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Online Nurse Education

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ABSTRACT

In many countries, healthcare professionals are required to participate annually in compulsory continuing medical education (CME). The effort involved in providing wide-scale training led the Italian Ministry of Health to support pilot courses using online distance learning. This article reports the results of a short survey which aimed to gauge the potential of online CME for nurses in Italy. Most of the 152 respondents, all of whom had completed an online course, supported the inclusion of some form of collaborative learning. Three possible market segments for online learning emerged from the study: nurses who prefer to study alone, those who would appreciate collaborative activities well-integrated into course design, and those who would prefer courses that include online collaboration of any kind. The authors conclude that online learning is a suitable mode for enabling participation in CME for accreditation, but caution that further research is required to confirm that the preferences of nurses who have experienced online distance learning are shared by those who have not.

INTRODUCTION

Rapid developments in medical knowledge have been accompanied by increased attention to continuing medical education (CME) for doctors, nurses, and other healthcare professionals. To ensure practitioners' knowledge remains current, professional organizations or national bodies, or both, typically establish a minimum number of hours or CME credits which a healthcare professional must attain in a year to maintain their accreditation to practice. Given the extent of training required, several national governments have supported pilot studies that use information and communications technologies (ICT) in different ways to enable healthcare professionals to participate in CME from their home or place of work, or while mobile, "on the road."

There is little literature on CME in the information systems field, but some recent studies have examined aspects of interaction by medical workers with Internet and mobile technologies. Studies of adoption of the Internet and Internet-based systems to gather data for evidence-based practice in the United Kingdom in the late 1990s indicated that voluntary use of such systems was limited by the busy day-to-day working life of the staff of medical practices (Abdulrasul, 2001; Howcroft & Mitev, 2000; Klecun & Cornford, 2003). The studies of mobile systems indicate that adoption of mobile technologies in medical contexts is complex, and related at least as much to organizational issues such as control, and extra-organizational issues such as the individual's perceived role as a professional and member of society, as it is to the interface between the user and the technology (Scheepers, Scheepers, & Ngwenyama, 2006; Wiredu & Sorenson, 2006). To this extent, these studies touch on some of the problems that online CME aims to address.

Nurses, like other healthcare workers, are faced with the challenge of combining education with practice, and their lives as professionals, family members, and members of society. In many countries, nurses obtain formal qualifications or keep up to date with developments in theory and practice part-time, juggling study with the demands of their day-to-day work and family life. Since 2002, the Italian government has required health professionals to obtain a minimum number of credits through participation in CME. In 2006, the

minimum number of credits, for example, was 50, the equivalent of more than a week of full-time education (Ministero della Salute, 2000). It would be impossible to rely on classroom-based education to implement a nation-wide initiative on this scale. Instead, the Ministry for Health took advantage of the opportunities for distance learning offered by the Internet. In this article, we report on the preferences of nurse participants in one of the pilot courses supported by the Ministry. The course was conducted within the ambit of a research project that sought to evaluate the role of social learning, and in particular, online collaborative learning in motivating participants and reducing dropout rates in online professional development, so we were particularly interested in the participants' preferences for social and collaborative approaches to online learning.

BACKGROUND AND LITERATURE

The Internet permits busy professionals to participate in continuing professional education (CPE) from their offices or homes at times that are convenient to them. Most Internet-based or "online" courses for healthcare practitioners involve delivery of material prepared by professional teachers and trainers in computer-based training packages. These packages typically involve pages or slides that present foundation information and exercises and assessments that enable the learner to practice and test their understanding of the delivered information (Ricketts, Price, & Chamberlain, 2005). Some courses may include multimedia simulations. In many cases, an online tutor is available to answer participant questions and, in some cases, to stimulate involvement and participation in the course (Diekelmann & Mendias, 2005).

One of the problems associated with online courses is that dropout rates are high, even when tutors are available (Parker, 2003). Online social interaction among learners appears to reduce the sense of isolation that is often felt by learners taking courses at a distance from the teacher and other learners (Contreras-Castillo, Favela, Perez-Fragoso, & Santamaria-del-Angel, 2004). Participants in courses that incorporate such online social interaction have been found to have higher satisfaction and higher completion rates than participants in courses that afford no opportunity for social interaction (Renzi & Klobas, 2002). Collaborative learning activities that incorporate social interaction are also believed to improve learners' engagement with the course material and their learning from participation (Rudestam & Schoenholtz-Read, 2002).

