

What does it mean and take to run online distance education courses?

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Abstract

Although the provision of online distance education courses through the World Wide Web has existed for about a decade, the proliferation of such courses seems to give the impression that online teaching has been around for decades. It also gives the erroneous impression that those who offer online courses have sufficient expert knowledge and skills for doing so. Due to this recent (r)evolution, many institutions, organisations and individuals may not realise the full implications of online education. Does online learning merely involve access to converted lecture notes which are passively used? What type and scope of interactivity does it engender? Do those who develop online courses have ideas about pedagogic and multimedia instructional design? Do they fully grasp the fact that developing and running courses online is a conceptual developmental process? How cost effective are online courses and how resource efficient are they? This paper itemises the salient aspects of online distance education courses with specific reference to cost, management, cultural and environmental issues for offshore distance education, effect on learning, and research. The paper concludes with a futuristic look at what the next few decades hold for "electronic" distance education and how Australia might position itself to address this dire need of global learners.

Introduction

Once upon a cybertime, life appeared much simpler without computers and globalisation. There were therefore no need for terms such as ‘windows’, ‘mouse’ and ‘platform’ to acquire new meaning nor new terms such as ‘gigabytes’, ‘hard disk’, ‘internet’, ‘world wide web’ ‘networking’ ‘uploading’, ‘downloading’ to worry about. We also did not have emerging terms such as ‘telepistemology’, ‘webagogy’, ‘webtionnaire’ or ‘online’ to engage our thoughts. Of particular global interest is the term ‘online’ that has now found a fertile ground within educational or instructional literature. The term ‘online’ could only have been associated very vaguely some decades ago to either being on a queue or to denote who is on the other side of a telephone conversation. The phenomenal development in computer and telecommunication technologies is exerting enormous impact on the ways in which instructional materials are created, stored, acquired, and delivered to potential end-users (Barker, 1999). As a result, it is now possible to deliver instruction through computer mediated communications in which learners anywhere in the world have access to information without any restriction to time, space and number of those accessing the materials. This is the advantage of what is basically referred to as being online.

However, what online learning or an online course or online instruction actually means has not been properly defined or understood by practitioners of e-learning. Different institutions or organisations provide their own different definitions of what being online means. The Report of a 1998-1999 University of Illinois Faculty Seminar defines “online instruction” as ‘teaching and learning mediated by a computer. Online instruction implies a connection to a computer system at a venue distinct from the learner’s personal computer; this venue can be across the world or across campus’ (University of Illinois, 1999). A review of related literature by Inglis (1999) revealed that the term ‘online learning’ could refer to either of two distinct approaches to learning via the Internet. It can either refer to a form of resource-based learning in which the resources are electronically delivered as defined by the Higher Education Council (1997) or it can refer to ‘virtual classroom’ learning, centred on the use of asynchronous and synchronous conferencing as explained by Harasim et. al (1995). He concluded that most courses that are offered online use a combination of both approaches although one approach generally predominate with the other playing a supporting role. Beyond the generic definition of what online learning or an online course means in relation to technology, it is difficult to find in the literature a comprehensive definition of what being online means educationally.

However, ask any institution of higher learning if they are online and the answer would immediately be in the affirmative. But when you probe further to what the answer means you get information ranging from just creating a website for the course, providing course information only, including a computer conferencing environment for a course or in very few cases you have all aspects of a course including instruction, resource and assessment done completely via the Internet. I would therefore define an online course as a course or unit of study in which some or all of its composite parts are presented wholly or partially to learners through a computer-mediated environment, especially the WWW. The components include course information and registration, course materials/text, supplementary reading, tutorial, conferencing or bulletin board, tutor-marked assignments, examinations, and evaluation of the course.

Why go online?

The reasons given in the literature to support the need for online learning can be grouped into two broad groups. The first group has to do with changes which modern technology has brought about. The second is educational. The reasons associated with technology as outlined by Barker (1999) are as follows:

- The availability of technology which makes the storage and sharing of information easier than ever.
- The easy access to interactive computer-based technologies, which facilitate the retrieval of information that has been stored electronically.
- The widespread availability of global communication networks to facilitate information sharing and distribution.
- The ease with which electronic information can be assimilated using modern technologies for information presentation and display, and
- The ease with which people can now communicate with each other using electronic means.

