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Merging time zones: promoting international communication through videoconferencing

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Summary Nursing is viewed increasingly from an international perspective. Communication between nurses from different countries and cultures is becoming an important feature of nurses' education as well as their professional lives. While it is often not possible for nurse educators and students to visit their counterparts in other countries, it is possible for them to engage in personal contact and discussion through videoconferencing technology. An exploratory international videoconferencing case-study project, which was undertaken to enable educators to further their knowledge of videoconferencing as a teaching method, and enable students to meet in a videoconference class and discuss common issues in nursing education and practice with their counterparts in another country is presented. Two groups of registered nurse students, one undergraduate and one graduate, from the Department of Nursing, University of Scranton, Pennsylvania, USA and the School of Nursing and Midwifery, University College Dublin, Ireland were brought together for one class each. This article presents these case studies in the context of videoconferencing in higher education, describes the practical and pedagogical considerations in implementation and makes recommendations for further use of videoconferencing to foster communication and help students in different countries to develop greater international awareness of nursing practice and health care.

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Introduction

The 21st century is a time of ever-increasing global awareness and communication and this is no less true in the world of nursing education and practice (Pesut and Horton-Deutsch, 2002). Sharing nursing

knowledge and experience across national borders has led to mutual benefits, including development of universal language for classification of nursing practice (Feringa et al., 2002), global transformation of cancer care (Moore, 1998), enhanced care of families and maternal-child care (Gennaro, 2000), global development of nurse practitioners (Sheer, 2000), formulation of international guidelines for nursing education (Eberhardie, 1998), international collaboration on research projects (Mapanga et al., 1999), and greater political awareness and ability to influence health policy globally (Lee et al., 2002).

Accordingly, it is important that international communication and collaboration among nurses begins as part of their education. International student exchange programmes are now common, yet the practicalities of everyday life still constrain the hopes of many students and educators to participate in them. This can be addressed by using telecommunications technology, particularly videoconferencing, a medium already widely promoted to enhance nursing education (American Association of Colleges of Nursing, 1999). International videoconferencing is already being used to hold special interest group discussions, conduct clinical case presentations, as well as to provide education. International telecommunication allows students and educators to engage in personal contact and discussion across global time zones and enhance their international awareness (Kirkpatrick and Brown, 1999). Nurses in different countries have the opportunity to become sensitive to and appreciate each others' values and beliefs as well as their ways of living and solving education and practice problems.

Little has been published about the use of videoconferencing to bring together nursing students from different countries. The aim of this article is to describe two international videoconference class case studies which brought together students from the Department of Nursing, University of Scranton, USA and the School of Nursing and Midwifery, University College Dublin, National University of Ireland. This includes description of the practical and pedagogical aspects of the classes, their implementation, analysis of the experiences of students and educators and recommendations for future international videoconference classes.

International collaboration

International collaboration in nursing dates back to the mid-19th century when Irish nurses worked

with their British counterparts at the Crimean war of 1854–1856 and shared their basic nursing principles, which were to become the foundation of modern nursing (Bridgeman, 1854–1856; Meehan, 2003; Florence Nightingale to Clare Moore, 25 April 1856 & 21 October 1863). It was not until the end of the 19th century that international collaboration among nurses was formally established, led by British nurse Ethel Bedford Fenwick. In 1899, Fenwick, together with nursing leaders from several countries, founded the International Council of Nurses. At a Council meeting in Buffalo, New York in 1901, Fenwick proposed that nurses could further their efforts toward the high purposes of providing efficient care for the sick, helping to solve health problems at local, national and international levels, as well as securing the honour and interests of the nursing profession through international communication and collaboration (Lynaugh, 1999). Throughout the 20th century, nurses recognised the benefits of international communication and collaboration in promoting public health (Kalnins, 1999). 'Nurses of all nations' continued to work together for these purposes, despite catastrophic wars, wide-spread political and economic injustice and racial and religious conflict (Lynaugh and Brush, 1999, p. 3). Today, nurses are further consolidating their international collaborative relationships. Physical travel is enhanced by virtual travel. International educational alliances seek to make every nursing classroom a global classroom (Sullivan and Gray, 2002). Videoconferencing plays a significant role in this process.

Background

Videoconferencing is a two-way video, audio, and sometimes data communication process across long distances between two or more people at different locations (Motamedi, 2001). Participants see and hear one another during the interaction. Videoconferencing requires a wide array of equipment with signals transmitted by telephone, fibre optic cables, satellites or microwave systems. Other media such as videos, graphics, photos and computer software can also be used to support various learning activities.

