



## ICT in the changing landscape of higher education in Southeast Asia

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As in the developed nations, developing countries in the Southeast Asian region increasingly are recognising the important role higher education plays in enhancing the human resources of a nation for promoting its development in a world of depleting natural resources. Advances and pervasiveness of ICT in the society mean that higher education systems in the region are increasingly leveraging ICT in handling the many arising challenges faced by higher education systems in Southeast Asia. Some of the possible roles of ICT in higher education in the face of these challenges discussed in this paper are *what and how students learn, when and where students learn, who the new faces of students and lecturers are, and ways to reduce the cost of education*. However, research-based knowledge on how ICT has been and can be used to enhance the design, delivery and management of higher education programs in the Southeast Asia region is not readily available. Furthermore, countries in Southeast Asia are at different stages of development in the use of ICT in education. Thus, success stories, experiences and lessons learnt from the use of ICT in higher education will be of immense importance for educators and administrators who are at the forefront of integrating ICT for higher education in countries in the region.

### Introduction

Although higher education systems of countries in Southeast Asia appear to differ in many ways, many educationists believe that there are common strands within the challenges. Among these common strands are issues of massification, internationalisation, diversification, and marketisation of higher education. These issues are brought about by political, economic and social changes in the region and also by globalisation and the global economic crisis. These issues result in various challenges for the higher education systems in the region such as increases in the number of students and demands for higher education from a broader segment of society, demand for more accessible and affordable higher education, increases in the number and types of higher education providers and concerns for quality, increases in transnational education both as importers and providers, a rise in the number of open and distance learning institutions, an increase in cross-border academic activities, students and faculties, the use of entrepreneur and marketing approaches in higher education, enhancement of courses and programs to relate to career needs, and new content, knowledge and skills.

Southeast Asia, a sub-region of Asia is located south of China, east of India and north of Australia. Countries which form Southeast Asia are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Vietnam. These countries have varied political, cultural, socio-economic and

environmental settings. For example, Singapore is an island state, while in contrast, Indonesia has a huge population and large geographical area. According to the World Bank classification, Brunei and Singapore are classified as high-income countries; Malaysia and Thailand are upper-middle income countries, while Indonesia and the Philippines are classified as lower-middle income countries. On the other hand, Cambodia, Laos, Myanmar, Timor-Leste, and Vietnam are rated as low income countries. Thus, the majority of the countries in the region are developing nations. Except for Thailand, all other countries in the region have a colonial history, and generally their political, economic and education systems are influenced by their colonial heritage.

Education, or higher education, as this paper seeks to argue, is of interest to many quarters in Southeast Asia. Individuals see it as a means for self-advancement, while governments in the region view it as an important mechanism for national development. Amutabi and Oketch (2003) state that in developing countries, the demand for education has skyrocketed because education is seen as an important means for social, economic and political upward mobility. Welch (2011a) reported that this trend is also seen in Southeast Asian countries.

Higher education systems of countries in the Southeast Asia region, although started from different historical backgrounds, have all undergone numerous stages of development, influenced by their colonial heritage, economic development, nation building efforts, and global trends. However, despite the differences, researchers in higher education believe there are commonalities in issues and challenges faced by higher education systems in the region, and in providing opportunities for lessons learned to be shared across borders (Lee & Healy, 2006; Welch, 2011a). There are opportunities for mutual cooperation in various educational fields to enhance the quality of higher education in the region.

The higher education systems in countries of this region, of which most are developing countries, for instance have budgets to consider, quality to preserve, faculties to satisfy, and social demands and responsibilities to meet (Boeren & Maltha, 2005; Lee & Healy, 2006). In addition, the rapid increase in student enrolment, knowledge explosion, advances in information and communication technologies (ICTs), globalisation, economic restructuring, and financial constraints have all contributed to reforms in higher education (Hattangdi & Ghosh, 2008; Shin & Harman, 2009; Welch, 2011a). Hence, many higher educators in the region believe that closer cooperation and exchange of lessons learned can bring benefits to their respective higher education systems.

### **Some common issues in higher education in Southeast Asia**

A review of the literature on higher education related to Southeast Asia indicates that some of the common issues faced by higher education systems in the region include massification, diversification, internationalisation, and marketisation of higher education.

