

As the importance of life-long learning grows, not only are more people desiring to study beyond basic formal education, but education providers also have to provide high quality courses that are made as accessible as possible. This issue of *CDTL Brief* examines some of the issues surrounding **Continuing Education/Distance Learning**.

Distance and Distributed Learning in Continuing Education: Notes from the Front Lines

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Many of the principles for using technology to enhance education have been well covered elsewhere, including in *CDTL Brief**. I would therefore like to focus my discussion on some of the factors that make the Continuing Education audience somewhat unique. The following are some general principles that I believe are generally true about Adult Learners:

Adults are Action-oriented

You can easily tell a youngster to study Grade 3 math so he or she can progress to Grade 4. For adults, particularly voluntary learners, it is vital that they see the purpose of their learning, and its applicability to their own work and/or personal lives. So for example in our Master of Continuing Education programme (<http://www.ucalgary.ca/cted/mce>), we structure all the assignments, and particularly the final project, to relate directly to issues in the student's own workplace. This not only makes the learning deeper, it also helps the student to justify the support (e.g. in time off, tuition subsidy) that they often receive from an employer while enrolled in the programme.

Adults Want to Have Their Experience Valued

With our typical learners falling into the 30–50 age bracket, there is every reason to believe that they have important real world experiences that can fruitfully be brought to bear in the learning situation. Again, in our MCE programme, we encourage students to answer most discussion questions (which are posed online) not from a theoretical viewpoint, but from the concrete experience of their own careers.

Adults Want to Be Respected

While no institution of higher learning would admit to consciously mistreating its undergraduate or graduate students, it is certainly common practice to take them for granted. After all, the student needs to take course so-and-so to get a degree, so they probably do not have any choice. By contrast, the Continuing Education world is one of almost infinite choice. In our own city, there are easily fifty places that will teach you how to use Microsoft Word and Excel. How does the learner choose? Partly on price, partly on reputation. But in the long term, it is the satisfying learning experience that brings people back again and again to take Continuing Education courses from the same provider.

Adults are Time-starved

While everyone is feeling the pressure of too much

* C.M Wang & K.K Ang. 'Any Time, Any Place Learning: Redefining the Classroom for EG1104'. *CDTL Brief*, Vol. 4, No. 3, August 2001. pp. 3–4.

to do, at least full-time students are supposed to devote most of their energies to learning. For the Continuing Education learner, a professional or personal development course is often 'one more thing' to fit in to a busy work and family life. I believe this accounts for the attractiveness of 'fast track' programmes such as the one we offer in Object Oriented Software Technology (<http://www.oost.ca>). Students entering that programme want to learn the maximum amount in the minimum time. At present, we only deliver this programme in a face-to-face environment. If we can find a way to preserve the high quality of learning, which is our paramount goal, we would certainly take this to a distance/distributed format to further meet the needs of adult learners.

Adults Like to Learn in a Collaborative Environment

There are very definite social aspects to Continuing Education. Adults generally enjoy meeting others with similar interests, and sharing their expertise. Even in a technology-mediated environment, we have found significant social bonding occurs among adult learners. One way to enhance this, as we have demonstrated in our MCE programme, is to begin the programme with a face-to-face session then follow up in an electronic environment. This format combines the advantages of 'high touch' with the accessibility and convenience of online education.

Adults Vote with Their Time and Money

As a Continuing Education provider, we are certainly not the lowest priced vendor in Calgary. However, we attract well over 20,000 students per year because they have an assurance that their time will be well spent. In fact our marketing theme for this year is, "It's Your Time...Invest it Wisely." (See <http://www.ucalgary.ca/cted> for details.) This has great appeal to learners who, as noted above, are on a limited time budget. Other Continuing Education providers have also had great success with 'fast track' and 'the least you need to know' courses that parallel the wildly successful *For Dummies* book series.

