

Higher Education and Open Educational Resources in Asia: An Overview

Gajaraj Dhanarajan and Ishan Sudeera Abeywardena

Abstract

Higher education has experienced phenomenal growth in all parts of Asia over the last two decades. This expansion, coupled with a diversity of provisions, has meant that more and more young Asians are experiencing tertiary education within their own countries. Notwithstanding this massive expansion of provisions, equitable access is still a challenge for Asian countries. There is also concern that expansion will erode quality. The use of digital resources is seen as one way of addressing the dual challenges of quality and equity. Open educational resources (OER), free of licensing encumbrances, hold the promise of equitable access to knowledge and learning. However, the full potential of OER is only realisable by acquiring: (i) greater knowledge about OER, (ii) the skills to effectively use OER and (iii) policy provisions to support its establishment in the continent's higher education milieu.

Keywords: Asia, higher education, digital resources, open educational resources, OER awareness, policies, practices, benefits and barriers

Higher Education in Asia

The last three decades has seen a rapid increase in the provision of higher education in almost all parts of greater Asia — from the Korean peninsula in the east to the western borders of Central Asia. Nowhere has this increase matched the growth seen in South, South East and Far East Asia. Universities, polytechnics, colleges and training institutes with a variety of forms, structures, academic programmes and funding provisions have been on an almost linear upward progression (Table 1.1).

Table 1.1: Number of higher education institutions in selected countries¹

Country	Three- to four-degree & post-graduate schools	Two- to four-year undergraduate schools	Two- and three-year diploma schools	Short certificate schools	Professional and technical schools
Cambodia	69	9	-	-	-
PRC	1,237	1,264	1,878	-	-
India	504	28,339	-	-	3,533
Indonesia	480	3967	162	-	-
Laos	34	-	11	-	-
Malaysia	57	488	24	37	-
Philippines	1,710	-	114	30	-
South Korea	197	152	-	-	-
Sri Lanka	15	16	-	-	-
Thailand	102	32	19	-	-

In addition to governments, private for-profit and not-for-profit organisations, public-private partnerships, international agencies and intergovernmental agencies have been participating in and financially supporting this growth. With the arrival of and access to the Internet, World Wide Web and a huge range of fast and intelligent information and communication technologies (ICT), many individuals have also been prepared to share their life experiences and knowledge with others through YouTube, Flickr, Wikieducator and other similar tools. Consumers of education have themselves become producers of education. The growth in Asia reflects the growth in many other parts of the world, which was experiencing increased participation from 28.6 million in 1970 to about 152.7 million in 2007, at a rate of increase of almost 4.6 per cent per year (UNESCO, 2009). Between 1990 and 2005, about 98 million Asians had experienced one or another form of tertiary education in a variety of institutions, ranging from technical colleges to universities (Table 1.2).

Table 1.2 is also illustrative of high levels of termination in higher education by millions of young people who, despite being qualified to meet the challenges of higher education, are unable to fulfil their aspirations. The gap between demand for and supply of higher education still continues to be high. Further exacerbating this situation is that those failing to gain admission into higher education are often from the marginalised segments of a nation's population.

Unequal access to higher education on the basis of gender, economic and social status, location of residence and poor prior schooling all continue to challenge many Asian nations. Countries such as Cambodia, Laos, India, Indonesia, Pakistan and Vietnam have low participation rates for the 17-24 age cohort. Further, policies on widening participation in higher education will also require serious regard for many other groups besides those described so far. These other groups include challenged and displaced persons, migrant labourers, immigrants and the elderly. Many international conventions and covenants provide a framework for countries to consider. As of June 2009, only India, the Philippines and Bangladesh had ratified conventions, whilst others are moving slowly on this front, even though countries like Malaysia have policies in place to facilitate access for challenged persons.

¹ Data extrapolated from Asian Development Bank, 2012.

Table 1.2: Upper secondary gross, graduation and tertiary entry ratios (Asian Development Bank, 2012)

Country	Secondary gross enrolment ratio	Upper secondary gross graduation/ completion (ISCED 3A)	Gross entry ratio into tertiary (ISCED 5A)
Cambodia	23a	7.5e, f	
China	72a	33	14
India	52a	28	13c
Indonesia	58a	31	17
Laos	27b	5.3c, f	
Malaysia	82a		26c
Philippines	72a, c	64	
South Korea	102a	62	61
Sri Lanka	56.6f	28.3c, f	21.2c
Thailand	82a	40	20
Vietnam	25.5a, b	12.5c	

ISCED = International Standard Classification of Education. ISCED 3A = upper secondary level of education; programmes at level 3 are designed to provide direct access to ISCED 5A. ISCED 5A = first stage of tertiary education; programmes are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements.