#### **Massification of higher education**

“Massification of higher education” refers to the movement towards increasing access for university-age students. It is one of the key developments in higher education globally (Altbach, 2005) and has likewise impacted on higher education systems in

Southeast Asia countries (Lee & Healy, 2006; Welch, 2011a). It includes efforts to transform higher education from being elitist to encouraging mass participation from different social, income and geographical groups. Massification programs reach out to students and individuals who otherwise may not have the opportunities to take up initial or further study and pursue professional development.

Massification of higher education results in increasing numbers of students in the higher education environments of Southeast Asian countries. The increasing demand for higher education and massification of higher education is brought about by population growth, the increasing affluence of many countries in the region, and democratisation of secondary education. Additionally, many parents and students in these countries see higher education as a route for social mobility. They see higher education as a chance to secure a good job, a passport to postgraduate studies at overseas universities and to work and live abroad (Welch, 2011a). At the national level, higher education is seen as a key mechanism for human capital development to sustain economic growth, to restructure society and promote national unity (Lee & Healy, 2006).

However, as for higher education systems in developing countries, success in massification of higher education includes not only ensuring provision of adequate infrastructure and academic resources but also in making certain that this increase in opportunities for higher education does not erode the quality of education (Shin & Harman, 2009). In addition, there is a need to balance the interests of the many new and different suppliers of higher education as the increasing presence of private sectors in higher education systems is one of the main drivers of massification of higher education.

### **Diversification in higher education**

The immense growth of higher education in Southeast Asia as highlighted previously, has led to a higher education environment increasingly crowded with various types of institutions, having their own aims and purposes, and catering to diverse groups of students, each with their own needs and requirements. Diversification of higher education has been crucial to how countries in the region expand and respond to the social and economic demands for higher education (Boeren & Maltha, 2005).

The simplest type of diversification refers to the differentiation between public and private sector providers of higher education. Many countries in the Southeast Asia region have seen a rapid increase in private sector higher education providers (Lee & Healy, 2006; Levy, 2006). In addition, there are also different types of private sector higher education providers, for example those run by profit-driven corporations, non-profit organisations and religious bodies (Levy, 2006), and the differentiation between traditional teaching versus research universities, on campus against distance and virtual universities, and polytechnics, technical institutes, as opposed to community colleges (Mok, 2009). Furthermore, there is a rise in the number of branch campuses of foreign universities in a number of Southeast Asia countries such as Malaysia (Sirat, 2006), Singapore (Tan, 2006) and Vietnam (Dai, 2006).

Leveraging on the developments in ICT, the traditional print media-based distance learning higher education institutions have evolved to become another important form of private education (Shin & Harman, 2009). Open and distance learning universities taking advantage of the affordances provided by ICT and the Internet are making

higher education more accessible to people, especially for working adults and those in remote rural areas. For many Southeast Asian countries, this development has been critical in increasing participation and enhancing access to higher education (Welch, 2011a).

### **Internationalisation of higher education**

Internationalisation of higher education is a strategy to increase delivery of higher education and ideas across national boundaries (Thune & Welle-Strand, 2005). Porter (1990) defined internationalisation as the higher education process of teaching, research and services becoming international and cross-cultural.

One aspect of internationalisation of higher education involves transnational education. Transnational education has been defined as any teaching or learning activity with students in a different country to that in which the institution providing the education is based (UNESCO-CEPES, 2000). The worldwide growth of transnational education and increasing establishment of foreign branch campuses in host countries, especially developing countries, show the high educational values and esteem associated with higher education providers from the United States of America, United Kingdom and Australia in Southeast Asia. The growth in transnational higher education also reflects the ability of higher education systems in these developed countries to export their higher education environments and provide access to young students who otherwise may not have been able to afford an overseas study experience (Welch 2011a).

Welch (2011a) reported that many countries in Southeast Asia are importers of transnational education from Australia and United Kingdom. However, he further noted that in importing transnational education, countries such as Malaysia, Thailand and Singapore in recent times have also become exporters, through providing educational services to students from neighbouring countries and setting up higher education institutions across borders. These three countries also have national objectives to become regional educational hubs. This strategy is best exemplified by Malaysia, where the government has actively supported and provided incentives to overseas universities to set up branch campuses, for example Nottingham University, Monash University, Swinburne University and Curtin University, and for the Open University of Malaysia to spread its wings in the region (Lee, 2004; Ramanathan, 2010; Welch, 2011b).