Implications of Introducing Technology into the Process

A decade ago, it was all pretty simple. Aside from a few bold experiments, Continuing Education meant you went somewhere (e.g. a university, a public school, a hotel room) for a face-to-face lecture from an expert. Now there are whole new ways to teach and learn, and the University of Calgary is proud to

be at the forefront of using many of them. (For some recent success stories, see <http://www.cted.ucalgary.ca/elearn/success.html>.) One thing we have learned is that adults need reliable, consistent technological tools. Anything that involves complicated installation, or even downloading, is likely to cause problems for some learners. To cope with this, we usually provide relevant software tools on CD-ROM to our learners.

One of our favourite technologies for distance and distributed (because some of our learners are really not very distant) Continuing Education is Centra Symposium (<http://www.centra.com>) which "allows instructors to engage students in a live virtual classroom atmosphere where collaborative learning is experienced in a rich audio-graphic environment through the home or office PC." (See <http://www.cted.ucalgary.ca/pdf/Environmental.pdf>.) In other words, teachers and learners can talk with each other and share objects such as PowerPoint presentations and spreadsheets in a low-bandwidth, Internet-based environment. We have found full-motion video is not usually necessary for the type of courses we want to teach, and staying with the audio-graphic solution opens the course to many people who do not have fast computers or high-speed Internet connections. Another advantage of Centra Symposium is that we can record each class and provide it to students, in a compressed format, on a CD-ROM. This makes 'missing a class' a thing of the past.

What the Future May Hold

Our province (Alberta) has made a commitment to bring high-speed Internet access to every community by 2003. This will enable more media-rich communication, and we are certainly exploring the possibilities. Wireless networks and handheld devices are also becoming common, and they will almost certainly play a role as the e-Learning delivery vehicles of the future. On a broader front, we are looking at whole new collaborative learning models such as the adventurous one pioneered by the exciting but short-lived question exchange website (see the news story in <http://content.techweb.com/wire/finance/story/INV19991101S0001>).

One thing is certain, e-Learning will be a strong contender in the Continuing Education market for the foreseeable future, and the technology is only going to get better and more user friendly. Our challenge will be to apply it intelligently to meet the unique needs of Adult Learners. ■

Continuing Education through the Online Graduate Programme at the University of Calgary

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The need for learning experiences while remaining at the workplace is a goal of many continuing education services in Canada. The Faculty of Continuing Education at the University of Calgary, Alberta, Canada, is no exception. It has traditionally offered courses to provide knowledge, skills and/or attitudes to adults in their workplaces. Increasingly, learners are also encouraged to develop a 'ladder' between certificates and diplomas earned through continuing education that enable adults to apply for advance standing into regular post-secondary undergraduate admission at the University. These types of continuing education innovations are seen to benefit the learner, the workplace, the university and the community.

These leading edge innovations also extend into graduate education at the University of Calgary. Commencing in 1985, the Master's of Continuing Education (MCE) graduate programme was developed under the auspices of the Faculty of Graduate Studies for delivery by the Faculty of Continuing Education. The programme has a specific focus on the workplace and requires applicants to have a minimum of five years work experience in a workplace environment. Typically, the enrolment each year is limited to two cohorts of 24 adult learners. Because 75% of the graduate programme is delivered online, learners have the flexibility and opportunity to study within an educationally-structured environment while balancing other life responsibilities. The programme provides specialisations in Workplace Learning, Leadership and Development with a third focus currently under consideration.

The programme is based on a curriculum development model which includes completion of First- and Second-year Institutes at the University

of Calgary worth four credits with nine course credits completed through online education courses accessed by learners from home or office environments. This blended delivery approach necessitates learners and instructors who are comfortable in working within classroom and virtual environments. While most students completed previous schooling in the classroom, many are inexperienced online learners. The programme utilises FirstClass software with a dedicated server accessed at the University of Calgary, and all adult learners are required to install FirstClass software in expectation of the first online course in the Fall. Students receive a brief orientation to FirstClass at the First-year Institute, and a basic description of computer-mediated communication (CMC).