Sources: (a) UNESCO, 2009 (data from [b] 2005, [c] 2006, [d] 2001); (e) not segregated under ISCED; (f) Barro & Lee, 2010.

Besides this normal age cohort, many other groups are also seeking or requiring access to higher education. The biggest amongst these are adults who wish to return to learning. For many of these adults, higher education was denied them earlier. Their return to study requires facilitation which in an already supply-poor situation presents difficulties. Not facilitating or incentivising such returnees is not only a social denial, but also economically counterproductive. Malaysia presents such a situation. The country aspires to be high-income in another decade. To support that aspiration, it requires an adult workforce of highly skilled and knowledgeable citizens. Currently, of its 12 million citizens in the workforce, more than 80 per cent have less than a secondary school education. This is a serious concern, given the country's ambition. Policy initiatives will be required to increase participation. Countries such as Malaysia recognise this dilemma and are actively pursuing policies to widen participation. This may not be the case all across Asia. Special policies include creating alternate pathways of entry, part-time studies, distance education, special financial incentives and arrangements, recognition of workplace training and according of academic credit for such training through policy instruments promoting lifelong learning. South Korea, like its other OECD counterparts, has long been a leader in such arrangements. The Philippines, Indonesia, Thailand, India and China all have enculturised lifelong learning or are moving towards doing so.

Besides “balancing the continued expansion of access with greater attention to equity” (Asian Development Bank, 2011), higher education in Asia is also

challenged by other concerns. According to a recently published study by the Asian Development Bank (2011), these include the following:

- Maintaining and improving education quality, even in the face of serious financial constraints.
- Increasing the relevance of curriculum and instruction at a time of rapid change in labour market needs.
- Increasing and better utilising the financial resources available to higher education.

In many development circles in Asia, ICT has been viewed if not as a panacea then at least as having the potential to address many of the above challenges. In an earlier report on the role of ICT in education, the Asian Development Bank (2009) went on to declare:

ICT has the potential to “bridge the knowledge gap” in terms of improving quality of education, increasing the quantity of quality educational opportunities, making knowledge building possible through borderless and boundless accessibility to resources and people, and reaching populations in remote areas to satisfy their basic right to education. As various ICTs become increasingly affordable, accessible, and interactive, their role at all levels of education is likely to be all the more significant in making educational outcomes relevant to the labor market, in revolutionizing educational content and delivery, and in fostering “information literacy”.

Many Asian nations have been investing in ICT for the last four decades or so, and some of these countries (e.g., South Korea, Japan, Singapore, Malaysia) have ICT infrastructures that rank amongst the best in the world; on the other hand, in many Asian countries ICT developments are somewhat modest, or even inadequate to support the needs of higher education. Notwithstanding, there is a clear appreciation of the role that ICT, especially digitised learning resources, can play in expanding access and improving the quality of education.

