A school of nursing in New Zealand transferred a course from traditional to online delivery. This article reports on staff and student experience, and achievement levels.

Learning the lessons of moving education online

In this article...

- How a course was moved from classroom to online delivery
- Staff and student experience and achievement
- Recommendations for future transitions to online course

Background

The Western Institute of Technology at Taranaki (WITT) is a government-owned higher education institution in Taranaki, a predominantly rural province of New Zealand. Its school of nursing is the region’s sole provider of a three-year bachelor of nursing (BN) programme, with an intake of around 50 students per year.

The population of Taranaki is dispersed across a wide geographical area, yet most of WITT’s programmes, including the BN, are delivered in the northern coastal city of New Plymouth. Increasingly, flexible delivery of academic programmes is seen as vital to promoting access to higher education, not only in Taranaki but also across New Zealand and indeed internationally.

Aim

The study had two aims:

» To compare the level of achievement reached by students completing the online programme with that of the previous year’s cohort, who had participated in classroom delivery;

» To evaluate both the students’ and the lecturer’s experiences of the transition and the differences between the two types of course delivery.

Literature review

A literature review using the Proquest and ERIC databases with key words found 44 articles that discussed online instruction and learning for nurses.

Reynolds et al (2008) stated that the traditional classroom setting has hardly changed since Victorian times and has a tendency towards dry, unimaginative and textbook-based teaching. They suggested that transformation to online and blended

Keywords: Online learning/nursing research/mixed methods

● This article has been double-blind peer reviewed

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Abstract

Education providers across the world are transferring course delivery from face-to-face to online methods.

This article reports on a New Zealand college’s experience of transferring a course on nursing research to online delivery, and on an evaluation of the initiative from the perspective of student experiences and achievements.

The results and discussion contain lessons for any education providers considering moving courses to online delivery.

Online learning has a range of potential benefits for both students and education providers. It is particularly useful for providers that cater for student nurses who are dispersed across a wide geographical area.

This article explores the experiences of students and staff as a bachelor of nursing second-year nursing research course was changed from a classroom-based course to an online course in New Zealand.

The course was jointly developed by: an instructional online learning designer and communications tutor; an information technology support and flexi-learning coordinator; and the senior nursing lecturer responsible for running the course.

5 key points

1. Many assumptions about online delivery are not borne out in practice
2. Students need to be prepared for online study; this includes clarity about what is expected and required of them
3. Course designers should explore if online learning allows things to be done differently
4. Existing tutors should be involved in online course design
5. Online courses should be underpinned with sound learning and teaching principles

Students learnt when they wanted
learning would allow greater flexibility for educators and students to work in their preferred style and at their own pace.

Ayala (2009) stated that research to date had concentrated on relative effectiveness issues, such as learning outcomes and satisfaction levels between face-to-face and online delivery, and questioned whether this comparison was appropriate or useful.

This led us to Russell (1999), who published a seminal text titled *The No Significant Difference Phenomenon*, which stated unequivocally that there was no significant difference in the grades and outcome results between traditional face-to-face and online delivery of the same course material; these findings were confirmed by Hauck (2006) and Summers et al (2005) among others. Two dissenting opinions to Russell were noted from Lin et al (2007) and Johnson et al (2002), where students taking online courses did better than those following traditional face-to-face courses.

Without a strong evidence base for moving to online delivery to improve academic achievement, what evidence was there to support this significant change for the small team in WITT’s school of nursing?

Hegarty and Stewart (2007), who reported on their experiences at Otago Polytechnic with undergraduate and postgraduate courses from 1996 to 2005, found that interactivity and student engagement was necessary to get the best out of the students. In addition to technical support, which was deemed essential, students had to engage actively with the content and with each other in more self-directed ways. For some, this represented a quantum shift in their approach to learning.

Summers et al (2005) made the point that technology must serve the subject matter, not the other way round. They argued that online learning must help students to develop higher-level thinking skills and evaluate their own understanding. To enable them to achieve this, they need to share ideas and problems using interactive and collaborative online formats. These researchers found that students who did poorly were those who had not developed appropriate strategies for self-regulation, and reminded online course developers that there will always be students who are not comfortable with a learner-centred approach.