Research Opportunities

Each learner is required to complete a research study for graduation. Many of the research projects are work-based but the online environment is providing increasing research opportunities in the MCE-CMC environment. A twist to this model is to provide research opportunities at the outset of the programme to enable learners to learn about research before embarking on their own projects late in the programme. For example, the transition period can be difficult for learners who have completed the First-year Institute and arrive at home lacking in-depth knowledge or practice of the software they must access, install and utilise for their online courses. To address this issue, an MCE Learner Research Group was formed, and a study was initiated with the support and guidance of this author. Through the completion of a pre- and post-survey tools and selected learner interviews, a series of 'learner snapshots' is currently under development to indicate where, when and how

learners are experiencing difficulties and what recommendations can be made to prevent this in future.

These research opportunities are self-directed motivators for learners. They provide first-year learners with an opportunity to work together as they learn more about a problem, its causes and ways to remedy through an active research process. It is an extremely rich learning environment for learners to have an idea, to work together as a group, to experience a mentoring relationship with a faculty member in the programme, through to writing and completing a paper for a conference and/or publication—all while continuing to work. This is but one example of why graduate continuing education programmes are so powerful for adult learners.

The Role of Facilitation in Continuing Education Graduate Programmes

Learners are anxious to explore the principles of adult learning, research and new knowledge in the context of identifying challenges, dilemmas and uncertainties in their workplace environments. Unlike traditional graduate programmes, learners in an online programme come with a sense of questioning, a desire for answers with a healthy dose of sceptical persuasion. Through inquiry, reflection and new and revisited knowledge, learners become open to alternative perspectives leading to new insights and learning. Communication dilemmas, discussion styles, and differing insights evolve and online disagreements or conflict may arise on occasion. Online conflict comes in many forms including, but not limited to, long silences from one or more learners, cryptic learner remarks, questioning, limited involvement with others, subtle communication cues, to name but a few examples. Using discussion, tactful questioning, open responses, debating, scenario-building, case-analysis methods, reflection with a healthy sense of humour, the facilitator is able to model their unique communication styles to students. Often, learners are quite surprised to see there are ways of addressing these challenges in ways that will convey the message but maintain a friendly, respectful and trusting approach. These types of communication processes can be lifelines for learners as they become empowered to develop their own comfort level and online voice.

The role of the instructor in the online CMC system is complex. The instructor has a facilitation role that is highly dependent on the ability to introduce, guide, mediate, group facilitate, problem solve, build consensus among the group, attain resolution and develop closure to discussions. Oft times these tasks are convoluted and ‘messy’ especially at the beginning of a term. Resources such as Salmon (2000) and Pratt and Palloff (1999) can be extremely helpful in understanding the role of facilitation and e-moderating in any online graduate programme. The author’s personal experience in teaching three separate online graduate programmes in Canada suggests that the perspective, demeanour, openness and invitation to join with a community of learners is as valuable to the learners as the value and knowledge of any discipline.

Summary

The lessons learned from online learning in this programme include the shifting of roles of the learner and faculty in the online environment; the focus on the transition that learners express as they proceed from novice to experienced online learners; the way in which they view themselves as online learners and hence as practitioners in the workplace; and, the deep learning processes that can occur for graduate students within the online, graduate continuing education environment. Further information on the MCE Programme is available at the University of Calgary website at: <http://www.ucalgary.ca/cted/mce>.

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Life-long Learning: What Does It Mean for Us?

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Introduction

With the emergence of the so-called knowledge-based economy and 'learning society' (Dunne, 1999), the term 'life-long learning' is now rivalling 'thinking' and 'quality' as educational buzzwords. But what does life-long learning really entail and what are the implications for us as teaching professionals? In this short paper, I will first make explicit the concept of life-long learning. Second, I will outline three significant *change areas* that are inevitably linked to the promotion of life-long learning and offer my reflections on possible developments. Finally, I will caution that the reality of many life-long learning initiatives may not reflect the idealism desired by many proponents.