Use of Digitised Educational Resources in Asian Higher Education

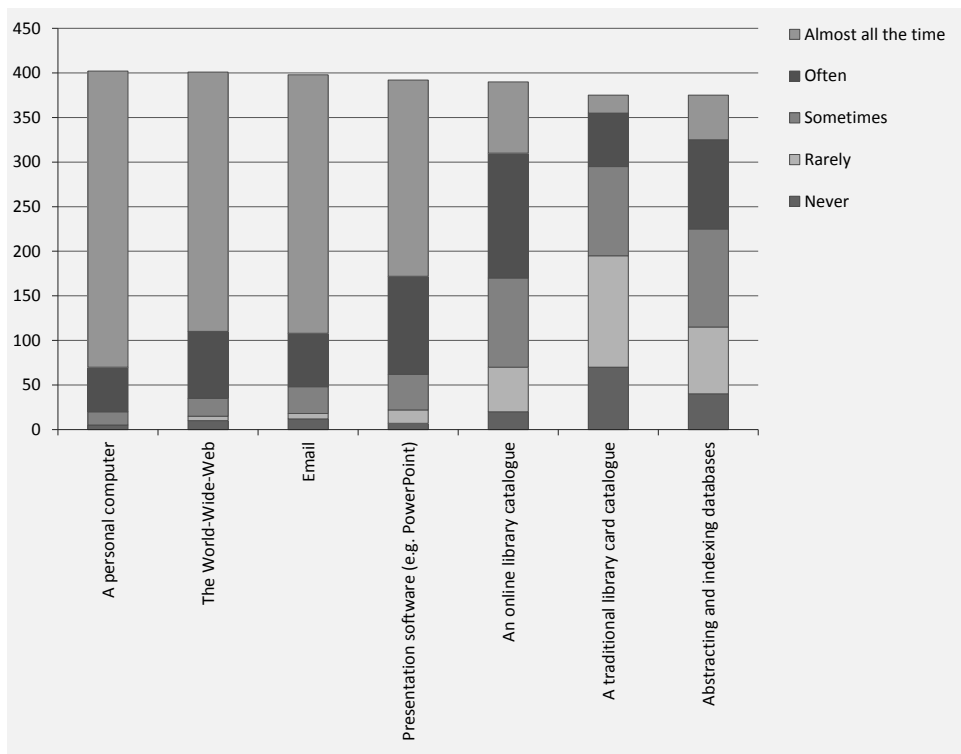
During the last 40 years, Asian nations have developed an affinity for the use of ICT to serve education in a variety of ways. These technological tools have been employed to deliver education in various sectors and at various levels. Institutions have been using both low and high technologies, and many that have been using the former, such as analogue broadcast radio and television and print, have been gradually moving in tandem with the evolution of the latter, i.e., from the analogue to the digital realm using the Internet, the World Wide Web and multimedia resources. Amongst a few, pedagogy has also evolved along with the technologies, albeit not at the same pace. Of the new pedagogies, distance education or open distance education has proven to be especially attractive to policy makers and budget-conscious administrators, as well as a segment of learners who look for a much more self-directed and flexible learning environment. But increasingly, eLearning, virtual campuses and online courses are also being delivered, especially in ICT-rich environments like South Korea and

Japan. The availability of new technologies has also created opportunities in other Asian countries to embed digital resources in their courses delivered on- or offline. However, the use of digital resources for teaching or learning is not uniform across or within nations. A number of factors either enable or hinder such use. In a recent study conducted with the support of a grant from the International Development Research Centre of Canada, researchers found, through a survey of some 580 academic staff from ten Asian countries (South Korea, Japan, China, Hong Kong, the Philippines, Indonesia, Vietnam, Malaysia and India), the following.

Access to ICT infrastructure and digital infrastructure

What was seen as a major impediment even as recently as the turn of the millennium is no longer viewed as a major challenge. Reliable electricity, available and affordable appliances, the skills to install, maintain and use appliances, and access to the Internet (albeit at a higher connection cost and smaller bandwidth) are there for most workers in higher education. Urban populations, both staff and students, have easier access to ICT infrastructure, but with the increasing availability of mobile devices and telephones the urban-rural imbalance 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 (Figure 1.1).

Figure 1.1: The availability of ICT infrastructure in selected Asian countries



Sources of digital resources

As Table 1.3 indicates, almost all academic staff use the popular search engines (Google, Yahoo!, Safari and Bing). A few build and maintain their own personal collections and/or use media sources, such as CNN, BBC or local television and radio channels. There is limited use of resources from museums, professional organisations and commercial databases (probably a reflection of the cost to access these resources).

Table 1.3: Sources of digital resources (after Dhanarajan & Abeywardena, 2012)

Sources of digital resources	Use (%)					N
	Almost all the time	Often	Sometimes	Rarely	Never	
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., via 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 URLs relevant to particular disciplinary topics	13.04	33.25	36.32	11.51	5.88	391
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

Use of digital resources

Table 1.4 shows that depending on residential locations and bandwidth availability, academics *mostly* accessed a range of resources, such as: digital readers (e.g., Adobe Acrobat); images or other visual materials, such as drawings, photographs and art posters; online reference materials; digitised documents; digital film or video; and course packs. The least accessed resources included data archives; audio materials, such as speeches and oral interviews; online diaries; government documents; and simulations or animations.

