cultural Information Sharing Project	
<i>Chinese Quality Course Project</i>	
<i>The National Science Data Sharing Project</i>	
<i>The National Science Library Institutional Repository</i>	
<i>Center for Contemporary Cultural Studies</i>	
<i>China Open Resources for Education</i>	
<i>Xiamen University Institutional Repository</i>	
<i>Chinese Journal of Lung</i>	
<i>International Journal of Agricultural and Biological Engineering</i>	
<i>Songshuhui Community</i>	
<i>Qiji Scientific Literature Repository</i>	
<i>The Project of China NGO 2.0</i>	
<i>Kong Bohua TCM School</i>	
<i>Social Learn Lab Community</i>	
<i>Educational Resources in the Public Domain</i>	

A non profit organisation called the China Open Resources Organisation [CORE] with it mission to encourage closer cooperation amongst Chinese Universities and between Chinese and International Universities to share and exchange educational materials

was established in late 2003.⁴² A number of leading Chinese Universities are members of this consortium with an ambitious programme of activities. However, lately there does not seem to be much that is happening.

INDIA

In 2012 India expended 3.4% of its GDP on education.⁴³ The Indian Constitution provides for education as a fundamental right, to all citizens, though in practice educational deprivation is a serious challenge to the nation. Both the Central and State governments have joint responsibility to and control of education. Some responsibility also is vested at the local level at the municipal level. Most of the universities in India are controlled by either the Central or the State Governments. Since the launch of the EFA efforts the country has made significant progress in providing access to learning. High levels of literacy is being achieved, 96.5% of all rural children between the ages of 6-14 are enrolled in primary schools 83% of all rural 15-16-year olds are enrolled in secondary schools and participation in higher education is reaching at least 20% of the age cohort. There are 17, 822 universities and colleges of which 14,300 are privately owned. Private education at all levels is expanding and there is some claim that it was worth between USD 60-70 billion in 2012.⁴⁴

India was among the early countries in Asia to embrace OER for a nationwide approach with its Report to the Nation (2007) of the National Knowledge Commission.⁴⁵ It launched a national E-content and Curriculum Initiative that has been followed up with a large variety of OER activities and projects, directed almost completely towards OER in the basic and engineering sciences disciplines. A good example of this effort is the National Program on Technology Enhanced Learning (NPTEL). The NPTEL project is being carried out by seven Indian Institutes of Technologies (IIT's), the Indian Institute of Science, and other premier institutions around the country and being funded by the Human Resource Ministry. Another exemplary initiative by the same ministry is the recent release of some learning resources by the National Centre for Research on Education and Training under a CC BY-SA license.

Despite many such efforts India still has to develop a systematic nation-wide effort to develop a strategy for developing and delivering OER. Table 12 below lists a number of OER projects in India.

Table 12: OER projects in India of some significance

⁴² http://poerup.referata.com/wiki/China_Open_Resources_for_Education

⁴³ Data Source: <http://wdi.worldbank.org/table/2.10>

⁴⁴ Asian Development Bank [2012]: Counting the Cost: Financing Asian Higher Education for Inclusive Growth. Asian Development Bank, Manila, Philippines.

⁴⁵ Knowledge Commission Report to the Nation 2006-2009 published March 2009 accessed on 07-07-14 from <http://knowledgecommission.gov.in/downloads/report2009/eng/report09.pdf>

PROJECT S	URL		
A-VIEW [Amrita Virtual Interactive E-Learning]	http://aview.amrita.ac.in/		
e- Gyankosh	http://www.egyankosh.ac.in/		
Flexilearn	http://www.ignouflexilearn.ac.in/flexilearn/		
NCERT	http://ncert.nic.in/ncerts/textbook/textbook.htm		
NIOS-OER	http://www.nios.ac.in/online-course-material.aspx		
NPTEL	http://nptel.iitm.ac.in/		
OER4S [Homi Bhabha Centre for Sc. Ed.]	http://www.hbcse.tifr.res.in/research-development/projects/open-educational-resources-for-schools-oer4s		
OSCAR [IIT, Mumbai under Ekalavya Project]	http://oscar.iitb.ac.in/oscarHome.do;jsessionid=71850E51474C038380686931C2F2AB72		
Shakshat	http://www.sakshat.ac.in/		