Getting to Grips with the Concept of Life-long Learning

There is nothing particularly original about life-long learning as an educational aim. Whether we intend it or not, we also cannot get away from the fact that we will continue to learn during the course of our lives. Learning is an inevitable aspect of the human condition and its response to change. The nature, rate and form of such learning is variable and open to qualitative valuations of worth.

However, recent conceptions of life-long learning transcend such 'naturalistic' learning, seeing it more in terms of a systematic and value-driven process necessitated by the demands of modern society. For example, Smith and Spurling (1999:43) define life-long learning in terms of:

...people learning consistently through life. The ascent is on *continuity, intention* and *unfolding strategy* in personal learning. Besides these are the four principles of *personal commitment, social commitment, respect for others' learning* and *respect for the truth*.

The value-driven nature of life-long learning is starkly captured by Longworth and Davies (1996:9) when they argue that:

Human beings and organizations on this planet have three major choices.

- They can choose the path of hopelessness or complacency, believing that they have no influence or nothing to contribute, or that there is nothing to change.
- They can take the path of fundamentalism, paranoid nationalism or xenophobia and help create intolerance, hatred, war, homelessness and disorder.
- Or they can invest in the road to lifelong learning and take control over their own destiny, combining the skills of learning with the power of knowledge and the joy of being human and alive.

It can be seen, then, that life-long learning is a multi-faceted concept. At the level of the individual, the focus is on embracing planned learning as a life-long adventure and developing the appropriate skills and dispositions to facilitate this process. At the societal and global level, it implies major systemic changes in culture, social organisation and relationships.

Change Areas

1. A curriculum shift towards real-world learning, underpinned by core generic competencies and dispositions

A curriculum model that largely promotes the rote memorisation of subject knowledge content is now clearly analogous to an educational Jurassic Park. The recognition that meaningful learning is best attained when the emphasis is on real-world activity underpinned by good thinking is now firmly established, even in the field of neuroscience. As Jensen (1997:99) points out: "The more we make school learning like real life, the more the brain, with its rich capabilities, will sort it out."

In this context, I suggest the follow core competencies and dispositions as fundamental in the development of a life-long learning culture:

- Competence in all essential communication skills (reading, writing, speaking and listening)
- Competence in basic numeracy and computation
- Competence in using different types of thinking in a systematic manner (e.g. ability to generate possibilities, analyse systems, evaluate options and monitor and review one's own thinking)
- Competence in the use of IT (information technology) applications
- Competence in handling information efficiently
- Competence in self-management
- Disposition to persevere under pressure
- Disposition to be open minded and honestly critical

2. The pedagogically sound use of IT to provide variety, access and flexibility to the learning process

IT will bring variety, access and flexibility to learning as well as revolutionise present learning arrangements and timetabling structures. However, IT will not necessarily develop the kinds of thinking essential to the learning demands of modern society. As Melchior (1997:91) points out: "One pervasive myth is that the technologies themselves teach important complex skills...They need to be identified, taught, modeled, and reinforced by capable teachers."

Furthermore, in terms of providing opportunities for the development of important dispositions to support life-long learning, we have no reason to see these as naturally emerging from recent developments in IT. On the one hand, it can be argued that new technologies provide rich and stimulating learning opportunities, which will increase the motivation and will to learn. On the other hand, it can be equally argued that such technologies, in trying to make learning fun and entertaining, undermine persistence and the ability to do the mundane and tedious. Unfortunately, the ability to do the mundane and tedious, when necessary, is an important ingredient in being a successful life-long learner.

3. Active, collaborative and diverse models of instruction

We have certainly moved a long way towards understanding the nature of learning and the

various ways in which different forms of instruction can contribute to the learning process. As Marzano (1992:2) highlights: "Over the past 3 decades, we have amassed enough research and theory about learning to derive a truly learning based model of instruction."

It is now clearly established that learning is most effective when enacted in an active and collaborative context and where that learning is perceived as meaningful, challenging and of practical value to learners. Given the integration of pedagogy and information technologies and the increasing desire of learners for flexibility and access, the teaching-learning situation becomes one of myriad diversity. Teachers will play multiple roles as they seek to use their professional competencies to help different groups of learners engage in multiple learning events to meet their desired goals.