**Method**

We adapted the core course text (Polit and Beck, 2006) and its associated face-to-face classroom materials for the online format, dividing the course into a series of eight topics that progressively built on each other. Each topic had learning resources cited from the text, web-linked resources, and a series of tasks and learning activities (formative assessments) for students to undertake at their own pace.

The tasks, but not the results of the activities, were submitted to the tutor for marking and grading, then returned to the student. The course concluded with two summative assessments: the critique of a journal article; and the writing of a research proposal.

The two summative assessments for this course were the same for both modes of delivery. The online course was designed so that students could access it whenever was convenient to them. We envisaged an advantage of this mode to be that students would be free to study as they wished or were able.

The formative assessments were submitted online for grading and returning to the students by the tutor. However, the summative assessments had to be submitted in hard copy for marking by the tutor; these were structured to assess all the course learning outcomes (Box 1).

To determine students’ attitudes to the subject of nursing research and the move to online delivery, we developed two self-report questionnaires (which were subjected to peer review). We asked the final (2008) cohort of students participating in classroom delivery to fill in a retrospective questionnaire. The cohort comprised 24 students, of whom three declined the invitation to take part in the study so 21 were sent questionnaires by mail to complete; 13 were returned (61.9%). We distributed a prospective questionnaire, which encouraged us to assess attitudes to the subject of nursing research and to undertaking online learning, to the 2009 cohort, which comprised 21 students; 19 questionnaires were returned (90.4%). The associate researcher undertook a thematic analysis of the questionnaire responses and this was peer reviewed by a third colleague.

Quantitative analysis compared the 2009 online course results with those of the 2008 face-to-face delivery.

**Limitations of the study**

We considered holding individual interviews with students, but time constraints meant this was not possible. We carried out a retrospective audit of the results from the 2008 course comparing results with attendance, age of the student and other factors. However, much of the sociological detail that might have had a bearing on the outcome results of the students was not obtained, so this part of the proposed study was not completed.

**Ethical considerations**

There was no anticipated detriment to any participant who agreed to be involved in this study. Each prospective participant was given a letter explaining and inviting them to complete and return an enclosed questionnaire. Completion and return of the questionnaire was taken to indicate implied consent.

The student participants were assured anonymity and there was no identifying information on the questionnaires. While we recognised that participants would be known to one another, the privacy of individuals and data arising from the study was treated as confidential.

Students were invited to contact the lead researcher if they wished to discuss the study before participating, but none did so.

**Results**

The first summative assessment carried a weighting of 40% towards the final course grade and the second a 60% weighting. An aggregated result of 50% (grade C) was required to pass the course.

Before considering the overall course grade, it is worth considering individual assessment results. Note that the two students in the online cohort who obtained D/E results withdrew part way through the course. However, for accuracy, they remain in the tables of course results.

**BOX 1. COURSE LEARNING OUTCOMES**

- To understand the purpose and role of nursing research
- To understand the legal and ethical implications of undertaking research
- To have a practical understanding of the research process, including how to generate a research idea, plan a research project, undertake a literature review, collect data and analyse the data produced
- To be able to differentiate and evaluate different research methodologies
- To be able to access, understand and accurately reference various sources of information and produce written material to an acceptable academic standard
- To be able to evaluate the reliability and validity of peer-reviewed research

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In the first assessment (the critique), results were mixed. In the face-to-face cohort, 56% obtained a C grade and 24% a B grade while, in the online cohort, 38% obtained a C grade and 38% a B grade. Of the face-to-face group, 20% obtained A grades, compared with 14.2% in the online cohort (Table 1).

In the second assessment (research proposal) the results overall were poorer for the online students than the classroom students. Of the online cohort, 24% achieved a B grade, compared with 40% learning in the classroom. Significantly, 62% of the online group obtained a C grade, compared with 40% in the face-to-face group.

With reference to Russell (1999), a comparative review of the overall course grades concluded there was “no significant difference” between the two cohorts. There were no A-grade passes in either, with total pass rates being 92% for the face-to-face course and 90.4% for the online course.

While these results might seem to be discouraging, we believe that in conjunction with the qualitative analysis of students’ comments and with regard to the findings of Lim et al (2007) and Johnson et al (2002), much can be done to improve student engagement, participation and motivation, and therefore attainment, utilising online delivery with future cohorts. These lessons are universally applicable across all higher education institutions providing undergraduate nursing education.

