

INTERNET-BASED EDUCATION FOR ENROLLED NURSES: COULD IT BE EFFECTIVE?

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ABSTRACT

There has been an extraordinary growth of technology-mediated learning in the higher education system over the last 10 years (IHEP 2000, p.1), predominantly in the area of distance education. These technological advances provide exciting opportunities for the delivery of education to those who have not previously been able to access on-campus learning, usually because of barriers of distance and cost.

While there are a growing number of studies supporting the implementation of distance education programs in nursing education, the use of Internet-based learning as a sole means of education delivery is relatively new. This paper investigates the current literature available regarding the use of Internet-based education delivery for registered and enrolled nurses in undergraduate and postgraduate programs, and reviews contemporary education trends in Victoria, Australia, for enrolled nurses (ENs).

The challenge in nursing education currently is to design curricula that will address the health care needs of the future. This is not easy with the rapidly changing environment health care professionals, especially nurses, face in their daily work. To prepare graduates who can function successfully as professional nurses in this new century, nurse educators must examine the dominant trends in health care and education, and analyse whether the processes used to prepare students for practice will result in the desired outcome (Jorgensen et al 1998, p.109). The current growth and impact of web-based and online learning courses has been proposed by some as a major revolution for education, and has been firmly embraced by many tertiary institutions as the way of the future (Sims 1998, p.21).

INTRODUCTION

Quality education is a universal goal held by most within the teaching profession. It is common to hear arguments that instructional technology will be the key to educational quality as we progress through this millennium. A number of enthusiasts of educational technology believe that quality has and will continue to increase rapidly, creating a new educational culture (Garson 2001, p.1). Sims (1998) argues that the majority of self-paced online learning applications tend to reflect the naivety of the developer rather than demonstrating sound theoretical frameworks. So where does this leave nursing education and the question of the effectiveness of Internet-based learning for ENs?

APPROACHES TO DISTANCE EDUCATION

There are a number of articles describing the different approaches to distance education for nurses (Garson 2001; Loving and Wilson 1999; Clarke 1998; Ribbons 1998; Sheppard and Mackintosh 1998; Lewis, Watson and Newfield 1997; Blue and Howe-Adams 1993). Many of these focus on a paper-based curriculum predominantly in the graduate sector, but there are increasing numbers which discuss incorporating online learning into their nursing programs. It is worth considering these papers in the context of developing a curriculum for undergraduate education, which incorporates a distance education and/or online format for nurses. At this time there is minimal literature that discusses EN education, let alone education provided to them via distance education or the Internet.

Distance learning is not a new concept. It has been around in some form for over 150 years, but only a small number of nursing schools in Australia have offered distance education courses for more than 10 years (Reinert and Fryback 1997, p.421). Despite the popularity of off-campus courses in other disciplines, a number of schools of nursing have been reluctant to incorporate this methodology into their curriculum. Contemporary tertiary nursing institutions must respond to a number of challenges, such as the need for advanced practice nurses, rural nurses, and a cost-constrained environment, which

affect the retention of quality academic staff (Reinert and Fryback 1997, p.422). In view of this, distance education technologies, especially online delivery, are being examined for their suitability for nursing education, in both undergraduate and postgraduate programs. Cragg (1991) asserts that distance education provides an efficient means of reaching nurses separated from educational institutions by geography or other circumstances that make face-to-face instruction difficult (Cragg 1991, p.256). Whether the focus is on undergraduate, graduate or continuing education, there is need to meet the educational demands of nurse learners struggling to fit within the changing health environment (Sherwood et al 1994, p.251).

Viverais-Dresler and Kutschke (1992), in a study of registered nurse (RN) students in a baccalaureate program, found nursing skills are best learned when the student can test theory and beliefs in a practice setting (Viversais-Dresler and Kutschke 1992, p.224). This has serious implications for distance education and the online delivery of nursing education. Sims (2000) believes the shift to technology-based and online learning has increased the focus on learners and learning through a student-centred approach to curriculum development.

As tertiary institutions rely more on the online delivery and access of their courses, there is an increase in the expectations of an independent, often geographically isolated, learner to use those materials effectively (Sims 2000, p.22). But is this asking too much of an undergraduate student with limited knowledge and skills in both their chosen field and potentially the computer technology used to deliver the course?

TECHNOLOGY OR LEARNING?

Bechervaise (2001) stresses with online technology educators must consider the questions: 'What comes first - the technology or the learning? Which is the driving force? He sees the role of education as teaching people how to learn and that the 'magic' happens when the teaching style matches the learning style. Learning is individual and non-linear, so how does this fit with online delivery? Sims (2000) believes that producing materials for online delivery is not about 'creating nice-looking digital paper, but of harnessing the potential that online environments can provide through employing new methods of information and visual communication' (Sims 2000, p.22). Clarke and James (1997) see the purpose of flexible, including online, learning as improving educational quality, specifically in relation to improving access, availability, relevance, and the way in which the individuals' needs and the needs of stakeholders (that is, employers, providers and validating bodies) are met (Clarke and James 1997, p.1243).