Table 1.4: Types of digital resources and their frequency of use (after Dhanarajan & Abeywardena, 2012)

Types of digital resources	Use (%)					N
	Almost all the time	Often	Sometimes	Rarely	Never	
Digital readers (e.g., Adobe Acrobat)	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	25.0	7.1	2.9	396
Online or digitised 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., MIT OpenCourseWare, World Lecture Hall, MERLOT)	13.8	29.4	33.3	15.3	8.3	398
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

Factors inhibiting the use of digital resources

Two types of barriers seem to dissuade individuals, especially teachers, from using digital resources: technical and attitudinal. The technical barriers include: needing technical support to search and find digital resources; locating and clearing copyright; setting up technical infrastructure (computers, connections); installing appropriate software; evaluating the quality of resources; integrating resources into learning management systems; and using learning management systems (Table 1.5). The attitudinal barriers mostly arise from (i) apprehension about the quality of the digital resources, the context of their creation and the appropriateness of the resources to buttress the curriculum, (ii) lack of confidence in learners' skills to use digital resources and (iii) anxieties over issues relating to plagiarism (Table 1.6).

Table 1.5: Technical barriers to the use of digital resources (after Dhanarajan & Abeywardena, 2012)

Barriers	Extremely important	Very important	Somewhat important	A little important	Not at all important	N	Percentage
Support with interpreting copyright laws and/or securing copyright permission	35.60%	38.90%	16.20%	6.40%	2.80%	388	92.40%
Support with finding digital resources	35.00%	42.20%	13.80%	5.40%	3.60%	391	93.10%
Support with assessing the credibility of digital resources	34.60%	41.30%	15.40%	5.40%	3.30%	390	92.90%
Support with obtaining or setting up technical infrastructure (servers, computers, smart classrooms, etc.)	31.30%	38.20%	20.40%	6.70%	3.40%	387	92.10%
Support with evaluating the appropriateness of resources for my teaching goals	27.50%	38.00%	19.00%	11.60%	3.90%	389	92.60%
Support with gathering, organising, and maintaining digital materials	26.50%	45.50%	16.20%	7.70%	4.10%	389	92.60%
Support with digitising existing resources	26.00%	39.70%	22.90%	7.30%	4.20%	385	91.70%
Support with integrating resources into a learning management system (e.g., Moodle, Sakai)	24.90%	33.40%	23.10%	12.40%	6.20%	386	91.90%
Support with training students to find or evaluate digital resources	24.00%	39.80%	25.10%	7.80%	3.40%	387	92.10%
Support with importing resources into a course website or a database	21.80%	36.40%	23.40%	13.50%	4.90%	385	91.70%
Support with learning how to use a learning management system (e.g., Moodle, Sakai)	20.00%	42.10%	19.00%	12.20%	6.80%	385	91.70%
Support with creating my own website	19.30%	32.00%	27.60%	14.70%	6.40%	388	92.40%

Table 1.6: Non-technical barriers to the use of digital resources (after Dhanarajan & Abeywardena, 2012)

Barriers	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	N	Percentage
They cannot substitute for the teaching approaches I use	13.60%	26.90%	33.80%	25.80%	361	86.00%
I don't have time to use digital resources	11.80%	24.60%	33.00%	30.60%	382	91.00%
Digital resources are difficult for me to access	9.70%	20.20%	35.20%	34.90%	381	90.70%
Digital materials can be presented outside their original context	8.30%	24.50%	41.90%	25.30%	363	86.40%
They are irrelevant to my field	7.70%	23.10%	35.60%	33.50%	376	89.50%
Using them distracts from the core goals of my teaching	5.60%	22.70%	40.60%	31.00%	374	89.00%
Students don't have the information literacy skills to assess the credibility of digital resources	5.40%	25.10%	37.60%	31.90%	367	87.40%
I don't want my students to copy or plagiarise material from the Web	4.20%	21.90%	42.70%	31.20%	356	84.80%

Factors enabling or encouraging academic staff to use digital resources

These factors relate either to pedagogical reasons (Table 1.7) — such as a desire to be current in knowledge, access to content not available in the local institution, and availability of sophisticated media, digital resources and supporting research — or to personal reasons (Table 1.8), including “exciting” learners about new ways of learning and engaging in critical thinking, providing learners with current knowledge from primary sources, supporting learner creativity and enabling learning flexibility by allowing content to be available 24/7. Also emerging amongst innovators are many novel opportunities that new digitised resources present. These include collaborating in and sharing of curriculum, learning materials and associated tools/technologies. In parallel to technological advancements has been a desire of many to share — especially learning materials — free of legal and logistical restrictions. The rearrangement of licensing protocols and regulations, such as via the family of Creative Commons provisions, is encouraging Asian academics to explore a range of activities, including participation in the global open educational resources (OER) movement.