A question mark hangs over the value of online social interaction in courses for nurses, however. Platzer, Blake, and Ashford (2000) found that British nurses did not necessarily enjoy group work for CPE in a face-to-face setting. They identified several barriers to learning from group work, including the ways in which the nurses interact with one another and group members' commitment to shared learning. On the other hand, Buckingham (2003) found that Canadian bachelor's degree participants studying at a distance from one another appreciated online discussions, which improved a number of skills, including time management and critical thinking. The differences in the settings of these studies, as well as the differences in the results, make it difficult to conclude if online collaborative learning is a suitable CPE method for nurses, or if nurses who participate in CPE would enjoy such an approach. Indeed, nurse educators have noted the lack of research on Web-based learning, and called for further research in this field (Howatson-Jones, 2004; Kenny, 2000).

In this article, we examine nurses' views of online learning in general, and online collaborative learning in particular. Working with Italian nurses who had just completed an online CME course, we asked two questions:

1. What are the perceived advantages of participation in online professional development courses for nurses?
2. What are nurses' attitudes to participation in courses that involve social and online collaborative learning?

We used the answers to these questions to draw initial conclusions about the nature of online courses that would offer a satisfactory distance learning experience for nurses.

METHODS

The research questions were addressed in a questionnaire survey of nurses who participated in a pilot online CME course supported by the Italian government.

The Course

The course concerned accreditation and measurement of the quality of health services. It was offered by an e-learning provider, TILS SpA, in partnership with the Tor Vergata University Hospital Clinic (Azienda Ospedaliera Universitaria Policlinico Tor Vergata), the Lazzaro Spallanzi National Institute for Infectious Diseases (l'Istituto Nazionale per le Malattie Infettive Lazzaro Spallanzani), and a consulting firm, SI-IES Istituto Europeo Servizi. As a pilot for the national CME initiative, the course was offered free of charge to participants. Participants who successfully completed the course were awarded 12 CME credits (just over 20% of their annual requirement).

The course was delivered entirely online over the World Wide Web (WWW) in the TILS Learning Management System (LMS). Trainees used their web browser to access the course on a site mounted by TILS (http://www.tils.com/ecm). Each of the course's three modules consisted of a lesson presented over a series of screens and supported by a glossary, documents such as copies of relevant directives, and references. The course environment also included an open forum where trainees could discuss the course and course-related issues in general. Trainees could take the course autonomously at any time of day, and could take as much time as they liked to complete each module and the course as a whole, provided they completed the course by the closing date two months from the date that the course was mounted. A tutor was available from within the course environment to answer questions and discuss the course material, although interaction with the tutor was not required to complete the course. Participants also had access to a secretary to help with administrative matters, and a help desk to discuss and resolve problems associated with accessing and using the course technology.

Successful course completion required reaching a minimum standard in a multiple choice test. Of the 554 nurses who commenced the course, 334 completed the test, and 229 passed it.

Data Collection

Once a participant completed and passed the test, the course tutor invited them by e-mail to respond to a postcourse questionnaire. The questionnaire was sent as a Word file attached to the invitation. Questionnaires were returned by e-mail to the course provider, so were not anonymous.

Instrument

The questionnaire (available, in Italian, from the authors) consisted of 13 questions with closed response choices. It was designed to identify reasons for a trainee's choice to participate in an online rather than a classroom-based course; preferences for the times of day in which courses and tutors might be available, print- or screen-based courses, and courses with or without a tutor; and options for inclusion of collaborative learning activities.

Sample

Of the 229 nurses who successfully completed the course, 152 replied to the questionnaire, a response rate of 66%. The sample consisted of 52 (34%) males, and 100 (66%) females. Most completed the course (including the final test) within nine days of commencing. Almost 50% were aged between 31 and 40, 25% were between 41 and 50, and 10% were over 50.

FINDINGS

Participation Patterns

The majority of the respondents (99, 65%) participated in the course most often from home, while 27% (41) participated most often from their place of work. Most worked on the course in the afternoons or evenings (59, 29% between 2:00 p.m. and 8:00 p.m., and 65, 39% between 8:00 p.m. and midnight). A smaller number participated in the mornings (22, 14% between 7:00 a.m. and 2:00 p.m.) and very few in the late night/early morning (6, 4%).

Perceived Advantage of Online Courses

Almost all participants (90%) reported that a significant advantage of an online course was the convenience of studying at times that suit them (Table 1). Over a third of participants (38%) also believed that completing an online course would save time, and a similar proportion (34%) thought that online courses provided easy access to information.