Internationalisation of higher education also includes mobility of students and academics around the world. It has become a common trend in the last ten years in developed countries (Altbach, 2005). In recent times, students and academics' movements among countries in Southeast Asia and beyond have been on the rise (Welch, 2011a). Efforts are also being made by higher education systems in the region to provide support programs to sustain and encourage such mobility, to ensure that all involved will benefit from the educational and cultural experience of overseas study and professional development programs.

Although most cross-border activities related to internationalisation of higher education are commercially motivated, some are not. For instance, developed countries tend to provide development aid and support capacity development and enhancement programs for education systems in countries such as Laos and

Cambodia, involving student fellowship and academic staff development programs. These programs also have a direct impact and influence on higher education policies and developments in the region.

### **Marketisation of higher education**

The rapid growth in enrolment in higher education systems and increasing cost of providing higher education have put tremendous financial strains on governments in Southeast Asian countries. This has resulted in an increasing influence of market economics in higher education. Terms such as competition, choice, diversity, accountability, consumer satisfaction and responsiveness are becoming more common. For example, there is a need for higher education systems in the region to source alternative avenues of funding, rather than depending solely on existing government funds. The higher education systems are also undergoing reform and restructuring to remain efficient and relevant. For many countries in the region, the restructuring of higher education has involved measures such as privatisation of higher education, corporatising public universities, implementing student fees and strategising partnerships between the public and private sectors (Hassan, 2001; Poapongsakorn, 2008; Zimmerman, 2004). In addition, in response to market demand and through active government involvement, foreign providers of higher education have gained a foothold in Southeast Asia through transnational education (Lee & Healy, 2006).

As is the trend globally, funding requirements and the drive of market forces have also led to higher education systems in the region adopting entrepreneurial approaches, including actively seeking new sources of funding through leveraging on its traditional strengths and coming up with innovative services (PA Consulting, 2010; Poapongsakorn, 2008). For instance, universities are increasingly looking at marketing their teaching, research and other knowledge-based services (Duderstadt, 1999; Lee & Healy, 2006). Universities are also maximising the commercial value of their physical assets, through setting up commercial enterprises or in joint ventures with the business sector (Scanzoni, 2009; Sirat, 2006).

Marketisation of higher education, driven to a large extent by privatisation of higher education, has expanded higher education enrolments in many countries (Shin & Harman, 2009). In some countries in the region, such as Indonesia and the Philippines, private higher education institutions outnumber public providers and play a crucial role in the higher education systems in the countries (Welch, 2011c). In Indonesia, the objectives of private higher education institutions are related to the traditional public service role to meet excess demand. However, in the Philippines, in addition to that, private higher education institutions also raise standards and serve the elite who can afford, for example, the De La Salle University. Although the provision of private higher education has a long tradition in these two countries (Lee & Healy, 2006), it is a relatively new development in other countries, such as, Malaysia (Lee, 2003), Singapore (Tan, 2006), and Vietnam (Lee & Ashwill, 2004). It is, however, clear that private education in the region has generally grown, although in some systems, it has been more than others (Welch, 2011a).

### **Some impacts of and reactions to the issues**

The issues of massification, diversification, internationalisation and marketisation of higher education in the region have impacted higher education systems in a number of

ways. These include an increase in the number of students and demands for higher education from a broader segment of students, and demands for more accessible and affordable higher education. Further impacts are seen in an increase in the number and types of higher education providers and concerns for quality. Additionally, other impacts include an increase in transnational education both as importers and providers, a rise in the number of open and distance learning institutions, an increase in cross-border academic activities, students and faculties, and the use of entrepreneurial and marketing approaches in higher education, and new content, knowledge and skills. Thus, these issues are very much related to theme of this Special Issue of AJET concerning the provision of affordable, accessible and quality higher education for the people in the region.

The issues presented here and their impacts can be seen as both threats and challenges, but they also provide opportunities for designing the future (Shin & Harman, 2009). Various policies, strategies and steps have been taken by governments and higher education providers in Southeast Asia. Among others, governments in the region are re-examining their roles in providing higher education, and reviewing the relationship between private and public providers. In addition, governments in the region are exploring mechanisms related to entrepreneurship, autonomy and governance, accountability, research, monitoring, accreditation, regulation, teaching and learning, student enrolment, use of ICTs and quality assurance in higher education systems. However, of particular interest to this paper is the use of ICTs in tackling the issues and challenges faced by higher education system in the region and in ensuring accessible, affordable, effective and efficient higher education to its people.