While a number of nursing programmes embrace videoconferencing for international collaboration, research has been limited within both nursing and the boarded higher education community. In general, the studies have been of a small-scale, descriptive or qualitative in nature, and conducted by the teacher with his or her own students without

control groups. Research has focused on the practical advantages of videoconferencing rather than the quality of teaching and learning (Knipe and Lee, 2002).

A number of case studies illustrate the use of videoconferencing within a nursing program (Chandler and Hanrahan, 2000; Zalon, 2000), continuing education in nursing (Emde, 2003) different disciplines (Alexander et al., 1999) as well as cross-national audiences in different disciplines (Townley et al., 2002). They provide lessons in planning for videoconferencing, as well as considerations for a cross-national audience.

There are several reports of international collaboration in nursing using videoconferencing. Kim and Vetter (1999) found that Japanese students enrolled in a distance education baccalaureate nursing course/module offered by a university in the United States of America (USA) were satisfied with their achievement of course/module goals, opportunities to learn about nursing in the USA and learn English. Aside from the language barrier, which was accommodated with simultaneous translators, the Japanese students were unaccustomed to public speaking or responding to the instructor's questions. Thus, it is important to not only examine students' concerns about the technology, but also differences in classroom behaviour. In a Norwegian–Canadian collaborative initiative for graduate students that delivered nursing leadership content in a case-study using computer-conferencing supplemented with a final videoconference, Iwasiw et al. (2000) found that the students greatly valued the videoconferencing experience. They developed a bond with their international counterparts and the quality of the discussion between the students was equal or superior to ordinary classroom discussion. These findings highlight the importance of interpersonal communications in distance education.

Reports of using videoconferencing technology have generally been positive. A university in Georgia, USA and one in the UK collaborated on the delivery of a module on women's family-centred health care systems (Waddell et al., 1999). Because the evaluations were positive, a second module on aging was developed (Sumners and Tronsgard, 1999). MacIntosh (2001) found that for registered nurses enrolled in a Canadian baccalaureate program using videoconferencing technology, connecting with others, organisation, negative influences, and personal factors were important to learning. In a Swedish–United States collaboration, reflective journaling, drama in education, photolanguage, and off-air meeting discussions resulted in positive reactions to videoconferencing

technology (Lepp et al., 2003). DeBourgh (2003) found that good pedagogy is important to students' perceived satisfaction with distance education. However, Fetzer (2000) found that students in a traditional classroom rated teaching effectiveness significantly higher than those using videoconferencing.

Ellis (1992) examined the effect of students' perceptions of proxemic distance, how the human brain interprets physical nearness when viewing a screen image of a person in videoconferencing. Various camera angles provided different proxemic distances in relation to the 'action zone', a section of the classroom where students would expect more interaction with the teacher. The nearest group of students had the most favourable attitudes. Hence, proxemic distance is an important planning consideration.

These study findings and recommendations were drawn upon in planning this project, together with the previous videoconferencing experiences of the first author. The limited use of videoconferencing as a learning method in international collaboration has been attributed to the lack of understanding between cross-cultural settings and significantly different instructional strategies (Telg, 1996). However, videoconferencing warrants further use to facilitate communication, collaborative learning between educators and students of different countries and the development of greater international awareness of nursing practice and health care provided that planning is done in terms of students' capabilities and perspectives.

Videoconferencing case studies

Two groups of registered nurse students, one undergraduate and one graduate, from the Department of Nursing, University of Scranton, Pennsylvania, USA and the School of Nursing and Midwifery, University College Dublin, National University of Ireland were bought together for one case study each. The broad aims were for the nurse educators to further their videoconferencing knowledge, for students to participate in an international videoconference class, meeting and talking with their counterparts in the other country, and to discuss common nursing education and practice issues.

Videoconference preparation

Planning included the educators committing to the work involved; assessment of university telecom-

munications resources and management of technical details; comparing educational cultures, types of nursing programmes and students, and class times; preparation of classes and preparation of students. Communication took place by e-mail and telephone.

Compatible videoconferencing equipment, the VTEL system using telephone lines for transmission, and good technical support was available at both universities. The support staff co-ordinated the technical aspects, testing equipment and conducting trial runs of connections prior to the videoconferences. They ensured that the students' images would appear as close as possible to the counterpart students.

Class preparation

Both authors taught nursing issues and theories for practice to registered nurse undergraduate students. At the University of Scranton, seven students enrolled in a registered nurse-to-bachelors degree programme participated as part of a scheduled class. At University College Dublin, seven students enrolled in specialist higher diploma programmes participated outside their scheduled classes. They had between 2 and 20 years' experience in various acute care and community health specialist practice areas.