Table 1.7: Pedagogical reasons (after Dhanarajan & Abeywardena, 2012)

Factors	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	N	Percentage
It helps me get students excited about a topic	57.30%	36.10%	5.90%	0.80%	393	93.60%
It improves my students' learning	54.50%	39.50%	5.90%	0.00%	387	92.10%
It helps me let students know the most up-to-date (or most current) developments in the subject	54.40%	37.90%	7.20%	0.50%	388	92.40%
It helps me provide students with a context for a topic	52.40%	44.00%	3.10%	0.50%	391	93.10%
It allows me to integrate primary source material into the course	45.50%	44.70%	9.00%	0.80%	387	92.10%
It allows my students to be more creative	42.50%	46.40%	9.80%	1.30%	386	91.90%
It is more convenient for my students and their schedules	40.50%	42.60%	14.60%	2.30%	383	91.20%

Table 1.8: Personal reasons (after Dhanarajan & Abeywardena, 2012)

Factors	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	N	Percentage
It saves me time	39.50%	37.10%	16.40%	7.00%	385	91.70%
It provides access to resources that we don't have at our college	39.10%	46.10%	12.20%	2.60%	386	91.90%
It allows me to do things in the classroom that I could never do otherwise	36.40%	47.30%	11.40%	4.90%	385	91.70%
It allows me to stay up to date with my colleagues	35.70%	35.90%	20.60%	7.80%	384	91.40%
It helps me to teach critical thinking skills	35.10%	41.00%	19.10%	4.90%	388	92.40%
It helps me to integrate my research interests into my course	34.10%	49.40%	14.50%	2.10%	387	92.10%
I like or feel very comfortable with the new technologies	30.60%	48.10%	17.70%	3.60%	385	91.70%
It helps me to teach information literacy (i.e., evaluating the online materials for themselves)	29.90%	47.90%	18.00%	4.10%	388	92.40%
I enjoy having my teaching practices and course materials available to anyone in the world who would like to use them	29.70%	43.00%	19.90%	7.40%	377	89.80%
The administration (deans, chairs, provost) encourages me to use digital resources more	20.80%	32.80%	26.60%	19.80%	384	91.40%
It may help me get promoted or get tenure	10.70%	25.10%	35.50%	28.70%	383	91.20%

Pursuing OER

Open educational resources are increasingly being promoted by enthusiasts as a solution, amongst many others, to overcome the challenges of access, quality and cost in providing or participating in higher education, all over the world. Whilst in many parts of the developed world cost has often been cited as a reason to seriously consider OER as an alternative to expensive textbooks, skyrocketing tuition fees and inflexible learning opportunities within conventional systems, in the developing world inequitable access to learning, especially at the tertiary level — both formal and non-formal — has been presented as an argument to buttress the case.

Conceiving of OER purely in terms of access, cost and quality is perhaps limiting, as there are other more profound reasons to assert a place for OER in higher education.

Even though ideas relating to OER have been in circulation, globally, over the last decade or so, developments in the poorer Asian nations have been slow. Similarly, and despite the contemporary international debate and dialogue, knowledge of OER and their value amongst members of the larger Asian academic community as well educational policy makers is modest at best. Even in countries where there is familiarity, such as Japan, China and India (all of which already have some kind of arrangements to share digitised course content through consortium arrangements),² discernible gaps exist regarding understanding and application in many of the following aspects:

- Detailed knowledge of OER as a practice.
- Knowledge of user needs.
- Knowledge of usage levels amongst various user groups.
- The characteristics of organisations successfully using OER.
- A knowledge of and compliance with standards.
- The range of technological assets required to benefit from OER.
- The human capacities needed to develop and manage OER.
- Other contextual factors (e.g., bandwidth).