Conclusion

Life-long learning is rightly a priority educational aim. In the present context, it also provides a focus for many wider social and global concerns that many see as existential threats to human organisation.

As postmodernism invariably and starkly demonstrates, there are no rules of human evolution. The fragmentation of countries into ethnic subdivisions shows that a regression into feudalism is no less feasible than a future world of connected harmony. For instance, although the Concorde made supersonic travel possible some thirty years ago, we have seen little developments in mass air travel since. It may be that the so-called learning revolution will simply result in some of us becoming high-flying life-long learners, while many others will continue to struggle with core competencies and with greater frustrations than yesteryear. We may be living in a high-tech digital world; but psychologically, are we also still living in caves?

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Continuous Education/Distance Learning: GSMS Graduate Diploma Programmes

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Continuous education plays a fundamental role in the life-long professional development of physicians. It allows medical professionals to increase their knowledge, improve their skills and keep abreast with the latest developments in clinical management. The vital need for continuous medical education has remained unchanged over time, while teaching and learning methods have evolved to take advantage of integration of learning resources and technology.

Traditional Teaching and Learning

Traditionally, teaching/learning methods focus on classroom lectures, actual hands-on training with real patients during clinical practices, group discussions, theoretical and practical examinations, as well as printed books and other reading materials. These teaching/learning sessions involve a limited group of participants and are held at fixed venues and times.

With the breakthrough in information technology and the invention of sophisticated electronic gadgets, the limitations encountered by traditional teaching/learning methods are overcome by distance learning—namely, individual study of specially prepared materials, supplemented by integrated learning resources.

Advantages of Distance Learning

Factors contributing to the increasing popularity of distance learning to complement traditional teaching/learning methods are as follows:

- the flexibility of teaching/learning in aspects of time and place;
- the accessibility to a large pool of quality-assured, up-to-date learning resources;
- the capability to reach out to an almost unlimited number of students;
- the flexibility of adapting the learned knowledge to local settings.

Experience with Distance Learning

The Graduate School of Medical Studies, realising the advantages of combined teaching methods

(traditional and distance learning), has since incorporated such a teaching concept into the curriculum of its graduate diploma programmes:

1. Graduate Diploma in Geriatric Medicine
 - aims to provide primary care physicians with basic skills in caring for the elderly;
 - comprises 4 modules of self-directed learning and assignments, 10 workshops, clinical attachments and site visits.
2. Graduate Diploma in Occupation Medicine
 - aims to provide comprehensive skills to doctors in general practice and specialists who wish to have a better understanding of the occupational aspects of their specialty;
 - comprises 6 weeks of face-to-face learning and site visits (a total of 100 hours), assignments, continual assessments and submission of a written portfolio.
3. Graduate Diploma in Psychotherapy
 - aims to equip practising mental health professionals with basic proficiency in individual psychotherapy based on various theoretical approaches;
 - consists of lectures, group seminars with self-directed learning, supervised discussion sessions, case conferences, weekend workshops and clinical work at the participant's place of work.
4. Graduate Diploma in Basic Ultrasonography (O&G)
 - aims to enable participants to be proficient in basic ultrasonography in obstetrics and gynaecology;
 - includes lectures, hands-on-training, log work and formative self-assessments.
5. Graduate Diploma in Family Practice Dermatology
 - aims to equip Family Medicine practitioners with the knowledge and skills to deal with skin diseases at a primary care level;
 - contains large distance-learning components

(self-study notes and formative assessment), one-week clinical attachment and a training seminar.

6. Graduate Diploma in Family Medicine

- introduced jointly with the College of Family Physicians, Singapore;
- aims to train primary care doctors to practise Family Medicine at an enhanced level to meet the needs of the child, the adolescent, the adult and the elderly;
- consists of distance learning, face-to-face workshops, quarterly tutorials and 3 Family Medicine practice skills courses.