The educational reasons as summarised by Inglis (1999) and Oliver (1999) include improving the quality of students' learning experience, increasing access, cost-effectiveness and learning quality, and flexible learning and delivery of instruction. Additionally, it affords students and staff involved in the use of technology to prepare, and deliver instruction or learn to acquire other skills which have become a necessary part of education in contemporary times.

The bandwagon of 'going' online to deliver instruction at a distance is fast becoming a common place phenomenon all over the world. In the USA, of the 1,028 accredited two – and four-year institutions surveyed by Market Data Retrieval, 72% offered online courses in 1999,

compared with a mere 15% in 1998 (see Grimes, 2000). The forecast is that the number will reach 95% by the end of 2000. Similarly, a study conducted by Simon Fraser University and TeleEducation in Canada on technology-mediated learning showed that in 1998 there were a total of 6,504 online courses world wide with 76% of these originating from the USA and 3% was Australian-based. However, today one has almost lost count of the number of online courses which continue to surface over the Internet by the minute. I guess by now we should have more than ten times what was recorded in 1998 by the Canadian study. One major compelling reason for the clamour to go 'online' has to do with capturing a slice of the global market. The rush toward e-education has surpassed that for the goldmines of the early 19th century. This is no surprise considering the megadollars involved. The revenue from corporate e-learning market totalled about \$1 billion in 1999 and will reach \$11.4 billion by 2003 as suggested by International Data Corporation. The online market in higher education totals \$1.2 billion and is expected to grow to \$7 billion by 2003 according to Merrill Lynch. Needless to wonder why universities who traditionally had no inclination or likeness for distance education are teaming up with the corporate world for the global partitioning of the online learning market. For instance Stanford University has partnered with Unext Learning Systems, Deerfield, Ill., and UCLA with OnlineLearning.net, Los Angeles to develop online, nondegree-granting authority. The University of Pennsylvania has a similar alliance with Pensure, Inc., a Los Altos, California, e-learning company, to develop business-management education programmes for its online learning initiative called Wharton Direct. There are now many variants of these sorts of alliances that have variously resulted in virtual classrooms, wireless campuses, virtual and corporate universities, consortia and alliances. The emerging ones are the University of Phoenix Online, Universitas21, CyberU, and the infamous Western Governors University and California Virtual University which has since folded up.

Ordinarily, with thousands of online outfits coming on board, it should be the case of the more the merrier. However, this is not the case with contemporary developments. A number of unexpected developments has surfaced to cast some doubts on the integrity of many of those who have entered into the rat race of online education. First, the whole business of education (online education) now seemed to have been hijacked by the corporate world and those who least know anything about what education is all about, not to talk of having an idea about what pedagogy and epistemology mean. The university, traditionally regarded as a central focus of knowledge production in higher education, has undergone considerable transformation since its emergence centuries ago. The transformation, characterised by shift in focus,

recruitment and how knowledge is transmitted, now seems set to erode the main reason for the existence of universities. Noble (1997) believes that what we are now witnessing is the commoditization of the function of the university, transforming knowledge and courses into courseware and commercially viable proprietary products that could be owned, bought and sold in the global market. The phenomenal development in computer technology and telecommunications is the main force behind the current global reforms in higher education. One school of thought argues that this development is beneficial to the university because it will enable it reach new heights as the leading knowledge institution in an emerging Knowledge Society. Another, cautions that the university risks losing its traditional connotation and might be superseded, even by-passed, by more vigorous rivals some of which of course may adopt the title 'university' as a convenient 'brand name' (Scott, 2000). One may therefore conclude that globalisation could be the most fundamental challenge which the university will face in the first quarter of this new century.