India has a number of Creative Commons affiliates. Three of these have undertaken to develop and pursue a road map to promote the Commons in the country. They are Wikimedia India [[http://meta.wikimedia.org/wiki/Wikimedia India](http://meta.wikimedia.org/wiki/Wikimedia_India)], Aahrya Narendra Dev College [<http://andcollege.du.ac.in/>] and the Centre for Internet & Society [<http://cis-india.org/>]

INDONESIA⁴⁶

In 2012 Indonesia expended 3.6% of its GDP on education.⁴⁷ The Ministry of Education and Culture (*Kementerian Pendidikan dan Kebudayaan* or *Kemdikbud*) and the Ministry of Religious Affairs (*Kementerian Agama* or *Kemenag*) fund and manage all public educational establishments in Indonesia.

Educational streaming consists of formal education, non-formal education, and informal education, which can complement and enrich each other. Education can be provided with an open system through face to face and/or distance learning. Level of education consists of basic education, secondary education, and higher education. Types of education include general education, vocational education, professional education, vocational and technical education, religious education, and special education. The streams, levels, and types of education can take the form of an educational unit organized by the Government, local governments, and/or community. The most recent EFA reports indicate that Indonesia has achieved a very high level of participation in basic education [~95%] and in higher education participation rates as high as 21% through some 2901 Universities and Colleges of which 2818 are private enterprises.⁴⁸

Indonesia has committed to OER as part of its strategy of serving the educational needs of a population of nearly 250 million spread over 17,000 islands and three time zones. Indonesia's National Education Development Strategy 2010–2014 makes reference to the incorporation of OER. At the regulatory level there is a Ministerial Regulation on OER, whilst at the operational level, the Indonesian Higher Education Network (INHERENT) was established in 2007 for resource-sharing in education and research, in which all development of resources will be based on open source and open access principles. There is also a national repository for publications.

JAPAN

In 2012 Japan expended 3.9 % of its GDP on education.⁴⁹ Following the war Japan's education system was transformed from its earlier German and French models. The system consists of six years of elementary school, each three years of junior and senior high school and four years of university or two years of junior college.

Compulsory education includes elementary school and junior high school. Over 90% of all students also graduate from high school and over 40% from university or junior college. There are 778 Universities in the country with about 2.8 million students

⁴⁶ http://www.seameo.org/index.php?option=com_content&view=category&id=99&Itemid=525

⁴⁷ Data Source: <http://wdi.worldbank.org/table/2.10>

⁴⁸ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

⁴⁹ <http://wdi.worldbank.org/table/2.10>

enrolled. Of these 86 are *national* public universities and this included the Open University, Japan, 95 *local* public universities founded by prefectures and municipalities and the remaining 597 founded by private enterprises.

There is no government instituted OER policy. However in 2006, inspired by the OCW initiative by MIT, several Japanese Universities banded together to form the Japan Open Courseware Consortium [JOCW]. The aim of JOCW is assist and disseminate the activity of its members, through open and free publication of formal course materials of higher educational organizations. It also encourages the interchange of know-how and opinions among not only Japanese organizations related to the JOCW, but also foreign organizations by participating the JOCW Consortium as an Affiliate members. JOCW is a unique organization in that it has been managed by a nation-wide collaboration of the top ranking national and private universities. In the respective member universities the OCW started by a top-down decision, not by individual researchers.⁵⁰ JOCW has twenty four full members made up of Japan's highly regarded institutions and four associate members.