Sheppard and Mackintosh (1998) propose that recent technological advances provide exciting opportunities for the delivery of education to rural and remote health professionals as they overcome the barriers of distance and

cost, and create a learning environment that maximises interactivity and develops information literacy. Whilst they focus predominantly on postgraduate education they believe that undergraduate training provides the foundations of disciplinary knowledge and skills, and this is vital in fostering a commitment to ongoing learning. They assert that the different nature of rural and remote area health care to metropolitan service delivery requires unique education that is specific to the needs of rural professionals (Sheppard and Mackintosh, 1998, p.189). Blue and Howe-Adams (1993) argue that rural and remote health professionals require diversity, flexibility and recognition of individual and local education needs in the structure and content of the courses of learning they undertake (Blue and Howe-Adams 1993, p.7). For nurse educators this is an important consideration when developing curricula that meet the needs of those who use them. Do our current means of educating rural and remote area ENs provide them with the knowledge and skills to function competently within the communities where they will work?

MAINTAINING A LEARNING CENTRED APPROACH

While in essence George and Gibbins (1999) support online learning, they argue that if we are to maintain a learner-centred approach for rural health workers living in rural and remote areas what is needed is a diversity of delivery methods, utilising a range of technologies, to respond to the diversity of the environment. Computer-mediated communication is gaining momentum in this new millennium, however, solely focusing on Internet-based learning can deprive many of the chance to undertake professional education. This also highlights equity and access issues for rural and remote area students. As Blue and Howe-Adams discuss, the issues for those in rural and remote areas are those of choosing a suitable education program, accessing that program, and actually staying in the program, which for those involved can be a daunting task (Blue and Howe-Adams 1993, p.7).

Technology can be one solution to some teaching and learning situations which require flexibility. George and Gibbins (1999) found, in their study of the effectiveness of distance education delivery methods, that rural health workers, although keen to use technology, can quite often be disadvantaged because of access problems. The study also found that online delivery did not score well in the survey of preferred delivery modes, and when looking at access to facilities and confidence levels, only 9% of respondents had continuous access to email and Internet, and 60% had no access at all to either email or the Internet (George and Gibbins 1999). This finding is supported by Stillman (2001) who also found that rural and remote users needed sites that were quick and easy to use, both technically and in their design. When downloading information more than 55% can only operate at 14.4 kilobytes/second, and 30% at

9.6 kilobytes/second. Interestingly, Stillman estimates that more than 30% of rural users keep images turned off because of the difficulties of access and download time. This finding has important implications in various nursing subjects that may require the use of imagery to allow effective learning to occur.

PRACTICALITIES OF ONLINE EDUCATION

The Tasmanian School of Nursing, in Australia, undertook online teaching in 1996 as an initiative towards the better delivery of nurse education in that State, particularly for rural and remote area access. They used two subjects in their bachelor of nursing program, which was available to both RN and EN students. A profile of student respondents showed that the majority were female ENs, studying in Launceston, and aged between 27-40 years. The findings of the study indicated that many students enjoyed the format and delivery, and although they experienced some difficulties, they found their electronic skills improved over the semester and that they benefited from the experience (Martyr 1998, p.10).

In contrast to George and Gibbing's findings, the majority of students in this program used home computers followed by the nursing computer laboratory, indicating that access was not an insurmountable issue for them. Given that the majority of participants were EN students, this indicates that these students were keen to further their professional development via online delivery methods.

The author's review of EN (Division 2) nurse education providers in Victoria, Australia, found that there was limited use of online technologies within these programs (Field 2001). A number of the providers used Internet-based resources as part of the course but no subjects were taught solely online.

The use of email was encouraged as a means of communication between student and lecturer, and in one program a web site has been set up for self-directed learning in medical terminology to support the anatomy and physiology component of the course. Another provider used Internet access in the 'directed study' time to enable students to develop their Internet skills and complete assignments. It was felt that these students would not cope with 100% online content straight off, but after the first semester they would have the skills to manage their learning by this means of delivery. The rationale given was that the teachers have found they need to wean the students out of 'learned helplessness'.

The profile of a student undertaking EN studies in a number of tertiary institutions in Victoria is that of a mature aged female, average age 30, who is generally not confident in her computer skills or the ability to learn in the initial stages of the course (Field 2001).

In comparison to the Tasmanian experience, this reflects a similar result if one takes into account that in the first year of study in Tasmania the students undertook a

subject on applied computing. Thus, for the Victorian students once they had gained the knowledge, skills and comfort in using the technology the results were very positive, with students achieving higher than expected grades (Field 2001). Therefore, the use of online technology has a place in the education of ENs to improve learning outcomes. But how can we do this successfully and achieve the best result for the student, especially those in rural and remote areas?