### **ICT integration in higher education**

The integration of ICT in higher education is 'inevitable' (James & Hopkinson, 2009). ICT has changed the way businesses and industries are conducted and influenced the way people work, interact and function in society (Bhattacharya & Sharma, 2007; UNESCO, 2002). ICT has become common place at home, at work, and in educational institutions (Kirkup & Kirkwood, 2005). The use of ICT, including the Internet at home and work places, has increased exponentially (McGorry, 2002).

As is the trend globally, countries in Southeast Asia are increasingly relying on ICT to address various issues including those related to higher education, in the face of depleting natural resources and the need to ensure sustainable development. Education drives the economic and social development in any country (Mehta & Kalra, 2006), and the economic crisis of 2008-2009 has heightened for countries in Southeast Asia the importance of having competent human capital to assist in the recovery of losses resulting from the crisis (Hassan, 2001; Purwadi, 2001). Higher education in developing countries serving as repositories of knowledge and human capital has to innovate and overcome the various issues confronting it, and to contribute to the economic development in times of such economic declines (Postiglione, 2009). Furthermore, the rapid rate at which new technologies change and develop also implies that higher education systems must keep pace with advancements in knowledge and skills, in addition to the demands and requirements for employees to stay relevant. It is crucial that universities in the region equip their students with the appropriate knowledge, skills and aptitudes to be competitive in an increasingly global and competitive economy.

Although the use of ICT is not the panacea for all the challenges faced by higher education systems in the region, it does leverage and extend traditional teaching and learning activities, and has the potential to positively impact on learning (Jaffer, Ng'ambi & Czerniewicz, 2007). Furthermore, ICT is becoming increasingly ubiquitous within higher education, and it has been used far beyond enhancing teaching and learning to include promoting research, scholarly community engagement, and administration (Balasubramaniam et al., 2009; Jaffer et al., 2007).

In addition, the integration of ICT in higher education is also moving beyond getting personal computers into the hands of learners and towards mobile technology, virtual world, and cloud computing, among others. Thus, higher education systems in the region has to be innovative and leverage on the developments in ICT to lead by example in using these cutting edge technologies to provide more accessible, affordable, effective and efficient higher education. The nations and the people in the region are counting on graduates of their higher education systems to be competitive in creating wealth for their respective countries.

Researchers tend to use different terms when referring to the use of ICT in higher education, and some of the common ones include *educational technologies* (Czerniewicz, Ravjee & Mlitwa, 2005), *learning technologies and e-learning* (Bandenhorst & de Beer, 2004), *online teaching and learning technologies* (Van der Merge & Moeller, 2004), *digital learning objects* (Smith, 2004), *communication technologies* (Blanchette & Kanuka, 1999), *web-based learning* (Czerniewicz, 2005), *hybrid or blended learning* (Thune & Welle-Strand, 2005), and *virtual learning environments* (Kirkup & Kirkwood, 2005). Blurton (2002) defined ICT broadly as a diverse set of technology tools and resources for communicating, creating, disseminating, storing, and managing information.

However, regardless of the terms used, Mlitwa (2007) states that these researchers generally link these terms to knowledge about ICT, ICT as a tool to advance knowledge, or ICT as a domain of knowledge for using ICT as a tool. As a tool, it extends human capabilities to solve problems, helps students in acquiring knowledge, and assists teachers and administrators in enhancing teaching and learning. Technology also encompasses the knowledge and skills required to effectively use ICT as a tool.

## **ICT roles in higher education**

The general view is that ICT can be pivotal in tackling the impacts of massification, diversification, internationalisation and marketisation in higher education (International Association of Universities, 1998; Thune & Welle-Strand, 2005). A survey of the literature on ICT utilisation in higher education indicated that the uses of ICT in facing these challenges are for reducing costs per student (Ozdemir & Abrevaya, 2007), making higher education more affordable and accessible (Ozdemir & Abrevaya, 2007), increasing enrolments (Fluck, 2003; Ozdemir & Abrevaya, 2007; Thune & Welle-Strand, 2005), enhancing students' mobility (Thune & Welle-Strand, 2005), catering for off-shore students (Bhattacharya & Sharma, 2007), influencing how a course is taught and how students learn (Casal, 2007; Mooij, 2007; Ozdemir & Abrevaya, 2007; Thune & Welle-Strand, 2005), developing higher order skills and collaborative skills (Bhattacharya & Sharma, 2007), enhancing flexibility of programs (Oliver, 2002), creating competition among institutions leading to improved quality (Cross & Adams, 2007), and meeting the needs of employers and encouraging life-long learners (Kozma,

2005; Lim & Hang, 2003, Ozdemir & Abrevaya, 2007). Thus, these uses of ICT are relevant for providing affordable, accessible and quality higher education.