Second, most of the online education merchants seem to think that the use of modern communications technology is all that it takes to have an effective online course. Barker (1999) has argued very aptly that the mere availability of electronic materials alone is not a sufficient condition for electronic course delivery and or successful learning. Third, many of the online courses neither have quality nor the depth of content. The use of untrained or non-existent staff to develop these emergency online courses will only guarantee students with a 'degraded, shadow cybereducation'. Fourth, they also tend to give the erroneous impression that to get a degree online all you need to do is to enrol in an online course, no more no less. Technology is often used as an excellent disguise for a deliberate disregard for pedagogical and economic costs and other concerns of the learner. This seems to be the age of the commercialisation of higher education. This might unfortunately give rise to the so-called digital diploma mills as mentioned by Noble (1997). We may be witnessing the rise of cybercounterfeit education, the growth of which knows no limit as long as the Internet continues to be anybody's platform for marketing anything, anyhow, anytime and to anyone.

The unmet outcomes of online education

Although it is widely recognised that the use of new and emerging technologies in open and distance learning has some undisputed advantages (such as flexibility and access) when compared with traditional or conventional approaches, the literature as reviewed by Oliver (1999) suggests that many of the goals are often unmet. He points out that a major failure is in

the inability of online learning environments to create enhanced learning processes and learning outcomes. Another failure is that many of the courses being delivered online lack any threads of objective instructional design structure that would support meaningful learning. Attendant to this is the unacceptable perception on the part of many online course developers that online course materials are mirror image electronic versions of the conventional print-based ones. This, as found by Dehoney and Reeves (1998) in their evaluation of online learning environments are seen as serious factors which affect successful learning (Kearsley, 1998). While Collis (1997) recommends the use of what she called 'pedagogical re-engineering' to redesign online materials for the purpose of taking intentional advantage of the new technologies, others recommend using a suitable organisational structure and appropriate pedagogic support (Freeman et al, 1998).

Two aspects of online material development

There are two major aspects of online material development which are worth considering in order to expose what it really takes to be online. They are the design of the technology support and the design of the learning materials.

The design of the technology support is not as controversial as that of the materials. It involves two main steps. First, it involves the choice of the authoring software to use in the development of the online environment? It has become very difficult if not impossible to keep count of authoring tools for web-based online delivery. At the beginning of year 2000, more than 40 were identified during a study on 'the design, development and delivery of Internet based training and education' by the Centre for Learning Technologies at the Mount Allison University, New Brunswick, Canada. These include First Class, Docent, Authorware, CourseInfo, LearnLinc, Quest, Question Mark, Saba, Toolbook, TLM, VCampus, Virtual-U, and Web CT. They are generally divided into two main groups of self-paced and group learning products. Anyone developing web-based materials must assess the appropriateness of the software for the clientele to be served. Once a selection is made, the next step is putting the materials together and uploading to the Internet. A typical path for this is as shown in Figure 1 below. This is the model that is used at the Open University of Hong Kong.