Combinations

These programmes are based on a modular system with significant components of distance learning. Participants are only required to attend minimum hours of workshops, lectures, practical sessions and other scheduled sessions. They are provided with reading materials and assignments/tasks to be completed at their own convenience. Assessments and examinations are also held regularly to evaluate the participants' performance. Pre-assigned supervisors assist the participants in their studies and monitor their progress.

The distance learning component is vital in these graduate diploma programmes as the majority of participants are medical officers and private general practitioners with busy schedules. Distance learning enables participants to plan their own study time, fitting it around their clinical work. Distance learning also allows a free choice of study venues, thus saving participants' travelling time and boosting convenience.

Self-paced learning allows participants of different calibre to pursue the same course. The slow learners will not be stressed for trying to keep up with the pace of the class, while the fast learners will not be hindered by their peers. Participants proceed from one module to another at a speed that is most comfortable and suitable for them.

The flexibility in time and venue is not only advantageous for the participants, but also the teachers. Most teachers of the graduate diploma programmes are medical professionals with other commitments (e.g. clinical duties, research, other teaching obligations). With distance learning, teaching materials can be prepared at their own convenience and delivered to the participants in the most efficient manner (e.g. via postal/courier services, internet communications, facsimile, video conference).

By not being tied down to fixed times and venues, a large pool of resources is unlocked. Expertise from all over the world can be tapped upon, information can be discussed and notes be exchanged. Coupled with strict monitoring, these factors ensure up-to-date and high-quality education materials.

Although the information is obtained internationally, local teachers can structure the information to be of greater relevance to the local settings. As the participants are pursuing the course locally, they are able to apply the knowledge gained from foreign resources (through distance learning) into their own settings.

Taking advantage of the flexibility of distance learning, the medical graduate diploma programmes in Singapore can in fact be offered to foreign medical professionals who have difficulties travelling to Singapore or leaving their job for an extended period. However, the implementation of such programmes at the current moment is not possible because many limiting factors (e.g. partnership with foreign medical institutions, accreditation of consultants who can supervise the 'hands-on' clinical component where the course participants are practising) are still under review. Foreigners who wish to pursue the graduate diploma programmes still have to travel to Singapore periodically for practical sessions that require their physical attendance. Nevertheless, we hope to implement the following in the near future:

- interactive assessment such as online clinical quizzes;
- interactive discussions between teachers and course participants as well as amongst course participants;
- links with foreign medical institutions which can provide 'on-site' clinical supervisors.

The Way to Go

Despite its many advantages, the distance learning component cannot be conducted solely without being combined with the traditional teaching/learning methods. Medical studies in Singapore still put much emphasis on the hands-on clinical practice sessions and examinations. Face-to-face interaction still plays an important role in the passing of knowledge from teachers to students, especially in patient management issues such as 'communication skills' and 'bedside skills'. Hence, distance learning is used as a complement to the traditional teaching/learning methods, instead of being a replacement. Striking a balance between traditional learning and teaching methods and distance learning is the way to go. ■

Continuing Education in Dentistry

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The Need for Continuing Education

'Thinking Schools, Learning Nation': this is what Singapore is striving for. It also means that learning is a continual process and that we do not stop learning or slow down our learning when we graduate with our first degree. In clinical dentistry, it is vital that we keep ourselves up-to-date with the latest technologies, materials and knowledge that are being developed to help dentists provide the best treatment for our patients. A failure to keep current would be a failure in our professional responsibilities. In addition, dentistry, like medicine, is moving into evidence-based practice. How can we achieve our goal of being a responsible practitioner unless we actively attend continuing education courses?

Patients that we treat today are markedly different from those we saw twenty years ago. As information on oral health and ways of managing dental problems is easily available on the Internet, dental professionals must be well informed to help patients understand what they obtain from the Net. In a true scenario, a female patient went to see a dentist requesting for treatment using dental implants. The dentist explained the procedures involved and the advantages and limitations of the treatment. At the end of the discussion, the patient declared: "Doctor, I agree to have you treat me because you have a clear explanation of treatment using dental implants. Actually, my husband surfed the Net and read about it. Since you know about this treatment modality, I am confident you will do a good job." Imagine what would have been the result if the dentist had lacked the latest information regarding the subject. Losing the patient is one thing. Giving the patient a poor opinion of our profession would be something else.