Some possible roles of ICT in higher education systems in Southeast Asia countries in tackling the impact of issues such as massification, diversification, internationalisation and marketisation of higher education and in ensuring accessible, effective and efficient higher education, may be classified as the 4Ws: *What and how students learn, When and where students learn, Who the new faces of students and lecturers are, and Ways to reduce the cost of education.*

### **What and how students learn**

Traditionally, courses in universities have emphasised content and are centred on textbooks. Lecturers taught through lectures and presentations, and tutorials and assignments enabled students to rehearse and consolidate learning (Oliver, 2002). However, current pedagogical orientation and instructional technologies coupled with the pervasive presence of ICT encourage curricula focusing on competency and performance. These curricula emphasise capabilities and place importance on how information is used and, thus, require access to a multitude of information sources and information types. Learning is student-centred and learners require confidence in their core intellectual abilities, such as communication, interpretation, reflection and resolution (Forde, 2007).

The use of ICT in higher education has resulted in a move from teacher-centred delivery and transmissive learning to student-centred learning. ICT functions as information sources and cognitive tools, supporting and enabling students to be responsible for their own learning (Jonassen & Reeves, 1996). Hattangdi and Ghosh (2005) used the terms *informative, situating* and *constructive* tools to further define the functions of ICT. Learning environments become inquiry-based and problem-centred within authentic settings. Lecturers are facilitators, coaches and mentors and ICTs support the learning environment (Oliver, 2000).

The emergence of ICT as learning technologies creates awareness on the need to move beyond behaviourist learning theories among lecturers in higher education environments. Learning theories espousing student-centred learning, in particular constructivist principles, gain prominence. The constructivist hypothesis that learning is achieved by the active construction of knowledge within meaningful contexts (Duffy & Cunningham, 1996). Constructivism views instruction as the process of supporting knowledge construction rather than a process of transmitting knowledge. Social interactions play a critical role in the process of active construction of learning and cognition (Vygotsky, 1978).

In addition to ensuring that students gain appropriate knowledge and skills in content areas, higher education systems also place importance on their graduates having generic skills. In the past, generic skills encompassed capabilities such as the ability to reason, solve problems, communicate, manage time and resources, collaborate and work in teams. With the growing use of ICT in all aspects of present day life and work, there is a need for higher education systems to also ensure that graduates display appropriate levels of information literacy. McCausland, Wache and Berk (1992) define information literacy as the ability to identify an issue and then to identify, locate and evaluate relevant information to solve it.



### **When and where students learn**

Traditionally, students have to complete their study within a specified time-frame and the physical settings of their higher education institutions. Students have little say on what, when and how their programs are delivered. However, advances in ICT and changes in the landscape of higher education meant that to stay relevant and competitive, many institutions are now offering flexible choices on what, where and when students learn (Moore & Kearsley, 1996). In addition, some higher educational institutions have been offering programs at a distance for a number of years, and advances in ICT have extended the reach and scope of these institutions.

With ICT, learning in higher education system is no longer confined within programmed schedules and timetables. With this flexibility, learners are able to take part in learning activities without time constraints, and, hence, increasing the opportunities for more students to participate in formal learning programs. Mobile technologies and seamless communication technologies with synchronous and asynchronous capabilities enable learning environments to support real time and delayed participation in communicative tasks (Hattangdi & Ghosh, 2005).

Work-based learning is also increasingly becoming more popular with the integration of ICT in higher education (UNESCO, 2002). In work-based learning, students can access courses and programs from their workplace. Work-based learning advocates learning and training on a needs basis, thus, it is convenient and cost effective as it does not require travel and time away from work. Furthermore, knowledge and skills gained are meaningful and applicable in the workplace.

### **Who the new faces of lecturers and students are**

In the past, lecturers in higher education institutions comprised only of people with the appropriate postgraduate degree qualifications. However, an ICT rich learning environment allows institutions to broaden their academic staff beyond this group of people. More diverse individuals such as trainers, mentors, and experts from the workplace can now be part of the teaching and learning process, supporting students in a variety of flexible settings. There are also opportunities for lecturers from different institutions and different locations to share their experiences and expertise in a course. In addition, lecturers now have different responsibilities and also require new skills with high levels of ICT, and need to be facilitative rather than didactic in teaching (Littlejohn, Suckling, Campbell & McNicol, 2002).