Notwithstanding the above, a number of national and institutional initiatives are ongoing, ranging from the big to the tiny. Some examples of OER activity in the formal academic sector, described in the present volume, are: India's NPTEL (National Programme on Technology Enhanced Learning), the efforts by a consortium of the Indian Institutes of Technology (Chapter 17); Beijing Open University's non-formal educational courses (Chapter 1); formal degree programmes at the Virtual University of Pakistan (Chapter 8); South Korea's provision of employment-related training programmes (Chapter 6); Vietnam's efforts at producing translated versions of academic texts as open textbooks (Chapter 10); and formative efforts by Malaysia's Wawasan Open University (Chapter 11). In the non-formal sector, Indonesia's Open University is building a community of teachers to share learning resources through its teacher education forum (Chapter 18); a commercial publisher in the Philippines is putting together on a free-to-use basis historical and cultural documents about the Philippines (Chapter 13); and in India an international development agency, ICRISAT (International Crops Research Institute for the Semi-Arid Tropics) has created a suite of learning objects on agriculture and climate sciences, and made it available to farmers, extension workers and academics as OER (Chapter 12).

² www.ocwconsortium.org

There are any number of reasons why participation in an OER movement is beginning to happen (Table 1.9). It is still early days to predict how well a culture of producing, sharing, using and reusing OER will develop in most parts of Asia. At best, it is a development in progress, and at worst, it could be perceived as yet another techno-fad. Institutions and individuals who produce, access and use OER clearly perceive benefits, despite some difficult barriers. Survey findings from nine Asian countries regarding perceptions of benefits and barriers are presented in Tables 1.9 and 1.10.

Table 1.9: Perceived benefits of accessing and using OER (after Dhanarajan & Abeywardena, 2012)

Benefits	1	2	3	4	5	N	Percentage
	Very important				Unimportant		
Gaining access to the best possible resources	72.30%	21.00%	5.40%	0.60%	0.60%	314	74.80%
Promoting scientific research and education as publicly open activities	47.50%	34.90%	11.90%	3.80%	1.90%	318	75.70%
Bringing down costs for students	45.40%	29.30%	16.10%	6.60%	2.50%	317	75.50%
Bringing down costs of course development for institutions	42.40%	30.10%	15.20%	6.60%	5.70%	316	75.20%
Providing outreach to disadvantaged communities	44.00%	28.20%	17.70%	7.60%	2.50%	316	75.20%
Assisting developing countries	37.80%	26.70%	21.30%	9.80%	4.40%	315	75.00%
Becoming independent of publishers	27.60%	23.70%	28.80%	12.20%	7.70%	312	74.30%
Creating more flexible materials	47.20%	33.20%	12.00%	3.20%	4.40%	316	75.20%
Conducting research and development	50.30%	27.40%	15.60%	4.80%	1.90%	314	74.80%
Building sustainable partnerships	41.50%	27.50%	21.10%	6.10%	3.80%	313	74.50%

Table 1.10: Barriers to producing and utilising OER (after Dhanarajan & Abeywardena, 2012)

	1	2	3	4	5	N	Percentage
	Very important				Unimportant		
Lack of awareness	51.00%	29.90%	9.90%	3.80%	5.40%	314	74.80%
Lack of skills	30.60%	40.80%	17.20%	5.40%	6.10%	314	74.80%
Lack of time	24.20%	30.60%	24.20%	9.70%	11.30%	310	73.80%
Lack of hardware	17.30%	24.70%	25.00%	15.10%	17.90%	312	74.30%
Lack of software	18.70%	28.80%	23.40%	13.60%	15.50%	316	75.20%
Lack of access to computers	19.50%	19.20%	13.40%	16.00%	31.90%	313	74.50%
Lack of ability to locate specific and relevant OER for my teaching	23.60%	33.70%	22.30%	11.30%	9.10%	309	73.60%
Lack of ability to locate quality OER for my teaching	27.90%	39.60%	18.80%	8.40%	5.20%	308	73.30%
No reward system for staff members devoting time and energy	25.60%	31.10%	22.80%	7.40%	13.10%	312	74.30%
Lack of interest in pedagogical innovation amongst staff members	28.60%	32.80%	22.80%	7.70%	8.00%	311	74.00%
No support from management level	27.40%	28.10%	21.80%	11.90%	10.90%	303	72.10%

Awareness and knowledge of OER

To those who are ardent advocates of OER, benefits of utilising these free resources are familiar. However the higher education community in Asia is large, diverse and relatively conservative in its attitudes towards teaching and learning.