Preferences

The majority of participants (111, 73%) rated online courses as their preferred method of acquiring the necessary CME credits. Most of the remaining participants (34, 22%) would prefer a mixed mode course, with some classroom sessions as well as online learning. Very few of these online course participants (6, 4%) would prefer to attend courses held entirely in the classroom.

Only a small proportion of participants preferred to follow course contents only online on screen. The majority preferred to print all or part of the material. See Table 2.

There was strong support for the availability of a tutor. Most respondents (128, 85%) were unequivocal in their support, a smaller proportion (22, 14%) were indifferent while very few (2, 1%) saw no need for a tutor at all. Most respondents (119, 78%) preferred to communicate with the tutor by e-mail rather than other means, but nearly 20% (29, 19%) would like more interactive methods (such as chat or videoconference) in addition to e-mail.

Attitudes to Collaborative Learning

Most participants would accept some form of collaboration with other participants in their online courses (Table 3). While just over a third (53, 35%) expressed unconstrained interest in collaboration, a higher proportion (85, 55%) was more circumspect, expressing interest in collaboration "only when necessary." A small proportion (13, 9%) did not want courses to include collaboration under any circumstances.

Those participants who expressed an interest in collaboration were asked which online techniques they would prefer to use for collaboration. Their responses are summarized in Table 4. 10% (15) of the respondents were not familiar with the techniques. Among the remaining 90% of respondents, the most favoured technique was the discussion forum (74, 49%), followed by chat (43, 28%) and virtual classrooms (36, 24%), and finally, videoconference (31, 20%).

While participants were interested in some form of collaboration with other nurses, the respondents were divided over the role of collaboration in activities that required practice of a given technique or method. About a third of respondents (59, 38%) would prefer to complete such activities individually, while a similar number (54, 36%) would prefer to collaborate with other participants. The majority of the remaining respondents (33, 22%) would prefer to interact only with the course tutor.

Participation in the Course Forum

Trainees posted 19 messages to the course forum over the two-month life of the course. Half the messages were questions that were answered by the tutor. Five messages were about administrative issues that were resolved by the tutor. Six messages were from participants expressing their pleasure at successfully completing the course and expressing their appreciation of the way the course was structured and run. Seven messages over 15 days toward the end of the course period discussed the quality of documentation for health professionals working in issue.

DISCUSSION

Before considering the results in detail, we need to consider the sample of course participants who responded to this study. The respondents consisted of two-thirds of those who had successfully completed an online course. Their views probably represent those who successfully negotiated the online course well, but we do not know if their views are representative of those 220 nurses who commenced the course but did not complete it, or of the 105 who completed the course but did not pass it. In discussing the results, we will, therefore, consider what we can learn from participants who successfully completed a course before considering what research still needs to be done.

The strong preference expressed for online courses among those who completed the course indicates that online learning is appropriate for at least some nurses. While there was some demand for classroom-based courses and for courses that involve a blend of online and classroom discussion, such demand may be lower among participants who have been able to successfully complete a course online than others. Initiatives (such as the Italian pilot courses) that promote online courses, therefore have an important role in educating participants about the possibilities of online learning, and should be designed not just to test technology or market, but also in such a way that participants are motivated and supported to complete successfully.

Table 1. Relative advantage of online courses

Potential advantage	*n*	%
Convenience of studying at times that suit me	137	90%
Time saving	58	38%
Ease of access to information	52	34%

Table 2. Preference for print or screen

Preference	*n*	%
Print everything	59	39%
Print only what interests me	49	32%
Save the parts that interest me on my PC	39	26%
Read all on the screen	6	5%

Table 3. Preference for collaboration with other participants

Preference for collaboration	*n*	%
Yes, with pleasure	53	35%
Yes, but only if necessary	85	55%
Not under any circumstances	13	9%
No response	1	1%
Total	152	

Table 4. Preferred technologies for collaboration

Preferred technology	*n*	%
Discussion forum	74	49%
Chat	43	28%
Virtual classroom	36	24%
Videoconference	31	20%
None of these	7	5%
I am not familiar with these techniques	15	10%
Total responses	152	

Although there was little opportunity for collaborative learning in the pilot course described here, 90% of participants declared some interest in collaboration, more than a third of them without qualification. Nonetheless, more than half the participants pointed out that they would participate in collaborative learning activities only if they were "necessary." If collaborative learning is included in online courses, the reason for its inclusion and the value of participation in collaborative learning activities should be clear to the participants. We do not believe that the mere provision of a forum or "café" for discussion is sufficient to motivate the majority of participants to engage in social learning. Rather, collaborative learning activities should be incorporated in the curriculum in such a way that the relationship between the collaborative activities and the learning objectives for the course is clear.