S. KOREA

In 2012 S. Korea expended 5.2 % of its GDP on education⁵¹. The Ministry of Education, Science and Technology [MEST] is responsible for the administration of education at the national level, the Offices of Education at the provincial and municipal level and local offices of education at the county level. The MEST is the central authority supervising the education system, defining national education policies in cooperation with other ministries, implementing policies, and guiding provincial and local educational bodies. The government also provides centralized financing of education; government funding constitutes the largest component of school budgets. Goals and contents of education are determined at the national level, while school curriculum is organized and implemented at the individual school level within the framework provided by the central government. Education is compulsory for all children from ages 6-16 years. Progression through the school system is from Kindergarten [3-5], primary [6 years] middle [3 years] and high [2 years]. On graduation and through competitive challenges young people enter colleges and universities. Higher education is offered at universities, colleges, and research and other higher education institutions. In 2010, 64% of 25- to 34-year-olds had completed tertiary education, which is the highest proportion among OECD countries. Junior colleges offer professional programs usually lasting two years leading to the award of an associate degree. Advanced courses for associate degree holders lead to a bachelor's degree. Universities offer four-year programs that lead to a bachelor's degree. Bachelor's degree holders, if successful in the entrance examination,

⁵⁰ <http://www.jocw.jp/index.htm>

⁵¹ Data Source: <http://wdi.worldbank.org/table/2.10>

can enroll in additional two-year programs to obtain a master's degree. Doctoral degree programs require at least three years of study and research beyond a master's degree. There are well over 8300 kindergartens, 5,855 primary schools, 3,144 middle schools and 2,313 high schools in the country. There are 149 junior colleges and 179 universities.⁵²

The Republic of Korea has a very comprehensive policy on OER.⁵³ OER have been used to leverage the quality of higher education in South Korea. After consultation with universities and students a national plan for promoting OER had also been developed. A national repository of OER which collects metadata of e-learning lectures of Korean universities was launched in 2001. OER copyright guidelines (including open licensing) in the Korean legal framework were published in 2008. Public funds are used to publish under-graduate OER materials. In 2010 a portal (KOCW) was launched that links to the OER at 17 cyber-universities and the 10 University E-Learning Support Centres [UESC]. Among the facilities developed by various government agencies to buttress this massive effort are an Educational Broadcasting Internet Service, a digital library system [DLS], development text books, a Cyber Home Learning System, and an educational information service [EDUNET] which distributes educational resources and materials.

LAOS PDR⁵⁴

In 2012 Laos PDR expended 2.8 % of its GDP on education.⁵⁵ The Ministry of Education and Sports is the central organisation in charge of education; increasingly responsibilities are being progressively decentralised to the provincial and district levels. With decentralisation the Ministry's role changes with planning, budgeting, curriculum, supervision and monitoring. Basic primary education is free and compulsory for all children. This is made up of three years of preschool education; five years of primary, three years of lower secondary and three years of upper secondary. Entry into post education is performance based . About 6% of the age cohort participate in post secondary education made up of Vocational and technical schools and colleges as well as Universities. There are 99 universities in the country of which 22 are private enterprises.⁵⁶ There does not seem to be any OER related activities in the education sector.

MALAYSIA

⁵² http://hrd.apec.org/index.php/Education_in_the_Republic_of_Korea

⁵³ http://poerup.referata.com/wiki/South_Korea

⁵⁴ http://www.seameo.org/index.php?option=com_content&view=category&id=99&Itemid=525

⁵⁵ Data Source: <http://wdi.worldbank.org/table/2.10>

⁵⁶ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

In 2012 Malaysia expended 5.9 % of its GDP on education.⁵⁷ The central government oversees all educational development through the Ministry of Education. It handles almost everything from policies to practice and covers all sectors including higher education. The education act of 1966 and its subsequent amendments and addendums sets out the legislative framework. Further development of the sector is guided by the National Education Blueprint 2013-2025⁵⁸. There is almost a 100% participation in basic primary education of the age cohort, about 70% in secondary education and 35-40% participation of the age cohort in higher education through 511 Universities and Colleges of which 491 are privately funded⁵⁹. Besides public provision in all the sectors, the private sector is also equally active.