Awareness as well as knowledge-building, amongst both teachers and policy makers, is critical for the acceptance and integration of resources for teaching. Such awareness is currently very low — recent advocacy efforts by UNESCO and the Commonwealth of Learning (COL) through their joint declaration on OER (UNESCO & COL, 2012) are helpful, but OER need to be popularised; greater efforts at knowledge-building, especially amongst policy makers and institutional management, have to be enhanced. Such knowledge-building has to be comprehensive and current — those in decision-making positions must be aware of what OER exist, in what contexts and how they have been used, how to gain access to them, what technologies and skills are required for teachers and learners alike to access them, and the pedagogical and economic benefits of OER.

Table 1.11: Familiarity with and awareness of OER (after Dhanarajan & Abeywardena, 2012)

Country	Familiarity and awareness			Total (N)
	Yes	No	Unsure	
China	40	21	11	72
	55.60%	29.10%	15.30%	100.00%
Hong Kong	8	9	2	19
	42.10%	47.40%	10.50%	100.00%
India	25	14	9	48
	52.10%	29.20%	18.80%	100.00%
Indonesia	27	7	4	38
	71.10%	18.40%	10.50%	100.00%
Japan	5	4	0	9
	55.60%	44.40%	0.00%	100.00%
Malaysia	16	3	4	23
	69.60%	13.00%	17.40%	100.00%
Philippines	20	1	3	24
	83.30%	4.20%	12.50%	100.00%
South Korea	46	10	6	62
	74.20%	16.10%	9.70%	100.00%
Vietnam	15	4	1	20
	75.00%	20.00%	5.00%	100.00%

Purpose of OER

The international debate on a purpose for OER in the higher education milieu continues to engage scholars passionately. Such debate also encompasses more recent arguments around massive open online courses, or MOOCs, and their range of analogues. What was once considered a straightforward purpose for OER — i.e., resources such as “courses, course materials, content modules,

collections, and journals . . . [as well as] tools for delivering educational content, e.g., software that supports the creation, delivery, use and improvement of open learning content, searching and organisation of content, content and learning management systems, content development tools, and on-line learning communities meant to be used for education”,³ not necessarily for academic credit — is no longer the case. As technology innovations progress, new agendas have become part and parcel of OER dialogues; MOOCs are a recent innovation that have confused the open space for consumers and academics alike.

In the context of developing Asia, it may be useful to promote OER with an unambiguous clarity of purpose, such as that OER improves cost-free access to up-to-date and current information relating to content, reduces the cost of curriculum transformation, assists in designing employment-relevant curriculum, supports flexible ways of delivering curriculum and facilitates inter-institutional collaboration and co-operation in content development and sharing.

Policies on OER

In many parts of Asia, government policy support can accelerate the adoption of innovations in education. Governments have it in their powers, through a variety of instruments, to support innovation or retard it. Asian governments could discourage OER production, use, reuse and distribution in a number of ways, including: (i) restricting the free flow of information, (ii) limiting access to search engines, (iii) limiting financial support for adopting innovations, (iv) limiting the extent to which curriculum and content can be explored at the delivery end and (v) discouraging the use of Creative Commons licences. At the last count, some eleven countries in Asia had established national affiliates. Some of the affiliates are active, whilst others are not.

Besides policy support at government levels, such support or lack thereof at institutional levels also places limitations 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 whilst there is sufficient familiarity, at a surface level, with copyright legislation and Creative Commons licensing in at least 300 of the academics surveyed, fewer had in-depth knowledge of both (Dhanarajan & Abeywardena, 2012). Institutional policies to incentivise, through recognition and rewards, the production and use of OER are also somewhat thin in most Asian institutions.

