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Online Learning and Information Technology in the Asia-Pacific Region: Perspectives, Issues, and Divides

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Special Issue
Guest Editors

Online learning has gained momentum in the Asia-Pacific region. The aim of this special issue is to provide the general reader with a range of papers contributed by academics from this region on

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perspectives and progress made in online learning and information technology (IT). The articles in this special issue include online learning and IT efforts, in the following order: South Korea, Hong Kong, China, Taiwan, Japan, Singapore, Australia, Guam (a territory of the USA), and New Zealand.

One immediate distinction that readers may observe is the mixed use of two terms: information technology (IT) and information and communications technology (ICT). This distinction reflects interesting influences in the development of the use of technology in education. The term 'IT' is widely used in the USA, whereas the term 'ICT' is more commonly adopted by the Commonwealth countries, in particular the United Kingdom. The inclusion of *Communications* within information technology is to denote the emphasis of communications and network technologies. Since the online learning milieu in this region have been influenced by both the USA and the Commonwealth countries, some articles in this issue adopt the term ICT, whereas others use IT. In this special issue, we make no particular distinction between the two. We kept the terms used by the various authors in their original text to preserve their "flavors."

The Articles

This special issue starts with an introduction to online learning in **South Korea**. South Korea has made tremendous progress in terms of online learning, particularly in adult education. The article also analyzes three specific applications: the development of single-mode virtual universities, online education in conventional universities, and Web-based corporate training. It concludes by providing the readers with some principles of online learning derived from experiences in implementing such environments.

In **Hong Kong**, the application of IT in education did not get started in a major way until late 1997. Despite this, its development has been very fast, particularly in terms of infrastructure, which was almost completed within three years. This article outlines how schools in Hong Kong have moved toward online learning and analyzes the difficulties these schools have experienced. The article also remarks that the future of IT in education or online learning is dependent on changing peoples' beliefs about teaching and learning toward more learner-centered epistemologies. Such a change in belief or epistemology is also highlighted by other authors in this special issue.

The article from **China** presents an overview of the online education efforts in China for both the higher and basic education sectors in recent years. Although China has yet to resolve many issues relating to online learning, its efforts thus far are commendable. Online learning has great potential in this vast nation. In addition, some ongoing national projects or plans are briefly introduced. In particular, a concern about the

digital divide (between those who have and those who do not) is raised. Other concerns include how online learning pedagogical methods could extend beyond the traditional 'information-giving' paradigm to more active and interactive learning environments.

The next article discusses how the Web is used and applied in online learning in **Taiwan**. Based on Taiwan's perspective, the article presents five different aspects of how Web-based online learning is facilitated, with detailed descriptions of some projects implemented over the last several years. A call for a localized approach (which integrates the traditional conception of education) in Taiwan is emphasized. This call is based on the argument supporting the traditional underpinnings of eastern culture and how it impacts on online learning. Thus, the mere adoption of pedagogies from the west may not be always feasible.

Next, we have an article from **Japan**. A brief review of the ICT and online learning efforts in Japanese schools is discussed. Research and development (R&D) projects in the area of learning technologies in Japan are also presented. The authors have envisaged an integrated approach, based on their extensive research in learning environments, for ICT at all levels of education. The online learning model discussed suggests ways of bridging the gap between R&D and actual educational practice for Japan's rapidly changing technological advancement. The balance between adopting new beliefs brought forth by technological advancements and traditional values upheld by the Japanese culture is also discussed.

The article from **Singapore** begins with a broader perspective of the IT MasterPlan in Education (over the last several years). This plan is now entering into its second phase, with an emphasis on *learning processes* in IT integration and online learning. The article also documents experiences through IT-enhanced instruction with specific case examples from local schools and the National Institute of Education (the sole teacher education institute in Singapore). Among different concerns, the tension between keeping past academic achievements and the uncertainty of newer approaches, such as online learning, in maintaining similar academic performances, is an issue of particular attention.

The article from **Australia** discusses pertinent issues relating to implementing online learning models in a higher education context. These issues include the changing roles of staff and students as they adopt new learning approaches; the notions of flexible learning and delivery; and the quality of education provided. The convergence of different cultural "genres" for online learning and on-campus learning is also discussed. The article may not represent the prevailing online situation in Australian universities, but it gives a sense of the orientations among Australian students.

The article from **Guam** depicts an account of the diffusion of online learning at the University of Guam. It begins with the introduction of the Internet at the University and the kinds of opportunities and promises such a medium provides. However, it reflects some of the realities and problems faced by the institution. The article recommends a shared vision through collaborative efforts with the need for faculty training (enculturation) and readiness. It also discusses the kinds of management support for the growth of IT culture, with issues related to budget and resources, and other mechanisms for a favorable technological online learning infusion.

The last article in this special issue, from **New Zealand**, reflects the online learning situation within the context of Massey University. The article points out some of the IT-based research developments and projects embarked upon by the University, and how online learning environments are gradually adopted by students and faculty. The article reflects the realities of online learning adoption and the strategies employed to encourage its use.