There is currently no government policy on OER through the Ministry of Education is expected to initiate steps towards setting up a working group comprising of experts and academic representatives to work towards the setting up of such a policy. Meanwhile a number of higher educational institutions have embarked on their own in either designing policy frameworks on OER [such as the WOU] and/or venturing into OER related initiatives. Some of the initiatives are listed below in Table 13

Table 13 . Malaysian Universities undertaking OER activities

INSTITUTION	URL
Universiti Technology Malaysia [oer@utm]	http://www.utm.my/
Universiti Kebansaan Malaysia [oer@ukm]	http://www.ukm.my
Universiti Sains Malaysia [oer@usm]	http://www.usm.my
Universiti Putra Malaysia [oer@upm]	http://www.upm.my
Universiti Institute Technology Mara [oer@UiTM]	http://www.UiTM .my
International Islamic Universiti of Malaysia [oer@iium]	http://www.iium.my

⁵⁷ Data Source: <http://wdi.worldbank.org/table/2.10>

⁵⁸ http://www4.unescobkk.org/nespap/sites/default/files/Preliminary-Blueprint-ExecSummary-Eng_0.pdf. Accessed on 11-04-14.

⁵⁹ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

Universiti Malaysia Sabah [oer@ums]	http://www.ums.my
Universiti Malaysia Sarawak [oer@unimas]	http://www.unimas.my
Universiti Sains Islam Malaysia [oer@usim]	http://www.unimas.my
Wawasan Open University [oer@asia-WOU]	www.wou.edu.my / www.oerasia.org
Universiti Terbuka Malaysia	www.oum.edu.my

MYNAMAR

In 2012 Myanmar expended 0.8 % of its GDP on education.⁶⁰ The Ministry of Education is the main controller of education in the Union of Myanmar. The educational policy is to provide basic education equated with livelihood and within the reach of all. Science is given precedence in higher education especially for those who have promising potentials and who are industrious. The literacy rate in 1992 was 80 per cent. Children spend five years in primary school, four in middle and two years in high school. The Ministry of Education provides policy formulation and coordination through various councils formed under the Ministry. In addition, funding is also the main responsibility of the Ministry of Education through various communities are also make modest financial contributions. Post-secondary education is made up of technical colleges and universities. The country has well over 150 universities and colleges; about 450,000 are enrolled in these institutions. The University of Yangon has a print based distance education programme. Myanmar does not as yet have a policy on OER. There are also no policy provisions on open access and open licensing. With the opening up of the recent country, the Open Society Foundation recently launched an e-library project, which would facilitate those with access to the Internet and WWW.

Early in 2013 a NGO “New Education Highway” launched in partnership with local community centres a programme providing digital learning resources covering subjects in the K-12 sector. Almost all the materials are OER licensed under the international CC BY license.⁶¹

NEPAL

In 2012 Nepal expended 4.7 % of its GDP on education.⁶² While government funds most educational enterprises, increasingly private enterprise is beginning to play a role. More private schools are being established and though expensive is being patronised by

⁶⁰ Data Source: <http://wdi.worldbank.org/table/2.10>

⁶¹ <http://www.neweducationhighway.org/>

⁶² Data Source: <http://wdi.worldbank.org/table/2.10>

segments of the population. Government manages the publicly funded establishments and plays a supervisory role in the case of private schools. The system is modelled after the Indian system and is made up of sixteen years of formal study, of which ten years is at the school level, four years in College and a further two years at Masters level programmes. Some changes to the system are gradually being implemented with revisions that will result in 12 years of schooling and 4 years of in universities leading up to a Baccalaureate degree. There are six universities in the country of which five are public funded and one a private university.