Continuing Education at GSDS

As part of NUS, the Graduate School of Dental Studies (GSDS) must play a leading role in continuing education not just locally, but also beyond our shores. Together with other organisations like the National Dental Centre, Singapore Dental

Association, College of General Dental Practitioners, Academy of Medicine and the Specialist Societies, GSDS seeks to ensure that there are an adequate number of courses to meet an ever-increasing demand for continuing education programmes that dentists and supporting personnel can attend.

Each year at GSDS, a number of courses are conducted ranging from lectures to, especially, hands-on programmes. Some of these hands-on courses are laboratory based (e.g. root canal therapy, dental implants, cosmetic dentistry), while others are clinically based (e.g. periodontics). For 2002, courses planned include Cosmetic Dentistry, Dental Implants, Endodontics, Oral & Maxillofacial Surgery, Pediatric Dentistry and Periodontics. GSDS is fortunate to have a group of committed full and part-time staff (from Singapore and overseas) to develop and conduct its various programmes.

To improve the quality of its programmes (particularly laboratory-based courses), the Faculty of Dentistry recently had an extensive overhaul of its facilities. The pre-clinical teaching laboratory was renovated at a cost of over \$2,000,000 to include amenities such as patient simulators, close circuit cameras and a video system connected to high-resolution computer screens that can also provide multimedia services. Through generous donations from alumni and well wishers during the 70th anniversary celebrations of the Dental Faculty, a Clinical Teaching Unit was set up, containing a state-of-the-art operating microscope, with intra-oral video cameras and TV monitors, to enhance teaching and learning in hands-on clinical courses. The new extension at Level 4 of the Dental Faculty, which was officially opened on 1 December 2001 by the President and Vice-Chancellor, Professor Shih Choon Fong, includes a 150-seat auditorium for lecture programmes. The auditorium, pre-clinical laboratory and Clinical Teaching Unit are linked audio-visually to enable clinical procedures performed at the Clinic to be transmitted to the auditorium and laboratory.

In the future, GSDS intends to provide continuing education beyond courses conducted on-site at the Dental Faculty's premises. By taking advantage of NUS' rich store of IT resources, GSDS plans to develop computer-based interactive programmes for self study and distance learning as well as to utilise video-conferencing to conduct courses led by foreign experts without them having to come to Singapore.

Conclusion

For it to work, the idea of continuing education should be introduced before our students have graduated. We should cultivate a learning culture within our undergraduates so that it will be part of their continual learning process when they graduate. Consequently, we should encourage them to attend continuing education courses conducted by any relevant organisation even during their undergraduate days. ■

Learning to Go the Distance: A Decade of Expanding Opportunities for Distance Learning in Thailand

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Introduction

The value of distance learning for rural development has been well known for some time (e.g. Parker and Hudson; Saunders, Warford, and Wellenius; Williams; Hudson; and Pool). Starting a programme of distance learning in a nation requires a synergistic critical mass of private and public infrastructure investment including electricity, telecommunications, television, and computers. The following paragraphs describe how, between 1990 and 2000, Thailand was able to achieve that critical mass and successfully introduce distance learning throughout the country, including virtually all rural areas.

Electricity

For nearly all distance learning programmes, electricity is a basic requirement, both to get the educational material to the target group and to receive responses from that group. Electricity is needed to operate radios, televisions and computers—not to mention electric lights to allow study in evenings after a day's work or regular schooling. There are, of course, exceptions to the need for electricity: radio programmes are often received on battery-operated radios in rural areas. Even television in remote areas can be (and

frequently is) operated using truck batteries for power. However, although responses of learners to specific courses can be sent to the teachers by mail, depending on batteries for reception of distance learning programmes is less than optimal for continuing distance education programmes (i.e. distance learning is greatly facilitated by electricity).