Higher education in the past has been seen as elitist. It is often inaccessible to many students. The flexibilities provided by ICT means that students who previously were unable to continue their post-secondary education now have improved opportunities to do so. In addition, with ICT being increasingly and innovatively used in marketing and recruitment of students, student demographics are changing, and will continue to change as more people looking to further their learning and training take advantage of the increased opportunities (Bourke, 2000; Thune & Welle-Strand, 2005).

Although previously off-campus learning catered towards students who were unable to attend campuses due to distance, work, and other commitments, today's distance learners are not limited only to this group of students. The students opting for distance learning also include those taking advantage of technology-facilitated learning

integrated in most distance learning programs. ICT facilitated educational programs remove many of the geographical, time and physical constraints that learners previously faced (Young, 2002).

The increasing phenomenon of knowledge and information becoming outdated in a shorter time span has contributed to the emergence of the concept of lifelong learners (OECD, 2007). Furthermore, fewer individuals expect their career to be with one employer, and regular training is often required (Forde, 2007). Thus, individuals increasingly have to continuously access knowledge, including via ICT, to keep pace with the latest developments (Plomp, Pelgrum & Law, 2007). In such a scenario, higher education, which has always played a pivotal role in the economic and social growth of a country, becomes even more important. Education increases the productive skills of individuals and also their earning power. It enables individuals to absorb new ideas, increase social interaction, gain access to improved health and many more tangible and intangible benefits (Kozma, 2005).

### **Ways to reduce the cost of education**

Although the usual thinking has always been that ICT-based learning would provide economies and efficiencies resulting in significant reductions in the costs associated with the delivery of educational programs, it has not happened in practice (Larsen & Vincent-Lancrin, 2005). Conversely, there are varied costs related to the development and delivery of high quality technology-facilitated courses. For instance, creating ICT-based courses is not merely repackaging existing materials. In practice, the delivery of ICT-based courses or materials requires an appropriate level of student to staff ratio, taking into consideration students' expectations of gaining accessibility to lecturers in their courses and programs. However, as more ICT-facilitated programs and courses are made available, and coupled with the sharing of course materials becoming prevalent and enhancement in ICT capabilities and reduction in costs of ICT-related resources, it could be possible to have access to high quality higher education at an affordable cost in the future. The importance of affordable higher education should not be overlooked (Forde, 2007).

### **Conclusions**

Education undoubtedly is the driving force for the economic and social development in any country (Mehta & Kalra, 2006). Thus, in facing the issues brought about by massification, diversification, internationalisation and marketisation of higher education in the region, it is necessary to find ways to innovatively integrate ICT in higher education, to ensure that good quality, accessible and affordable higher education is available to people in the developing countries (Hattangdi & Ghosh, 2008).

More and more higher education institutions are using ICT to develop course materials, deliver and share course content, lectures and presentations, facilitate communication among lecturers and students, encourage pedagogical innovation, increase cooperation and collaboration, conduct research, enhance professional development, and provide administrative and management services.

However, information on how ICT has been and can be used to enhance the design, the delivery and the management of higher education programs in the Southeast Asian region is not readily available. Furthermore, countries in Southeast Asia are at different

stages of development in the use of ICT in education (UNESCO Bangkok, n.d.). Countries in the region can be classified into three stages of ICT development. Some countries are already integrating the use of ICT in the higher education system (e.g., Singapore). Others are starting to apply and test various strategies (e.g., Brunei, Malaysia, the Philippines and Thailand). Lastly, there are countries which have just begun and are more concerned with ICT infrastructure and connectivity installation (e.g., Cambodia, Lau PDR, Myanmar, Vietnam, and Timor-Leste). Thus, success stories, experiences and lessons learnt from the use of ICT in higher education will be of immense importance for educators and administrators at the forefront of integrating ICT for higher education in countries in the region. Of particular importance will be research-based and practical experiences that describe the design, development and delivery of ICT based learning materials in university teaching and learning settings, including blended learning and e-learning; pedagogic innovation in using ICT towards enhancing higher education in terms of accessibility, effectiveness and efficiency; ICT and online approaches for professional development in higher education; and ICT projects in higher education to improve access and quality of learning.

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