Nepal does not have a policy on OER. However an NGO the Open Learning Exchange Nepal [OLE Nepal] is working with the formal and informal educational systems to enhance teaching and learning through the integration of technology and to provide easy and equal access to quality educational material across difficult and different geographic regions and social groups. OLE Nepal develops and distributes free educational content, trains teachers to integrate technology in the classroom, implements technology interventions in rural schools and helps build local capacity in technology and educational delivery. It has also established and manages a free digital library and offers a free collection of digital learning materials.⁶³

PAKISTAN

In 2012 Pakistan expended 2.1% of its GDP on education.⁶⁴ Both the central and provincial governments share responsibility on education. The Central government mostly assists in designing a unified curriculum, accreditation and financing of research and development, the provincial governments oversee and regulate the day to day operations of the system. The education system in Pakistan is generally divided into five levels: primary (grades one through five); middle (grades six through eight); high (grades nine and ten, leading to the Secondary School Certificate or SSC); intermediate (grades eleven and twelve, leading to a Higher Secondary (School) Certificate or HSC); and university programs leading to undergraduate and graduate degrees. The government finances a bulk of the cost of education channeled through the MOE as well as the Islamic schools, there is also a very active participation of the private for profit sector. There are about 155,827 primary schools and another 24,322 secondary schools. Enrolment at the primary level in 2008 stood at 17.2 million and at the secondary level 2.5 millions. Governments fund the production of textbooks which are made available to children at a highly subsidised cost. Higher Education in Pakistan comes under the governance of the Higher Education Commission. The Commission, in theory, acts as the buffer between government and the institutions. It is autonomous. Financing of higher education comes from the central and provincial governments,

⁶³ <http://www olenepal.org/>

⁶⁴ <http://wdi.worldbank.org/table/2.10>

private enterprise and religious bodies. There are 2175 colleges and universities in the country.^{65 66}

There is no policy on OER though the Pakistan Virtual University [www.wu.edu.pk] which is essentially delivers its programmes through broadcast TV has made all of its programmes OER under a CC BY licence [International]. There is no CC affiliate in Pakistan.

PHILIPPINES⁶⁷

In 2012 the Philippines expended 2.1% of its GDP on education.⁶⁸ The Department of Education [DepEd] manages and regulates education in the country. Its control is very comprehensive from finance to curriculum. Staff working in public schools are essentially civil servants and civil service conditions of service applies to teachers and administrators in the entire publicly financed system. The education system of the country embraces formal and non-formal education. Formal education is a sequential progression of academic schooling at three levels, namely, elementary, secondary and tertiary education. The first level, elementary or primary education involves compulsory six grades in public schools and seven grades in some private schools, in addition to optional pre-school programmes. The second level or secondary education corresponds to four years of high school, the prerequisite of which is completion of the elementary level. A student enters the secondary level at age 12 and graduates at 15. The third level is tertiary education or higher education where a student enters at age 16. Higher education is divided into collegiate, master's and doctorate levels in various programmes or disciplines. Post-secondary schooling consists of two or three-year non-degree technical or technician courses. Non-formal education, which includes the acquisition of knowledge even outside school premises is aimed at attaining specific learning objectives for a particular clientele, especially the out-of-school youth or adult illiterates who cannot avail themselves of formal education. An example is functional literacy programmes for non-literate and semi-literate adults which integrate basic literacy with livelihood skills training. In many ways the Philippines with its most liberal attitudes to social norms and expectations, among S. E. Asian countries, is well situated to benefit from the generous provisions of OER to those wanting to access knowledge. There is some indication that DepEd is working on an OER policy for higher education. At the pre tertiary level the production of all learning resources [such as textbooks] are funded by the Department. As of 1996, there are 49,631 schools in all levels, of which,

⁶⁵ <http://norric.org/files/education-systems/Pakistan-2006.pdf>

⁶⁶

<http://www.hec.gov.pk/InsideHEC/Divisions/QALI/Others/Pages/StatisticalInformationUnit.aspx>

⁶⁷ http://www.seameo.org/index.php?option=com_content&view=category&id=99&Itemid=525

⁶⁸ Data Source: <http://globalnation.inquirer.net/31229/philippine-education-spending-still-below-un-standard>