Both authors also taught master's level students involved in research. At the University of Scranton, 11 students participated as part of a scheduled research class. At University College Dublin, six students engaged in research participated outside their scheduled classes. Students' research interests reflected their clinical specialisation as well as nursing management and education. Students were prepared regarding technical details and videoconferencing etiquette as described by Zalon (2000). Names of students, professional interests and clinical backgrounds were exchanged in advance.

Pedagogical considerations

Students were included in the development of objectives. The undergraduates planned to discuss the use of nursing conceptual models for practice and their views on nursing research. However, their over-riding common interest was registered nurses' engagement in higher education in nursing, how their counterparts managed this and what they thought about it. The groups' immense curiosity about one another was captured in the class title, 'Perspectives and experiences of engaging in professional development in nursing'. The class objectives were to: (1) identify pathways to becoming a professional nurse in each country, (2) describe selected issues related to engaging in university education, (3) identify similarities and differences of students' views of learning about research and conceptual models of nursing, and (4) discuss advantages and limitations of an international videoconference class. Class content was reflected in questions students were given to guide preparation, as shown in Table 1.

The graduate students' common concerns were captured in the class title, 'Using research findings to guide practice'. Their objectives included: (1) discuss evidence-based practice and research utilisation types, (2) discuss research utilisation enhancing factors, (3) discuss research utilisation barriers, and (4) compare occurrences of enhancing factors and barriers. In preparation, students read an article about the concept of research utilisation (Estabrooks, 1999) and two research reports of nurses' perceptions of barriers to research utilisation (Funk et al., 1991; Retsas, 2000). Their preparation was also guided by questions for consideration in relation to their own country, shown in Table 2.

Videoconference classes

The first 10 min were given to introductions. While the surface impression of student interactions was

Table 1 Questions related to perspectives and experiences of engaging in professional development in nursing

Questions

1. Briefly, what is the history of nursing education in your country?
2. What are the pathways to becoming a professional nurse in your country?
3. Why do you believe it is important for professional nurses to have a university education?
4. How affordable is university education in your country and is funding assistance available?
5. What are some of the issues that arise in balancing academic work and with personal and employment responsibilities?
6. What are some of the advantages and difficulties of beginning to learn about nursing research?
7. What are some of the advantages and difficulties of beginning to learn about conceptual models of nursing?

Table 2 Questions for cross-cultural comparisons of research utilisation

Article	Questions
Estabrooks, C.A., 1999. The conceptual structure of research utilization. <i>Research in Nursing and Health</i> 22, pp. 203–216.	<ol style="list-style-type: none"> 1. Which of the types of research utilisation is most commonly used in your country? 2. At the present stage in our development and promotion of research utilisation in your country, which type of utilisation or combinations of types would it be most useful to encourage? 3. Which type is most feasible in your country? 4. Which would be most effective in improving patient care?
Funk, S., Champagne, M., Wiese, R., Tornquist, E., 1991. Barriers to using research findings in practice. <i>Applied Nursing Research</i> , 4, pp. 90–95.	<ol style="list-style-type: none"> 1. Based on your own experience, are these findings similar to what you would expect to find in your country today? 2. Do you think there would be different findings in your country? If so, how would they be different and why? If not, why not? 3. Which barriers are most amenable to change in your country?
Restas, A., 2002. Barriers to using research evidence in nursing practice. <i>Journal of Advanced Nursing</i> , 31, pp. 599–606.	<ol style="list-style-type: none"> 1. How do you think the ratings for the Barriers to Research Utilisation Scale would look if the study was replicated in your country?

of pleased anticipation and interest, students later reported some underlying anxiety. Aside from apprehension about appearing 'on camera', students wondered what 'they' would be like and will 'we' be able to measure up. But, students' pre-determined ideas and imaginings about their counterparts were soon overcome by the marvel of actually coming face-to-face with them.

The 40 min given to content passed very quickly. Following some initial awkwardness caused by the brief time lag between the transmission and reception of sound, discussion flowed easily and was moderated by the authors so that all students participated and most of the content was covered. Each student was responsible for an answer to one or more of the questions. This helped students to participate more or less equally, decreasing any feelings of camera awkwardness, and discouraging more vocal students from dominating the discussion. The final 10 min were given to summary, conclusions, and goodbyes.