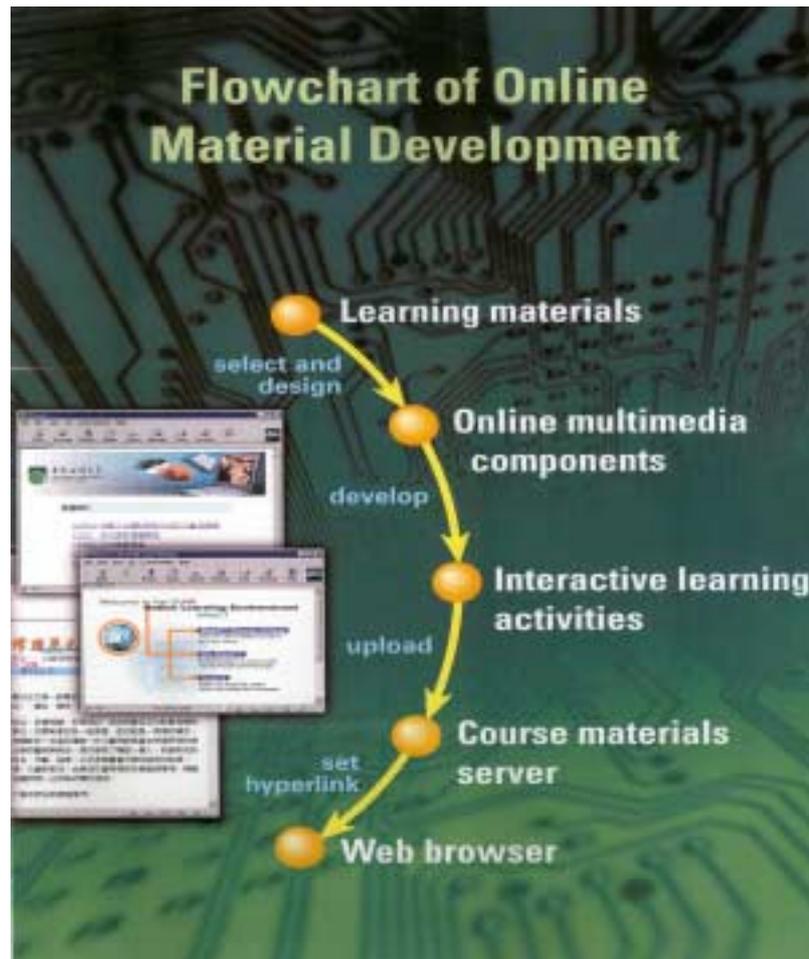


Figure 1: A generic model for material development for online courses

With regards to the design of the learning environment, the pointer is leaning heavily towards the use of constructivist-based philosophy and pedagogy as discussed by Jonassen (1991, 1999). Lebow (1993) has provided nine design principles to guide the development of materials for use within technology-based environment. These include:

- the provision of experience of the knowledge construction process;
- the provision of experience in and appreciation of multiple perspectives;
- the creation of learning tasks that are related and authentic;
- the encouragement of ownership and voice in the learning process;
- learning embedded in social experience;
- the encouragement of the development of multiple modes of representation; and
- the encouragement of self-awareness of the knowledge construction process.

There is a debate currently going on regarding the usefulness of traditional classroom teaching in online delivery of instruction. What the debate is all about is whether good teaching in the face-to-face mode translate to good teaching online. One group appears to support the notion that good teaching is good teaching no matter the environment. For instance the American

Distance Education Consortium's ADEC Guiding Principles for Distance Teaching and Learning assumes that 'the principles that lend themselves to quality face-to-face learning environments are often similar to those found in web-based environments' (ADEC, 1999). Similarly, the American Association for Higher Education has made minor revisions to its seven principles of good teaching in undergraduate education for online teaching (Chickering and Ehrman, 1998). Furthermore, to buttress the view of this school of thought, others as reported by Goettling (1999) seem to think that the best approach to online teaching is to simulate the traditional face-to-face mode. Nothing can be farther from the philosophy of online pedagogy than this view. Support for this can be found from Feenberg's (1998) assertion that the teaching paradigm should change for online instruction, away from the traditional face-to-face lecture mode.

Some other group as typified by Harasim et al (1995) seem to cautiously disagree when they said that the change from traditional classroom to online instruction is analogous to a change from a model of efficiency to a model of quality. This school of thought argues that given the myriad of other variables to consider in online learning such as collaborative learning, and web navigation, it is equally untenable to accept that teaching 'offline' is about the same as teaching online just as has been said for course materials.