**Quantitative analysis**

There were 15 questions in the questionnaire for face-to-face students and 29 in the online student questionnaire. All were answered on a 5-point Likert scale, with 1 being the least or worse response and 5 being the best response that could be sought. A full detailed analysis of the answers for each question on the questionnaires may be requested from the authors.

**Face-to-face course:** These students clearly identified that having a tutor in the class with them was the preferred way of learning. This is not surprising since all their courses, over the two years they had been in the programme, had been delivered in this manner. Lectures, tutorials and PowerPoint presentations all scored heavily in favour as the most helpful learning resources.

**Online course:** Significantly, with reference to Wharrad et al (2005), 84% of the students in this cohort had no previous experience of online learning; the tutorial staff should have been prepared for this but were not. This probably explains many of the less than satisfactory responses obtained from these students. However, having undertaken the course, over 50% of the students saw that knowledge of nursing research would be essential for their future nursing practice. It could be argued that the mode of learning (face-to-face or online) is irrelevant; we believe that because it is so important to future nursing practice, the mode of learning is indeed important.

We had believed the ability to access the course from home and on any available computer as and when the student desired would be important to students. This was partly achieved, with only 47% completing all the formative assessments; while fewer than half the class understood the exercises, they did not access the tutor for clarification of the task required. The results from the questionnaire showed that group work and accessing of fellow students was poorly undertaken. We believe this is more a reflection on a lack of motivation to learn rather than a refusal to engage with fellow students.

This is a new way of engaging with materials for these learners. WITT’s rationale for switching from face-to-face to online learning and choosing the nursing research course was not communicated to tutorial staff in any meaningful way except by directive – “this will be done” – so it could not be communicated to the students either. The results of lack of engagement with the material were easy to see.

**Qualitative analysis**

Students could include free text comments in their questionnaire responses. An associate researcher undertook a thematic analysis of comments and this was peer reviewed by an external colleague. Eight students of the face-to-face course (n=25) and 13 from the online cohort (n=21) made comments. Using a three-pass analysis, these were grouped into 10 themes. The most significant findings were:

- Students from the face-to-face cohort thought that face-to-face delivery was “best” or “useful” and rated a high to moderate satisfaction rating. Those in the online cohort valued the face-to-face tutorial component of their course.
- The lecturer was considered “good”, “passionate” or “knowledgeable” by a high proportion of the classes.
- Of concern was the high response for both cohorts that the course content was “difficult”, “boring”, or its “relevance to practice was unclear”.
- Students’ expectations of the course were “unclear” or “not well prepared”, or they felt they received “poor guidance”.

These tables compare grades of students learning in a classroom with those learning online.

### Table 1. First Assessment Results

<table>
<thead>
<tr>
<th>Grade</th>
<th>2008 (Face-to-face)</th>
<th>2009 (Online)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>A-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>B+</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B+</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>C+</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>C-</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>D/E</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>25</td>
<td>21</td>
</tr>
</tbody>
</table>

### Table 2. Second Assessment Results

<table>
<thead>
<tr>
<th>Grade</th>
<th>2008 (Face-to-face)</th>
<th>2009 (Online)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>-</td>
<td>8%</td>
</tr>
<tr>
<td>A</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>B+</td>
<td>1</td>
<td>40%</td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>B+</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>C+</td>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>C-</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>D/E</td>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>Totals</td>
<td>25</td>
<td>21</td>
</tr>
</tbody>
</table>

### Table 3. Overall Course Grades

<table>
<thead>
<tr>
<th>Grade</th>
<th>2008 (Face-to-face)</th>
<th>2009 (Online)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>-</td>
<td>Nil</td>
</tr>
<tr>
<td>A</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B+</td>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>B+</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>C+</td>
<td>7</td>
<td>52%</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>C-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>D/E</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>Totals</td>
<td>25</td>
<td>21</td>
</tr>
</tbody>
</table>

In the face-to-face group, 56% obtained a C grade and 24% a B grade while, in the online cohort, 38% obtained a C grade and 38% a B grade. Of the face-to-face group, 20% obtained A grades, compared with 14.2% in the online group (Table 1).