84 percent are public (see Table 1). Of the 35,775 elementary schools, 94 percent are public. In the secondary level, there are 6,309 schools, of which, 59 percent are public. Of the 1,1856 higher education institutions, 1636 are private.^{69 70}

SINGAPORE

In 2012 Singapore expended 3.2% of its GDP on education.⁷¹ The MOE manages and controls those parts of the educational system funded by the GOS; while it plays an advisory and supervisory role in the governance of the privately funded sector. Control and supervision in both sectors include, with variations, admission policies, curriculum, exit standards and fees. Primary schooling is six years, preceded by up to two years of pre schooling. Post primary schooling , following a publicly organised assessment, children are streamed according to merit and to a certain extent aptitude, into secondary schools lasting five or six years [GCSE, 'O' levels etc.]. Pre University studies [up to two years] qualifies young people to enter higher education at universities [about 5 at the time of reporting]. Entry into publicly funded universities is performance based. There are 31 Universities in the country, of these 16 are privately funded.⁷² There are also many polytechnics in the country which provide high quality post-secondary education especially in the technical vocational arena. The Singapore educational system is highly admired across the world for its high quality.⁷³

There are no published explicit policy statements regarding OER in Singapore. However There is a Creative Commons Community in Singapore and an active pursuit of Open Access is in progress. Singapore has been participating in the OA movement through a number of well known institutions such as the “institutional knowledge at Singapore Management University, “Scholar Bank” at the National University of Singapore, “Digital Repository [DR-NTU]” at the Nanyang Technological University. The National Library Board of Singapore has also been an active promoter through various initiatives enabling a variety of resources openly accessible.

SRI LANKA

In 2012 Sri Lanka expended 1.7 % of its GDP on education.⁷⁴ Education in Sri Lanka fall under the jurisdiction of three separate Ministries viz; Ministry of Education, Department of Examinations, Ministry of Higher Education, Ministry of Educational

⁶⁹ http://www.seameo.org/index.php?option=com_content&view=article&id=113&Itemid=523

⁷⁰ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

⁷¹ Data Source: <http://wdi.worldbank.org/table/2.10>

⁷² UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

⁷³ http://www.seameo.org/index.php?option=com_content&view=category&id=99&Itemid=525

⁷⁴ Data Source: <http://wdi.worldbank.org/table/2.10>

Services, Ministry of Vocational and Technical training. The system is a five tiered system comprising Primary [5-6 years], Junior Secondary [4 years], Senior Secondary [2 years], Collegiate [2 years] and tertiary. There are 9,830 public schools and close to 4.0million children are enrolled. There are 15 state universities including one Open University.

Sri Lanka currently does not have a policy on OER. It is likely that the Open University of Sri Lanka may develop one, with the encouragement of the Commonwealth of Learning, in the near future.

THAILAND⁷⁵

In 2012 Thailand expended 7.6 % of its GDP on education⁷⁶. The government is the main provider of education in the country. It manages and supervisors all educational venture through the Ministry of Education from preschool to senior high school. A free basic education of twelve years is guaranteed by the constitution, and a minimum of nine years' school attendance is mandatory. Formal education consists of at least twelve years of basic education, and four years of higher education. Basic education is divided into six years of primary education and six years of secondary education, the latter being further divided into three years of lower- and upper-secondary levels. Kindergarten levels of pre-primary education, also part of the basic education level, span 2–3 years depending on the locale, and are variably provided. Non-formal education is also supported by the state. Independent schools contribute significantly to the general education infrastructure. There are about 169 Universities in the country of which 71 are private enterprises.⁷⁷

Administration and control of public and private universities are carried out by the Office of Higher Education Commission, a department of the Ministry of Education. While the Government's policy document makes reference to Open Education Resources, there is an absence of explicit policy instruments guiding OER developments. The Distance Education Foundation of Thailand is promoting a greater OER activities in the country. There are also a number of OER initiatives as listed in Table 14. below.