INTERNET BASED EDUCATION: THE FUTURE

McGonigle and Mastrian (1998) assert that online teaching will continue to move to the forefront and reshape education as we know it today, with an increasing number of nursing courses delivered, either in part or totally, over the World Wide Web. They believe that improved student user preparation will lead to enhanced student learning in this new educational environment, and that students must be prepared for a major adjustment in their educational structure. It is imperative that students are comfortable in the new learning environment developed for them (McGonigle and Mastrian 1998, p.81). This view confirms the findings outlined above where ENs achieved excellent results in their studies once they were comfortable with the delivery technology. Rose et al (2000) found students required at least a two hour orientation which included an overview of course requirements, the course components, and directions for using the web browser, email and discussion boards in their online graduate epidemiology course (Rose et al 2000, p.163). While these recommendations about student use are important, it is necessary that for online learning to be successful teachers also need to have a sound understanding of the technology and learning approaches required in this delivery mode.

The ability of digital-based technology to deliver text, full colour graphics, sound, video, and animation on one platform provides nurse educators with a tool unrivalled in its capacity to enhance the teaching and learning process. Ribbons (1998) states that one of the most important characteristics of multimedia technology is its ability to offer an enjoyable, effective and flexible method of instructional delivery which attracts the learner's interest, maintains attention, and accommodates a diversity of learning styles (Ribbons 1998, p.109). Clark (1998) argues that introducing nursing students to the Internet and computer technology is fundamental in educating the nurse for the future, and in addition, the Internet should be used in the nursing classroom as a resource to supplement teaching materials. She describes the benefits of developing a web site in an undergraduate nursing program for the purpose of providing a resource for further study and research relevant to the course, and the integration of a web site evaluation tool to assist students in thinking critically about nursing resources available on the Internet.

This new educational concept allowed participating students to learn how to use a computer, email and the Internet to locate professional information, and enabled the nursing students to gain a broader perspective of the profession (Clark 1998, p.220).

DESIGN OF INTERNET-BASED EDUCATION

The process of designing an effective Internet-based course requires faculty commitment, administrative and technical support, and financial resources. An important factor to consider when planning the integration of online technology as a method of course delivery is the conceptual approach to the curriculum (Carlton et al 1998, p.48). Review of the classroom content for its applicability to online delivery is essential when designing an Internet course. A number of studies recommend that it is vital that a team approach is taken and that time is allowed to develop the materials to ensure relevance and suitability to an online environment (Carlton et al 1998; Clark 1998; Ribbons 1998). While considerable amounts of time and expense will occur in the development of a quality online course, Rose et al (2000) assert that each subsequent time the course is offered, operating costs should decrease significantly for faculty, the system support and database administration (Rose et al 2000, p.163). This is an important factor when tertiary institutions are receiving less funding, and yet still are expected to produce quality courses and graduates.

IMPLEMENTATION ISSUES

Lewis et al (1997) identify some difficulties encountered in implementing technology in academic settings. These include the age of the faculty and administrators, a general lack of understanding of the potential of the technology to support instruction, and a lack of funds for hardware and software acquisition. Other concerns faced by faculty may include a perceived threat to traditional faculty roles, fear of loss of employment, and a perceived inability to control the teaching process. They found that nursing faculty in particular felt that computers potentially interrupted the interpersonal relationships with students and patients that are central to building caring, therapeutic relationships (Lewis et al 1997, p.188). This view is disputed in a number of articles in their evaluation of online programs in nursing. Evaluation of these programs found that there was a high level of interaction and relationship development among students and between students and faculty when participating in online programs and that extra time was often required at the end of the course for exchange of contacts (Baier and Mueggenburg 2001, p.3; Rosenlund and Damask-Bembenek 1999, p.5).

Nurse educators have traditionally used a didactic model to deliver instruction in the classroom and this may explain some fear regarding the implementation of

Internet learning. A prominent feature of this traditional educational philosophy is a hierarchical view of teacher and students - faculty teach, students learn.

An alternative philosophical view is that faculty has a responsibility to provide the structure within which students can learn independently and collaboratively (Loving and Wilson 2000, p.70). It is this latter view that will allow academics to incorporate new technology into their teaching and facilitate the development of independent critical thinking abilities within their students.

Computer-assisted instructional programs are one way of helping students achieve this independence. The implementation of virtual reality and interactive multimedia programs have proven to be successful in communicating educational objectives and involving the student as an active participant in the learning process (Rouse 1999, p.172; Hodson Carlton 1996, p.148). Oliver (1999) discusses the development of a multimedia CD-ROM which presents a virtual reality hospital ward to help prepare final year nursing students for entry into the workforce. By simulating the every day complexities of clinical decision-making the multimedia courseware seeks to make the education of nursing students as authentic as possible (Oliver 1999, p.16).

CONCLUSION

The use of the Internet and online courses has great potential for improving the education and learning outcomes for ENs. It is vital that providers of this education seek new and innovative ways to present their courses, which increase access and opportunity for students throughout Australia. Sadly in an online education report, White (1999) identifies that TAFE institutions have the lowest number of student online users in Australia (White 1999, p.3). If TAFE and other providers wish to continue their commitment to providing quality education to ENs, especially in rural and remote areas, they need to consider the technologies available and the integration of multimedia and online delivery methods into their programs to enhance the learning process for their students.

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