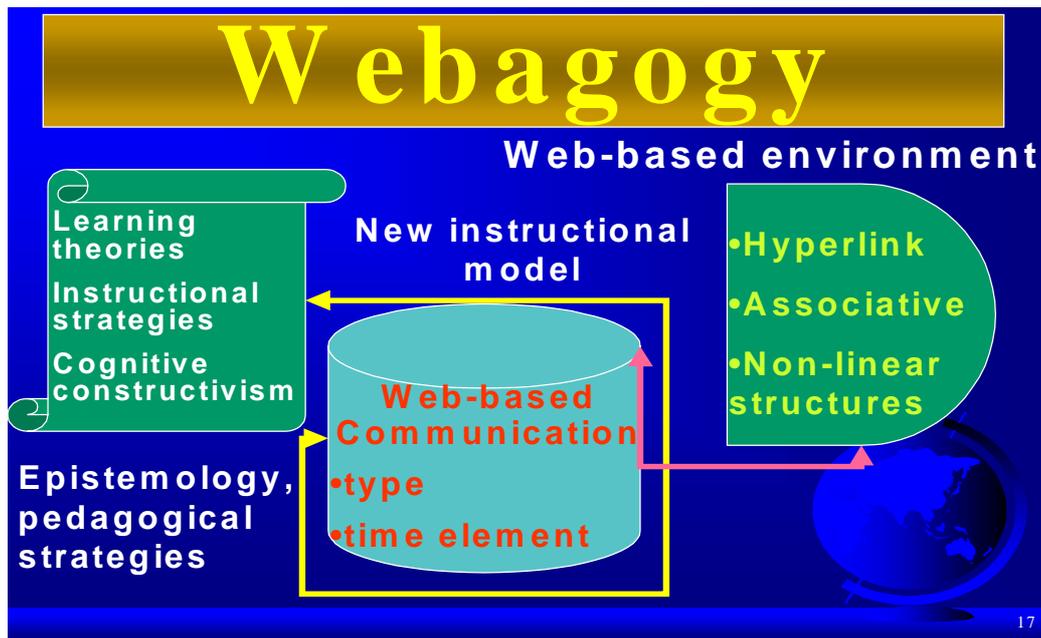
A model for web pedagogy

The limited research literature on Internet-based education has indicated that a "student-centered learning environment", "full of multimedia resources", "expanded interactivity", and "adaptability to different student characteristics" are distinctive features of Internet-based education, most of which reflect integration of technological features of the Web into instruction (Jung, 2000). However, even though many are developing materials for online learning, hardly is there a philosophical and pedagogical model to guide the process. Bork and Britton (1998) have accused those developing courses on the Web of often being confused about the difference between delivering information and facilitating learning. One possible reason for this confusion may well be the continuing use of traditional pedagogical principles of lectures and textbooks, which basically deliver information. While this may be appropriate for many e-commerce oriented Web-based advertisements, it is definitely not satisfactory for Web-based instruction. Effective Web-based instruction must integrate three crucial elements - epistemology, pedagogical strategies suitable for the Web, and the characteristics of a Web-based teaching and learning environment - to create a new

instructional model. Perhaps what we now need, more than anything else as we integrate

Figure 2: A theoretical framework for webagogy

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technology, especially the Web, into open and distance teaching and learning is what I have chosen to call *Webagogy*.

Webagogy should aim to harness all the viable theories and ideas about information processing, knowledge representation and symbolic reasoning, cognitive constructivism, and the use of associative, hyperlinking, and non-linear features of the Web environment to create a learning environment which supports the learning needs of all students. Our new crop of webagogues should not only find ways and means of applying prescriptive theories and strategies to transmit knowledge (Miller and Miller, 1999), but should also view knowledge as consensus which accommodates multiple perspectives. Miller and Miller (1999) suggest that Web-based communication (instructor-learner, learner-content and learner-learner communication, and time element of synchronous vs. asynchronous) must form the bridge between learning theories and strategies and hyperlinkages. Webagogy entails the training of a new cohort of multimedia instructional designers who specialise in Web-based technology for non-traditional instruction and learning modes.

Factors to consider when running courses online

In planning and running online courses, several factors must be taken into consideration. Time does not permit the discussion of all the factors involved, therefore I will deal with only a handful of them to demonstrate how vital it is to consider in a detailed and comprehensive manner the cost both in terms of capital, human and other resources in running courses online.

Pedagogical issues

These are at the centre of all the considerations for putting courses online. I have discussed webagogy earlier as a viable model to use in teaching and offering courses online. What learning experiences are being integrated within the content and how do they add value to what the students would ordinarily have learnt either face-to-face or by reading the print-based instructional materials? The web as has been mentioned is generally a passive medium. Attempts should therefore be made to make interactivity, collaborative learning and metacognitive learning as essential part of the courses. In this regard, technology should only be used as a communication tool rather than the message itself. The Internet is a social environment which should seek to emphasise the way we socialise instead of the way we use computers. It has been suggested that instead of being technocentric, we should be anthropocentric in our use of the Web (December, 1995). The warning is there is a danger that the trend is towards computerising socialisation rather than socialising computing.