Discussion: The Diminishing and Emerging Divides

From the articles in this special issue, we observe the phenomenon of diminishing traditional divides due to IT and online environments, and new, emerging divides arising out of this phenomenon. These divides will be explained below. As an example, this phenomenon is similar to the paradox of postmodernism (plurality or multiplicity of views)—that its very ethos of 'no divide' creates a distinct divide between itself and any other schools or ideologies, such as modernism. In other words, postmodernism does not recognize that its position of multiple views of any phenomenon has by its very argument denied the more traditional view of modernism and its place in philosophy and ideology. We discuss our observations of some "online learning" divides as represented by the articles in this special issue.

The Learning Epistemological Divide

It seems from the articles in this issue that because of globalization (with attribution to the Internet), most regions unwittingly adopt similar theoretical underpinnings for their online learning initiatives. We term such a phenomenon a 'diminishing epistemological divide.' We suspect that these theoretical underpinnings are predominately influenced by the implicit notions of constructivism—although many online environments around the world are still adopting 'information pumping' methods (Tan & Hung, 2002). Constructivism and social constructivism seem most popular as the emerging theoretical underpinnings in the Asia-Pacific regions.

With such a trend relating to the diminishing epistemological divide, a predominant change in mindset towards knowledge construction is emphasized. Such a mindset change is also recognized in terms of technological diffusion difficulties. Therefore, problems encountered by the various countries are quite similar, regardless of cultures and languages. This phenomenon may facilitate cross-cultural collaboration because the fundamental beliefs about online learning are similar. In essence, we recognize that online learning would aid in bringing convergence to various cultures, both western and eastern.

On the other hand, we may be creating yet another legacy of learning that seems to be value-laden in terms of its benefits rather than its limitations. The divide between newer approaches (e.g., constructivism and active learning) and the traditional (e.g., didactic) is widening because of distinctive learning epistemologies. We would like to maintain that there is a place for differing paradigms of learning, including the cognitivist or even behaviorist approaches (see Hung & Chen, 2000). The article from Taiwan, for example, emphasizes that the Taiwanese people may need a different epistemology of learning as pervasive in online learning environments because its people are largely influenced by eastern ethnic values, which regard the didactic mode as most appropriate. The Japanese and Singaporean papers also outline difficulties with technological advancements in the area of education, since their systems have been deeply influenced by traditional models of learning and instruction.

The Access-Effectiveness Divide

The Internet breaks the barriers of time and space, making learning more flexible and accessible. Online learning is changing the landscape of how institutions provide learning and educational resources. Currently, people can sign up with virtual universities and institutions without physically going to a campus. Famous universities are becoming much more accessible to a world-wide audience. However, technology creates a so-called digital divide. The concern is that those who have access to technology may enjoy more advantages than those who do not. This concern is especially predominant in countries such as China, which is struggling to provide education to its people, who are dispersed in many remote areas. It often seems that online learning presumes that a technical infrastructure, such as networks, is already in place. However, we note that in many places, for example, in rural localities, Internet access is still an issue.

Our concern is whether the digital divide caused by online learning is really benefiting those who are *learning* from such environments. The issue springs from the effectiveness of online learning environments. In a sense, technology is presumed to be an advantage (or predominately not inhibiting to learning) in most articles in this special issue. A few articles mention problems (e.g., Hong Kong noting copyright issues, loss of human contact), but these problems are seemingly of peripheral concern to learning issues, and are assumed to be able to be overcome with thoughtful implementation and/or more elaborated research studies. This trend is probably of greater concern to policy-makers, educators, and researchers.

Online learning should be perceived as one of the ways of making learning more flexible (and accessible), while flexible learning should be perceived as one of the ways of making learning more effective (which may not necessarily always be the case). In other words, many online initiatives have not considered whether learning flexibility and accessibility have made learning more effective. It is usually connoted that online learning is 'better' than traditional forms of learning. Such a conception is to our mind too simplistic. Effective learning may not involve online learning, and flexible learning may also not involve networks and online means. In fact, effective learning may not necessarily be flexible! All forms of learning should be perceived in terms of degree of providing 'effectiveness' for learning. Online and flexible learning should be perceived as means, not ends! It is clear that technology does divide those who have from those who do not. However, it is uncertain whether the divide separates advantages from disadvantages as far as effectiveness of learning is concerned. In other words, are we really sure that those who have access to the technology will enjoy more advantages in terms of effective learning outcomes and processes?

The "Virtuality" Divide

With access to resources and instructional materials, there is an increasing demand for content and communication delivered at the individual learner's work-desk. In the past, training has been conducted in workplace contexts, such as training schools and centers—commonly referred to as formal training settings. Increasingly, the Web and the Internet are blurring the distinctions between "virtuality" and reality. Today's emphasis on 'on-the-job' training with available resources via the Internet is diminishing this virtuality divide (for example, see South Korea's proliferation of virtual universities). The decrease in formal training settings is congruent with the recent emphasis on authentic workplace learning because of the contextual nature of cognition (Brown, Collins, & Duguid, 1989; Brown & Duguid, 2000; Lave & Wenger, 1991). Coupled with the predominance of networked technology aiding in the access to information resources and people at work, it is no

longer easy to draw a clear line between 'virtuality' and reality in online settings.

