Journal of Advances and Scholarly Researches in Allied Education
Vol. 12, Issue No. 2, January-2017, ISSN 2230-7540

Higher Education and ICT

Mr. Amit Kumar Singh*

Assistant Professor, Department of Physical Education, Government Degree College, Tilhar Shahjahanpur (U.P.)

Abstract – From the founding of the Olympic movement in the late 19th century at the height of the Industrial Revolution through the beginning of the Information Age in the 1970s, channels of media distribution evolved from primarily written tracts in publications to electronic broadcasting. The changes in the mode of information distribution and the underlying technology over time caused the message content being promulgated to similarly change. As there were comparatively few channels available for the distribution of content during this period, a relative few individuals served as "gatekeepers" on the flow of information. These gatekeepers, such as editors and producers, exercised extraordinary control over what information entered the public domain through a process that was largely autocratic. The Information Age has changed the paradigm of information dissemination, and in so doing, has democratized the process of sharing information. The participation of the public-at-large in the development and dissemination of information that shapes humanistic ideas has grown in scale to a size unprecedented in human history. Since the advent of the Internet, this human discourse has changed over time driven both by the application of new technologies together with the exponential growth in that portion of the population that has access to them. Perhaps the most significant development in this movement was the development of the World Wide Web (the web). As the web has moved from comparatively static Web 1.0 content through the development of Web 2.0 social media applications to the beginning of Web 3.0 practices, there have been significant changes in how humans use computer technology to interact with one another. Despite the positive changes that have been brought about by the development of these technologies, such as a democratization of the information sharing process, there are still negative aspects to social media applications. There will also be significant challenges ahead in the development of new communication technologies that must be overcome before the full promise of the Internet can be realized by all.

Key words: Olympic Movement, Social Media, Internet, Web, Technology, Humanistic Ideas

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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,*Hong and Songan* 1283 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 hypothesises 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 1286 *Australasian Journal of Educational Technology, 2011,* 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.

APPLICATIONS IN SPORT

On our way to Web 3.0, it is critical that we participate in this powerful medium and spread humanistic ideas and Olympic values across the world. The Internet has provided a vehicle that can educate and entertain us and can serve to make society more cohesive. However, despite the potential to elevate human discourse, challenges remain, such as the digital divide that prevents much of the worlds' population from accessing the

Internet, tightly controlled or restricted access by some governments, and technical obstacles that limit wireless connectivity. In any case, the evolution of the Internet has brought about an unprecedented democratization of media content and has created an environment in which all can participate and make a difference.

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Corresponding Author

Mr. Amit Kumar Singh*

Assistant Professor, Department of Physical Education, Government Degree College, Tilhar Shahjahanpur (U.P.)