Choice of software and range of modes

A decision about what software to use for the institution's online course delivery is important right from the onset. What many have found useful is to select a robust but affordable software versatile enough to cope with all sorts of materials. Such software is used on an institution-wide basis in order to present a common institutional platform, which makes teaching and learning on the web easy for staff and students. A major consideration in the choice of software and its use in developing the materials is the ease of web navigation. Web-based courses allow more cross-referencing than often done in textual materials. However, including multiple linked pages and copious URLs for students to view are often distractive and terribly annoying. As defined earlier, online has got so many aspects. The range of mode

included in a particular course will depend on several factors and characteristics of the course, and the students. Decision will need to be taken by the course team if the course will be wholly online or as a supplement, or for accessing resources online or to contain just the course text, or used for assignment and examinations only. These are important decisions that will have some bearing on the meaningful learning of the course by students.

Student support

Learning online is a new and different experience especially for students who are used to learning on a face-to-face basis and through textbooks. Distance education has always attempted to mitigate the feeling of isolation among learners. This isolation would become even more pronounced through the use of online courses in which the need for interaction with other learners may not be a prescribed aspect of a course. Hara and Kling (2000) have reported that many students experience distress with web-based courses and they especially fingered isolation, anxiety, confusion and panic as contributory to their distress. Does your online course take students through how to use the software and how to surf through the Internet to locate other materials? Does your institution have an electronic library and if so, have students been provided with a personal tutoring regarding how to access and use the library? What facilities are available for students' counselling, and are they provided with very detailed comments in their tutor marked assignments (TMAs) which must have a very short turn-around time? Do the materials developed take into consideration the linguistic ability and cultural environments of the students, especially if they are offshore students.

Cost

Any institution of higher learning embarking on online course development and distribution needs to carefully count the cost in many ways. The delivery of online courses is an expensive venture which demands 'extraordinary investment in technology infrastructure – hardware and software, technical support connectivity and networking and maintenance cost'. For students who do not have access to computers at work or at home, they may need to buy theirs as an added cost to the course they are already paying for from their meagre salaries or allowances. Perhaps the university might consider providing free Internet access to all students including through an ISP as a way to attract them to the course.

Staff training and development

One of the least addressed needs in online delivery of courses is the issue of staff training and development. Often universities think that once they have put in place the policy on migrating to the web environment for the delivery of courses, other things including the preparation of the academic and other staff members will invariably take care of themselves. A workforce not trained in the use of technology in delivering instruction will attempt at all cost to avoid or stall the development. Issues such as commercial, pedagogical and ethical implications of online delivery of courses must be systematically brought to the attention of the staff additional to full training and continuous development in the new technology. Needless to mention that because staff will have to do more work such as online tutoring, marking assignments electronically, and responding to messages via email or electronic conferencing, more time will be invested by staff which need to be duly compensated for. Issues of intellectual property and copyright should be taken more seriously than ever before due to the characteristics which the use of the Internet imposes on them.

The future of e-learning/online courses

Due to the rapid development and impact of technology on online distance learning, it is difficult to hazard a guess as to how the future will shape online education and *vice versa*. But some things are quite clear. Globalization has come to stay requiring everyone to see the global village as jointly owned and explored for the benefit of all those who live in it. Many more people will clamour for learning for a variety of reasons especially as lifelong learning takes firm roots globally. Many more still will have access to and become proficient with the use of new technologies as learning media. The trend is that of increasing need for good quality courses on the Internet no matter where they are from.

Given the above projections, how might Australian institutions of higher learning position themselves to address this dire need of global learners? Australia has built up an enviable history of distance education beginning from 1910 when universities began to offer courses at a distance to their students in rural and remote areas.

As mentioned by Evans (2000) Australia's long history of experience of distance education shaped by its history, geography and demography, is an important legacy upon which to build

the provision of distance education for offshore, in-country courses. The success of Australian higher education sector in providing offshore distance education is borne by the increasing number of students in many countries who choose to study from them. There is hardly any country in Asia without an Australian offshore distance education. In Hong Kong where there are over 560 offshore distance education courses from all over the world competing for students, Australia has overtaken the UK as the country with the largest number of courses. Furthermore, the quality of Australian offshore courses offered in Hong Kong is second to none. This however does not mean we should rest on our oars. Much more can still be done to stretch the standard of quality beyond current limit. From my point of view, Australian institutions willing to continue or join the offshore distance education venture should take note of a number of issues which, for purposes of this presentation, I would group under three major areas of new and emerging information and communication technologies, efficient and appropriate student support, and collaboration.