Discussion

The videoconferences were recorded. In addition, students provided verbal and written assessments of their experiences of the 'global nursing classroom'. Themes included enthusiasm for the idea of the project and their role in it, anxiety about their performance and some initial uncertainty with the use of videoconferencing technology. Without exception, the students felt professionally stimulated and uplifted by the overall experi-

ence. For the undergraduate class, questions 1 through 5 in Table 1 stimulated lively discussion and comparisons. A bond of understanding was created especially in relation to discussion about how they strove to balance academic work with family and workplace responsibilities. They agreed on the need for higher education in nursing, as well as on inherent challenges faced in striving to come to terms with their transition to the university student role. They also shared hesitancy to discuss questions 6 and 7 in Table 1. For both groups, these were relatively new concepts that they did not yet have the confidence to discuss very openly. Over the hour of the class, most students perceived their imagined differences to fade into the background. This development of shared understanding supports the findings of Iwasiw et al. (2000) whose Norwegian and Canadian students reported that a similar sense of bonding enhanced their videoconference class experience. Several of the USA and Irish students indicated in their course evaluations that the class was the highlight of their semester.

In the master's class, the readings and questions stimulated the students' thinking about research utilisation. They quickly engaged in a wide-ranging and comparative discussion about barriers to research utilisation in clinical practice. The students agreed the greatest barrier was that many nurses in practice and management lacked a working knowledge of scientific research and critique. Students from both countries believed that nursing education programmes did not sufficiently emphasise research critique. Other barriers discussed were time related work pressures due to the nursing shortage

and nurse managers' frequent lack of expectation or recognition of research-based practice. The latter led to debate about the relationship between management and leadership in relation to research utilisation. It was finally agreed that even though managers were more likely to have the authority to facilitate the necessary change associated with research utilisation, all nurses were responsible for leadership in this area. As well as comparing their experiences participating in research-based changes in practice, students sought advice in relation to their own research. They shared literature references and ideas on solving data collection problems. Following the class, some students corresponded by e-mail. Most reported that the class had stimulated their professional self-confidence. One student attributed her successful job interview to the videoconference class.

Students' anxiety about their performance during the videoconference was limited mainly to the undergraduate class, with both the USA and Irish students being initially somewhat reserved. Prior to the class, the Irish students expressed concern about how they would compare with the USA students, who they perceived as very knowledgeable and articulate about research and nursing conceptual models. Consequently, they put great effort into preparation. Students' reserve continued for about 15 min into the class. As they realised that they were similar in knowledge levels and experiences, they relaxed and fully engaged in discussion. In the future, communication via e-mail or chat rooms could be used in advance. Any anxiety amongst the master's students about their performance in their class was minimal. It was not evident during class and did not feature in their reports.

Initial uncertainty with the videoconferencing technology was experienced by both groups of students. Even though students were prepared regarding the technical details and etiquette, the time lag between the transmission and reception of sound and the use of microphones required some adjustment.

The facilities influenced the atmosphere and convenience of the classes. The Irish students used a videoconference studio and while this provided for bright and clear visual transmission, it detracted from the classroom atmosphere and its location was inconvenient. The classroom used by the USA students for the first class was subdued in lighting and colour and limited students' perceived physical nearness and personal closeness to the Irish students. These factors influenced students' perceptions of proxemic distance and support Ellis's (1992) findings.

Conclusions and recommendations

This project substantiates suggestions in the research literature (Iwasiw et al., 2000; Kim and Vetter, 1999; Lepp et al., 2003) that it is entirely feasible to use videoconferencing to bring together in one 'classroom' students in different countries, separated widely by distance and time zones. Students' ability to see and hear one another was important for developing feelings of warmth and engagement and their professional camaraderie. Students had taken an initial step toward future international collaboration. These factors suggest that nursing programmes should have at least one classroom with facilities for international videoconferencing.

Problems identified by Telg (1996) which have limited the use of videoconferencing for international communication can be overcome if educators make a special effort to plan and co-ordinate such a project. Flexibility is required for a successful outcome and a positive experience for all. Consideration needs to be given to differences in the students' comfort level with the medium and cultural differences in classroom behaviour as recommended by Kim and Vetter (1999). This project is similar to team teaching but requires more forethought and planning, especially if educators do not know one another well. Planning by telephone and e-mail could be used to develop a close professional relationship. The additional effort is well repaid by the satisfaction of teaching at an international level and seeing the benefits that accrue to students. Videoconferencing for a single class or a portion of a module overcomes the complexities of synchronising learning activities of students in programmes with different curricula while providing students with a global experience. It also enables educators to test the logistics and pedagogical strategies.

As more programmes use videoconferencing on a consistent basis, educators could plan multi-site research studies. The development of instruments by Chiou and Chung (2003) and DeBourgh (2003) to evaluate videoconferencing learning provides a foundation for these endeavours.

In a global society all nurses need to be aware of their colleagues and understand health care needs and issues at local, national and global levels. Using videoconferencing to support international learning by facilitating social interaction about professional issues satisfies objectives in multiple arenas and provides a basis for future endeavours. This project has demonstrated that videoconferencing can be an effective technique for facilitating meaningful

international communication and can help students to develop greater awareness of nursing in other countries and cultures.

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