Of concern was the high response for both cohorts that the course content was “difficult”, “boring”, or its “relevance to practice was unclear”.

Students’ expectations of the course were “unclear” or “not well prepared”, or they felt they received “poor guidance”.
Course delivery and assessment methods received a moderate approval rating.

Discussion
Three students stated that they saw no value in having a knowledge of nursing research for their future nursing practice. This raised legitimate questions as to how the course had failed to engage these students and these questions were explored in subsequent course development.

A number of procedural matters were explored and these were addressed in developing the course and preparing students for 2010 delivery. These are discussed later in this article.

The online course materials were divided into eight study topics with a range of tasks, activities and formative assessments. Students were given an introduction to the course in a computer suite in 2009; however, because they were given only three days’ notice, only 16 of the 21 were able to attend.

The course was 15 weeks long, time-tabled around mental health practice placements. Students were each allocated five classroom tutorials, held at the same time and place each week, starting in week 10. However, they were given no clear direction or requirements as to when to begin studying course materials and some did not do so until week 10, when attending the first classroom tutorial. This was clearly insufficient time in which to complete all the activities and formative assessments and acquire the knowledge to undertake the summative assessments confidently.

Tutorial staff concluded that the information given to students before they began the online course was deficient; however, as no time had been allowed with the students as a face-to-face group before this, we could have expected no other result. Students need in-depth instruction and introduction to online courses before they begin.

Formative assessments were submitted irregularly, starting towards the end of week 2 and peaking in week 10. Only seven of students completed the 36 formative assessments; this was in all probability due to the huge number of assignments that led to overload and lack of engagement by many students. One student completed only the first two formative assessments, while another only completed four. However, both these students successfully completed the summative assessments and received an overall pass grade. Teaching staff have discussed allocating a percentage of the overall course grade for completion of the formative assessments.

The irregular pattern of assessment submission, complexity of the critique marking (the tutor was required to critique students’ articles before assessing their work – 19 assessments, 19 articles) and variable attendance at the tutorial sessions (from no students at one session to 10 at another) resulted in the tutor spending 110 hours on a course with an allocation of 50 hours’ tutor time.

The major fault with the programme’s design was that the face-to-face tutor was not involved in the initial online course design; when she was involved much later in the process, it was only to verify that the material transferred from her classroom delivery had been interpreted accurately. The developers of online courses should take the opportunity to use the scope offered by this mode of delivery to examine and implement new ways of doing things.

This was not done in this transition from face-to-face to online and was a missed opportunity.

Recommendations
In developing the course for delivery in 2010 and beyond, the lead tutor made the following recommendations:

- Hold a compulsory computer suite introduction with all enrolled students to familiarise them with the online platform and course layout; allocate them to tutorial groups, to support the development of a community of online learners.
- Hold a dedicated session in tutorial group operation and leadership; this should include issues such as group members agreeing a time in which they are all online to work together on formative assessment tasks.
- Reduce the task content of each topic so all take a similar time to complete and each requires the minimum number of assignments to enable the topic to be learnt and assessed.
- State a clear expectation of the start date and a close-off period for each topic in which formative assessments may be submitted for review.
- Consider appointing an external partner to assist formative activities or to be involved with the marking of the summative assessments.
- Review the summative assessments as undertaken during the past two years.

Conclusion
The transition of this course from classroom to online delivery has been a challenge and the development team have learnt much from it.

While this may be a worldwide trend in higher education, the rationale for moving any subject from face-to-face delivery to online mode must be examined. Many assumptions about online delivery are not borne out in practice and, unless institutions take the time to prepare staff and students for this change, they will experience similar problems to those we encountered.

A key step is to establish frameworks and sound underpinning learning and teaching principles. Time and consideration should be given to preparing and supporting students, setting clear expectations and transparent requirements, to promote a comfortable transition for students and teaching staff.

Successful future course delivery will require ongoing evaluation and development and we are confident that acting on these findings and recommendations will improve student satisfaction. Furthermore, the improved experience of students and increasingly flexible and adaptive delivery may improve academic performance. Staff learning from this experience will assist in developing increasingly flexible courses in all areas.

References
Reynolds PA et al (2008) Remember the days in the old school yard: from lectures to online learning. British Dental Journal; 204: 8, 447-453.