There are also differences in preferences for forms of collaboration. Around half the participants in this study expressed an interest in participating in asynchronous discussion forums, but only a quarter expressed an interest in synchronous methods such as chat, virtual classrooms, or videoconferencing. This preference for asynchronous over synchronous communication is consistent with the participants' appreciation of online learning for the control it gives them over the time when they study. What do we do about the approximately 10% who would prefer never to engage in collaborative activities online? If, even when faced with clear learning objectives for collaborative activities, these people would not participate, the online collaborative activities of other participants would be disrupted.

These differences in preferences for collaborative learning may point to three different market segments for online CME: nurses who would prefer a traditional online course in which material is delivered directly to a learner working alone; nurses who appreciate collaborative opportunities that clearly add to the learning offered by the course, but who prefer those collaborative opportunities to use asynchronous methods that permit them to participate in courses at times that suit them; and nurses who would appreciate courses that use synchronous technologies that provide greater opportunity for collaboration. Even for this last group, we suspect that synchronous technologies would be most useful if they allowed the maximum flexibility in the timing of the student's participation in the course. For example, activities could be designed to permit participants to initiate chat and videoconferencing sessions at times that suit them. Virtual classroom sessions would compel participants to attend class (albeit at a distance) at the time the classes were offered, unless a system (such as Lectopia, http://lectopia.uwa.edu.au/) for recording and replaying the class is made available. Given the preference for asynchronous collaboration, and the range of hours in which participants prefer to study online, courses that include virtual classroom sessions should be designed to include recording and provision of any time access to the virtual classes.

There remains the issue of what type of course would be suitable for those participants who did not enroll in the online course, complete it, or pass it. Here, in the absence of further research, we can only speculate. Evidence from other courses suggests that lack of access to, or familiarity with, course technology can act as a significant barrier to participation (Buckingham, 2003). We can speculate that some potential participants did not enroll and others commenced, but did not continue simply because they were unable to overcome technological barriers (or felt they were unable to overcome them). Online learning might still be appropriate for these participants, but the introduction of online learning should include assistance with and orientation to the technology, not just the course itself. Why did 40% of those who began the course not finish it? Again, the literature offers some suggestions. If it is true that many learners are motivated by learning socially (Levy, 2007), a course that offers no more than a series of screen-based modules with optional tutor assistance and forum participation may not have been sufficiently motivating. The qualified interest in collaborative learning expressed by those who, in any case, completed the course suggests that inclusion of collaborative exercises may assist with participant motivation. Would formalized collaborative learning have improved the pass rate in the course? Again, the general literature on collaborative learning suggests that this would be the case (Rudestam & Schoenholtz-Read, 2002), but further research specifically among nurses undertaking CPE is needed to confirm the role of collaborative learning, both in motivating and improving the learning of participants.

CONCLUSION

This small study confirmed that online distance learning is a feasible, and even preferred, option for some

Italian nurses. Since all health professionals in Italy are required to participate annually in continuing professional education, online distance learning is likely to be an important—and appreciated—way to learn and to meet accreditation requirements. Moreover, many participants value social contact, both with the tutor and with fellow participants. There appear to be three market segments for online CME for nurses: nurses who prefer to study alone, those who would appreciate collaborative activities well-integrated into course design, and those who would prefer courses that include online collaboration of any kind.

How large is the demand for online distance learning in a system where some form of compulsory CPE is required for continued accreditation as a healthcare professional? While we know the preferences of those who already have successfully experienced online learning, we need to confirm that these preferences are shared by nurses who do not have similar experiences. Future research will need to include nurses who have not participated in online learning before we can find out.

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KEY TERMS

Collaborative Learning: Learning that occurs through the exchange of knowledge among learners.

CME Credits: A system for calculating the amount of CME a healthcare professional has undertaken. In many countries, or for many professional bodies, a minimum number of CME credits must be obtained in a given period to retain accreditation to practice.

Continuing Medical Education (CME): Postqualification professional development, education, and training activities undertaken by doctors, nurses, and other healthcare workers in order to keep their knowledge up to date.

Continuing Professional Education (CPE): Postqualification education undertaken by professionals to ensure they keep up to date with developments in their field.

Online Collaborative Learning: Learning that uses the Internet and Internet-enabled software tools to support social and collaborative learning among students at a distance from one another and from their instructor.

Online Learning Activities: Learning activities in which students interact with resources, or other students, or both, using the capabilities of the Internet or other computer-based communication networks.

Social Learning: Learning through social interaction with other people.