New and emerging information and communication technologies

The availability of new and emerging information and communication technologies has tremendously changed the offshore distance education game. Indeed, some now think that the term distance education in the age of modern technology is a misnomer. Technology is making the competitive challenges in offshore distance education more fierce and institutions not geared up to take appropriate steps to tap into niche markets will not make it in the 21st century. Clearly, the use of the WWW will continue to dominate. However, learners will become more discerning and choices of courses to take online will be determined more by the quality of the courses rather how much the technology is dazzling or seductive. Long after the novelty of studying through technology had disappeared, people will begin to sift the chaff from the wheat. This is where the use of tested and accepted instructional design principles will emerge as the winning card. Australian distance education has established the use of instructional design far beyond what other countries have done. We need to capitalise on this and perhaps move into the use of instructional multimedia design for developing courses to be offered offshore. Australia needs to continue with the tradition of allowing the high quality in-country distance education practices to influence its offshore distance education provision.

Efficient and effective student support

Modern day distance education attempts to expanding access to education and capitalise on emerging market opportunities. In addition, the expansion globally is now catering for a variety of learners far greater than what it was a few years ago. These groups of learners include life fulfilment learners, corporate learners, professional enhancement learners, and degree completion adult learners. The latter has been the major area of concentration in offshore education. Perhaps the time has come when institutions should begin to focus on all of these and many more for obvious reasons. In doing so however, we must be mindful of learners' needs, rely on technology to provide the most flexible offshore learning materials, and must aim to provide offshore learners with essentially the same learner and institutional support services which are available to home students. With the increasing need for credit transfers world wide, Australian institutions could consider automatic articulation of offshore distance education courses with what obtains internally for any overseas students who might choose to continue studying on campus with any Australian institution. The development of study materials for offshore learners must be tailored to their cultural, social and learning environment styles. So is the assessment and assignment aspect of distance education courses.

Collaboration

There are two parts to this. First is collaboration amongst Australian higher institutions in delivering offshore distance education. Terry Evans has mentioned some aspects of this in his paper. I need to emphasise that with the emergence of new educational technologies and the entrenchment of globalization, it should be clear to us that the age of competing amongst ourselves is fast gone. The watchword should be collaboration. Australian universities can collaborate in very many ways which might include greater efficiency and inter-institutional collaboration for material development, credit transfers, use of a common offshore outlet taking care to choose only those who have established international profiles and experience. I guess IDP should be one of the top considerations for this. The second aspect of collaboration concerns the choice of global partners as agents and marketers. All the efforts of a university to break into the offshore distance education arena can, in spite of the quality of its programmes or public relations, be ruined beyond repair if the choice of suitable and appropriate partners with established track records is not given the consideration it deserved.

Will there be merit in negotiating favourable conditions for offshore students, which might include being able to audit similar courses offered by the overseas agents, if available? Developing, nurturing and sustaining reputable international or global partnerships in offshore distance education should be the focus for the years to come.

Conclusion

There is a (r)evolution going on at the moment globally in distance education, the use of emerging information and communication technologies and the delivery of instruction offshore in order to expand access and capture market opportunities. The demand for higher distance education as a global commodity will continue to be on the increase while the quality being demanded will surpass what we currently have. Only those well positioned to take advantage of these developments will survive. One route to survival is offering online distance education. However, online learning is not merely converting passive lecture to be delivered or transmitted electronically. Online courses developed using pedagogic and multimedia instructional design principles must provide a variety and extensive scope for interactivity. Institutions must recognise that developing and running courses online is a conceptual developmental process, which must be cost effective and mindful of the social, cultural and learning environments of the offshore learner. Australian institutions willing to continue or join the offshore distance education venture must address the important issues of new and emerging information and communication technologies, efficient and appropriate student support, and collaboration. The bad news is that the global competition in offshore distance education will continue to be fierce. But the good news is that capitalising and building upon Australia's track record of quality distance education should see institutions willing to adapt to contemporary changes in the higher distance education market laughing to the bank, or wherever they wish.

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