At the beginning of the last decade, all major urban areas in the country and most rural towns were included in the national electric grid. However, as of 1994, total rural electric use by households (exclusive of the Bangkok metropolitan area) was only 7.4 billion gigawatt hours. By 1998, that figure had grown to 11.9¹ billion.

Television

With electricity came television: in 1992, there were 7,056,800 sets in rural areas; by 1998, the total was 11,669,900². Channel 11, which features both formal and informal education programmes, could be received in virtually all areas of the country.

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1. *Key Statistics of Thailand 1999 (Special Edition)*, p. 34.
 2. *Ibid.*, p. 78.

Telecommunications

Telephones are a vital part of most distance learning programmes such as calling to discuss specific aspects of courses with the instructor. In addition, land line telephone service is needed to allow Internet connections between distance learning students and instructors (see *Computers* below). Again, there are technical exceptions. For example, computers connected to satellite phones can access the Internet from virtually any location in the world without telephone land lines or cellular service; however, the costs of satellite communication, both equipment and service, makes this impractical for rural residents—and most other people too.

Rural telephone coverage has been promoted at least since the Fifth National Social and Economic Development Plan (1982–1986). In 1986, there were only 999,000 phone lines nation-wide.³ In March 1996, there were only 6.24 lines connected per 100 people, and the distribution was not even: density in Bangkok was 27.2 lines per 100 people, while rural areas had only 2.87 lines per 100 people⁴. But those numbers do not give the full picture: most rural telephones (i.e. outside Bangkok) were located in provincial capitals and district towns. Requesting a telephone line in provincial towns required several years of waiting. In many rural areas, obtaining a telephone connection was virtually impossible. By 1998, the total number of lines had risen to 5,037,500.⁵ In addition, the Telephone Organization of Thailand under the SchoolNet Program plans to connect 24,267 primary schools with a fixed line to allow internet connection.⁶

In addition to land lines, cellular phones are now operational in virtually all rural areas. These phones allow easy voice communication between distance learning students and teachers. However, connecting cellular phones with computers to provide Internet access, although technically possible, due to cost and other factors, is not a viable option.

Computers

Computers, specifically computers connected to the Internet, are a vital link in most distance learning

programmes. Students and teachers can exchange messages by email, examinations can be transmitted, etc. Radio and television distance learning can be supplemented with internet communication. Even entire distance learning programmes can be conducted exclusively over the Internet, without recourse to either television or radio. As noted above, internet communication normally requires access to telephones service.

The average income in rural areas is about 6,807 baht (approximately US\$155) per month, a figure that effectively precludes the purchase of personal computers by the vast majority of the rural population. Purchasing a computer to be used almost exclusively for distance learning programmes would obviously not be cost-effective for most households.

To provide computer access in rural areas, another government programme was recently initiated. The Ministry of Education plans to spend 300 million baht (approximately US\$6.8 million) to buy computers for primary and secondary schools nation-wide.⁷

Distance Learning Programmes

The final piece required for successful distance learning is the distance learning programmes themselves. In Thailand, various state and private universities now provide a variety of degree and non-degree programmes. For example, Sukhothai Thammatirat currently offers non-degree programmes in various skill areas such as English for Communication, Secretarial Training, and Printing as well as masters and bachelors degrees in Education, Management, Health Science and Economics.⁸

Conclusion

The upshot is that a combination of government programmes and private sector demand has, over the course of a single decade, resulted in the creation of the opportunity for virtually all rural areas of Thailand to take advantage of distance learning programmes through radio, television, and/or the Internet. It is hoped that Thailand's success story will provide inspiration for other developing nations of the world which have yet to provide universal access to distance learning.

3. Hoffman, p. 758.

4. Bruns, *et al.*, pp. 1-1 – 1-2.

5. McGeveran, p. 848.

6. *The Bangkok Post*, 18 December 2001, p. 3.

7. *Ibid.*

8. www.stou.ac.th (Accessed: 18 December 2001, 15:30).

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