Table 1.12: Policy matters (after Dhanarajan & Abeywardena, 2012)

Institutional policy items	Yes	No	Total [N]
Knowledge of copyright	63 [97%]	24 [3%]	65
Knowledge of CC licences	41 [63%]	24 [37%]	65
Provisions for sharing, collaborating in and using OER	13 [18%]	58 [82%]	71
Provisions for incentivising OER participation	25 [35%]	46 [65%]	71
Provisions for staff development	29 [42%]	40 [58%]	69

³ http://en.wikipedia.org/wiki/Open_educational_resources

Skills at using the technologies buttressing OER

Adequate national ICT infrastructures, such as telephony, access to computers, adequate bandwidth, freedoms relating to using the Internet, exploring the WWW for content through search engines, as well as knowledge of and skills to use a range of appropriate software are all important prerequisites for greater participation in OER-related activities. As mentioned earlier, most Asian nations have adequate ICT provisions. Skills to use computers and access to the Internet are also adequate; however, the limited availability of bandwidth and appropriate software to access, remix, reuse and redistribute content requires further and additional investment. The poorer nations and their institutions (especially in the rural areas) are somewhat handicapped in this aspect. Until all the technologies buttressing OER are freely and easily available, many developing Asian countries will not be in a position to benefit from the full potential of OER for a little whilst to come.

Conclusion

Whilst interest in and the production, distribution and use of OER are still very much in the early stages of development in most parts of Asia, OER's potential value to improve the quality of curriculum, content and instruction, facilitate academic collaboration and enhance equitable access to knowledge resources cannot be overstated. Marshall Smith, in an unpublished paper (2011), articulated this elegantly:

Knowledge should be universal but is unequally and unfairly distributed and OER will help to overcome the gaps. A second narrative emphasize[s] the opportunity for users to become producers by having the opportunity to change and adapt OER for their purposes. This same narrative [holds] that OER [provide] new opportunities for teachers and other non-technical people to become producers of totally new open content and tools. A third narrative holds that OER [have] the potential to transform opportunities for learning and teaching by providing opportunities for students to learn on their own for free and from others (peers, mentors) on the networks and in the crowd, and to potentially get credit for the learning.

All of these narratives are still operable. A fourth narrative is about fulfilling the first three in the developed world and, more importantly, in the developing world. This is the narrative of implementation, helping to create appropriate technical infrastructure including the necessary tools such as platforms and Creative Commons licences to construct quality open materials, making it possible for OER to be easily accessed and used, and supporting local communities, government and NGOs in their efforts to use OER effectively. This is the narrative of our times — it will not be a smooth road but the opportunities that it may provide are worth it.

It is in pursuit of especially the fourth narrative that educators and their political masters need to invest efforts in OER, which have the potential to serve a potpourri of multiple purposes in Asian higher education.

Acknowledgements

The authors wish to acknowledge the support of the International Development Research Centre of Canada for its grant (No. 104917-001), without which it would not have been possible to gather the data buttressing this chapter. We also wish to acknowledge the many colleagues at Wawasan Open University and in the Asian region who were most helpful in supporting us throughout the study. Many of them are contributors to the various chapters in this volume.

References

- Asian Development Bank. (2009). *Good practice in information and communication technology for education*. Manila: Asian Development Bank. Retrieved from <http://www.adb.org/sites/default/files/pub/2009/Good-Practice-in-ICT-for-Education.pdf>
- Asian Development Bank. (2011). *Higher education across Asia: An overview of issues and strategies*. Manila: Asian Development Bank. Retrieved from <http://www.adb.org/sites/default/files/pub/2011/higher-education-across-asia.pdf>
- Asian Development Bank. (2012). *Access without equity? Finding a better balance in higher education in Asia*. Manila: Asian Development Bank. Retrieved from <http://www.adb.org/sites/default/files/pub/2012/access-without-equity.pdf>
- Barro, R., & Lee, J. W. (2010). A new data set of educational attainment in the world, 1950–2010. NBER Working Paper No. 15902. Cambridge, MA: National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w15902>
- Dhanarajan, G., & Abeywardena, I. S. (2012). A study of the current state of play in the use of open educational resources in the Asian region. Unpublished report of a project on open access and quality in Asian distance education.
- Smith, M.S. (2011). Open educational resources: Opportunities for the developing world. Unpublished report.
- UNESCO. (2009). *Global education digest: Comparing education statistics across the world*. Montréal: UNESCO Institute of Statistics. Retrieved from <http://www.uis.unesco.org/Library/Pages/DocumentMorePage.aspx?docIdValue=80&docIdFld=ID>
- UNESCO & COL. (2012). 2012 Paris OER Declaration. Retrieved from http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/Paris%20OER%20Declaration_01.pdf