One implication for this diminishing divide is our over-reliance on technologies in our teaching and learning (and even life, too). Another implication is that it is quite easy for trainees and trainers to put on a virtual personality that can be quite different from a person's reality. These implications can create a divide in terms of social relationships and other forms of behavioral and personality issues. These implications cause the emergence of a "second self" (Turkle, 1984) where technologies such as the computer (via examples such as video games) are creating psychological states influencing human behavior. Consequently, this may create a new divide in terms of social relationships.

The Language Divide

Language differences do not appear as barriers for most regions represented in this special issue. Countries using non-English as the national language do not mention language difficulties when participating, for example, in online discussions. This could be attributed to recent developments in multi-lingual computing and computer literacy initiatives. However, this trend could be a double-edged sword. The English-language dominance on the Web has created a divide between those who understand the language and those who do not. At the same time, it does provide a standardized platform for communication. This divide is now fast diminishing. Those who do not speak English can now access resources and online learning in their native languages. They are no longer disadvantaged in terms of learning a specific subject or domain of knowledge due to a lack of proficiency in the English language.

However, this diminishment of an "English language divide" is now replaced by a new divide. The loss of a "standard" language may inhibit cross-cultural collaboration. We are witnessing a diminishing divide between nations (globalization) where networked technologies are acting as the catalyst, yet other forms of technologies (such as language-based tools) may be inhibiting this growth. In addition, recent developments in language-interpreting systems may complicate the issue even further. Currently, there are intelligent Web pages which are able to detect the preferred language of the user and to present information in that particular language. These systems are still in their infancy (the accuracy of interpretation being still the main developmental bottleneck) and implications of these developments are still largely uncertain. Ideally, these interpreting systems would diminish the language divide. However, how much implicit faith can one put into a machine-translated document? Besides, the social acceptance is still a major concern, even though an ideal translation system can eventually be developed.

The Cultural Heritage Divide

Finally, related to the 'language divide,' online learning helps in breaking down traditional physical boundaries and thus creates a new online culture that is unique in its own right. While traditional cultures are being co-intermingled, we must necessarily be aware that societies may lose their uniqueness of cultural characteristics due to the pervasiveness of online network technologies. As implied in some of the articles in this issue, while 'walls are being broken down,' there remains value in preserving cultural heritages. Societies must have a balance between preserving age-long cultural heritages and being influenced by other, more dominant societies via the mass media and other forms of communication. Thus, on the one hand, cultural divides are gradually diminished due to *communications* technology; on the other hand, tensions arise within societies when new influences run tangent with age-long traditions. These are issues that have not yet explicitly arisen but will become pertinent as online learning matures.

Conclusion

To reiterate, due to the developments in online learning, three distinctive divides are fast diminishing: (1) between face-to-face and online learning in the traditional sense; (2) between formal and continuing (lifelong) education; and (3) between physical and social presences. These trends are evident in the articles in this special issue, where online learning is not applied purely as a distance-education mechanism. A blended approach between face-to-face and online learning is commonly advocated and discussed. Similarly, online learning originally seems to be more viable or inclined towards adult learners because the anywhere, anytime premise assumes a seemingly self-independent disposition towards learning based on the principle of demand driven-ness (Brown & Duguid, 2000) in authentic work and job situations. However, there are now many online interactive projects introducing learning to K–12 education (e.g., the Singapore article). Thus, the dichotomy between adult lifelong learning and K–12 education would also be fast diminishing. School-going children and students are accessing learning and information resources beyond the confines of school-curriculum requirements. Finally, the presence of a person is no longer just confined to the physical. At times the social (or virtual) presence can be felt to be more real when interactions across distances are intensified.

In short, the diminishing and emerging divides that we have outlined above have focused on some of the main issues discussed by the authors and by us (as Guest Editors) within this special issue. We hope that the concerns faced by researchers, managers, and educational technologists in online learning are also the concerns of the authors in this special issue.

Exciting developments are happening in terms of online learning in the Asia-Pacific region, and we hope that these articles, as contained in this special issue, will enable our readers to be kept abreast of the prospects.

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What Is Educational Technology?

As covered in *Educational Technology*, The Magazine for Managers of Change In Education, the term Educational Technology refers to the application of science-based knowledge to educational and instructional planning and to the solution of basic teaching-learning problems. Technology in this sense is applied science. It is concerned with education processes as well as hardware and software systems.

Thus, hardware configurations, which often are used to implement technology, are only the "tip of the iceberg." While some authors continue to look only at this one element of technology, *Educational Technology* probes deeply beneath the surface to offer our readers insight into today's most significant educational thought and practice.

When educational technology is covered in a sufficiently broad context, previously "impossible" educational problems become amenable to rational solution. Branches of science which previously had nothing to say to educators and trainers now are able to offer their ideas to us. A whole new order of educational practice becomes possible.

No other education or training periodical covers educational technology in this comprehensive manner.