Table 14. OER initiatives in Thailand⁷⁸

⁷⁵ http://www.seameo.org/index.php?option=com_content&view=category&id=99&Itemid=525

⁷⁶ Data Source: <http://wdi.worldbank.org/table/2.10>

⁷⁷ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

⁷⁸ Nasongkla, J., Chen, S.H.A, Birzina, R., Pushpanadham, K., Khirwadkar, A., Kovacoca, j., Szudi, G., Pistovcakova, A. and L. Wong [2014]: Open Educational Resources Pedagogical Perspectives of Asian and European Scholars in Open Educational Resources in Lifelong Learning, [ed: B. Kim. KNOU Press, Seoul, S. Korea.

INITIATIVE	URL
Baan Pim	http://www.pim.in.th/
e-Learning	http://edltv.thai.net/
Thailand Cyber University Project	http://www.thaicyberu.go.th/
Intellectual Pook	http://www.trueplookpanya.com
South e-Learning Project	http://south.psu.ac.th/
CAI Studio	http://www.caistudio.info
Field Trip	http://fieldtrip.ipst.ac.th/
Malay Teaching Platform	http://malayu.nectec.or.th/
NETCET-Karen	http://karen.nectec.or.th/karen_index.php
Thai MOOC	
Sukhothai Thammathirat Open University	http://www.stou.ac.th/Eng/
iNET (Open Learn Sysytem)	http://www.lic.chula.ac.th/e-learning/ http://www.edu.chula.ac.th/inet

VIETNAM

In 2012 Vietnam expended 6.3% of its GDP on education⁷⁹. Education in Vietnam is divided into five levels: preschool, primary school, secondary school, high school and higher education. Formal education consists of twelve years of basic education. Basic education consists of five years of primary education, four years of intermediate education, and three years of secondary education. There are about 215 Universities in Vietnam. Of these 28 are privately owned.⁸⁰ Besides the Universities there are 223 junior colleges and 50 senior colleges. Thirty of the junior Colleges are private enterprises. Competition to publicly funded universities is extremely high and is managed by a University Entrance Examination. On an average more than million students sit for the University entrance exams and on an average about 20% pass these exams.

⁷⁹ Data Source: <http://wdi.worldbank.org/table/2.10>

⁸⁰ UNESCO-UIS[2014] Expanding Out, Expanding UP. Unesco Institute of Statistics. Montreal, Canada

The Government of Vietnam has an explicitly stated policy on OER and the MOE actively encourages all of its institutions of higher learning to embrace Open Courseware practices where it wishes participants “to contribute and share knowledge and encourage networking with the international OCW/OER communities.” Through such participation policy makers hope to achieve the following policy objectives:

- A solid infrastructure and appropriate tools as well as technical support and training for the development of OER in Vietnam
 - High quality course content based on available OER from leading universities in the world
 - Courses that have Vietnam-specific content that considers the Vietnamese culture
 - Develop new methods for the development of sample course materials
 - Establish a Vietnamese OER users’ community and encourage participants to contribute and share knowledge
 - To provide a solid infrastructure and appropriate tools as well as technical support and training for the development of OER in Vietnam
 - To develop high quality course content based on available OER from leading universities in the world
 - To provide the OER community with courses that have Vietnam-specific content that considers the Vietnamese culture
 - To provide new methods for the development of sample course materials
 - To establish a Vietnamese OER users’ community and encourage participants to contribute and share knowledge
 - To encourage networking with the international OER communities.
 - To provide a solid infrastructure and appropriate tools as well as technical support and training for the development of OER in Vietnam
 - To develop high quality course content based on available OER from leading universities in the world
 - To provide the OER community with courses that have Vietnam-specific content that considers the Vietnamese culture
 - To provide new methods for the development of sample course materials
 - To establish a Vietnamese OER users’ community and encourage participants to contribute and share knowledge
 - To encourage networking with the international OER communities.
 - Encourage networking with the international OER communities.

The Vietnam Foundation has along standing arrangement with Rice University and through Connexions translates American texts into Vietnamese for free access locally.

