

INSTRUCTIONAL METHODS AND TECHNIQUES

From Systems to Tissues: A Revolution in Learning in Perioperative Education

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ABSTRACT **Aim:** *This paper presents the results of an exploratory project undertaken to evaluate the change to teaching and learning of surgical specialties in the Postgraduate Diploma in Advanced Nursing (Perioperative) conducted at La Trobe University, Victoria, Australia.*

Background: *The teaching of perioperative nursing practices has traditionally been based on the medical model of surgical specializations, using information transmission as the main teaching approach. It has become clear to perioperative educators that it is possible to look at the basic theoretical principles involved in the teaching of surgical interventions from a different perspective.*

Method: *This project is an exploratory descriptive study that employed a qualitative approach, using a reflective approach to teaching, results of a focus group discussion and subject assessment as data. Research Ethics Committee protocols were followed. A version of nominal group technique was used for the focus group interview.*

Outcomes: *The restructure of this subject shows potential in bringing about a conceptual shift in nurse education in three areas: (1) Organizational principle or curriculum structure: from content focus to theoretical principles; (2) Learning mode: student involvement from passive student to professional decision maker; (3) Teaching strategy: from teacher-focused strategy with intentions to transmit information to a student-focused strategy aimed at students changing their conceptions.*

Conclusion: *This study suggests that perioperative students are able to demonstrate critical thinking and apply principles of surgical technique across a range of specialty areas without having participated in the particular surgery beforehand.*

KEYWORDS *Perioperative, nurse education, descriptive, evaluation, surgical specialty.*

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Introduction

There has been a lingering reluctance within nursing education to move away from traditional teaching approaches. Consequently this has prevented recent insights in the field of higher education from being applied in the teaching of nursing students (Ruby, 1999; McAllister, 2001a, b). One such insight focuses on the approaches to learning tasks that students decide to use (Marton & Säljö, 1976a, b; Biggs & Moore, 1991; Ramsden, 1992). Students make the decision to use one of a range of approaches to learning (surface, deep) in relation to how they perceive a range of factors in the learning situation (Prosser & Trigwell, 1999). A deep approach is desirable, as it is closely related to high quality learning outcomes. A surface approach is related to lower quality learning outcomes (Entwistle & Ramsden, 1983).

Student learning outcomes have also been observed to vary according to the university teachers' perceptions of and approach to teaching (Dall'Alba, 1991; Martin & Balla, 1991; Samuelowicz & Bain, 1992; Prosser *et al.*, 1994). A student-focused or a teacher-focused strategy may be chosen. Teachers choosing a student-focused approach assume that their students are actively engaged in their own learning and are more likely to promote in their students the deep approaches to learning (Prosser & Trigwell, 1999). University teachers also can be seen as teaching with a range of intentions: to transmit information, to enable their students to acquire the concepts of the discipline, to develop their students' conceptions or to change their students' conceptions.

Context of the study

The traditional approach to nurse education has been one of memorization of increasing amounts of content backed up by extensive clinical experience, so it can be absorbed and understood fully. The teaching of surgical specialties in perioperative nursing education in Australia has followed a medical model with divisions of surgical specializations, using information transmission as the main teaching approach. Classroom teaching focused on prescriptive knowledge related to a specific specialization, such as gynaecological surgery. A teaching session would present the required instrumentation and surgical technique for each gynaecological procedure (Richardson-Tench, 2001).

Following a review of the Postgraduate Diploma in Perioperative Nursing, a working party comprising academic staff and clinical educators was formed to revise the surgical specialty subject. Discussion primarily centred on the desire to move from the traditional content-driven, teacher-focused, rote-learning mode of teaching to that of principles of surgical interventions. The current mode of teaching was considered problematic, as students appeared unable to transfer principles of surgical intervention from one procedure to another.

The working party believed it is possible to look at theoretical principles of surgical interventions from an anatomical perspective of tissues. For example, there are similarities in the way a surgeon exposes, cuts, and sutures blood vessels, ureters and bowel. These tubular structures are found in different anatomical organ systems yet there are underlying principles that they have in common. Likewise, the ways the surgeon deals with or handles bone have similarities whether it is a femur in orthopaedic surgery or the skull in neurosurgery.

It was acknowledged that it was impossible for all perioperative students to gain sufficient exposure to and experience in all operative procedures. Consequently the focus on content had to shift to a focus on principles (Biggs, 2000). The belief was that a more critical approach to knowledge development would provide the perioperative nurse with the conceptual skills to apply the principles of working with one type of tissue in a surgical specialization to the same tissue in a different surgical context or specialization. This meant that the intention was now that students should change their conceptions and actively relate what they learnt to the principles that governed this area, rather than receive more information.

The subject was developed into a number of teaching sessions involving principles of surgical intervention specific to different types of tissue and incorporating a framework for knowledge development of the domains of nursing: person, health, nursing and environment.

The teaching format

The subject was conducted in second semester. In first semester the students completed a pre-requisite subject that provided the conceptual basis for perioperative nursing practice.

The teaching of the subject commenced with an introduction to the role of the nurse in specialty surgery and a presentation of the conceptual framework to be used for the remainder of the subject. The remaining sessions were timetabled to flow in a logical and sequential manner. The curriculum structure encompassed the central domains of nursing as a framework in which to structure teaching and learning with the domain of health accommodated as surgical intervention. The domain of nurse identified required knowledge needed for the perioperative nurse and incorporated areas, such as anatomy and physiology, specific to the identified tissue, haemostasis and principles of infection control.

In the second session a comparison of vascular, gastro-intestinal and genito-urinary surgeries was used as an illustration of the principles of surgery for significant tubular structures. Each teaching session provided a rationale for surgery, issues of environment, person, nurse and the sequence of surgery. The sessions were followed by perioperative considerations for specific surgeries related to the tissue in conjunction with an application to the clinical area. A

clinical nurse specialist from the operating room suite conducted these. The remainder of the teaching sessions addressed surgery of soft tissues, viscera, glands, bone and integument.

The conceptual shift from content focus to theoretical principles was reinforced in each teaching session. Interactive participation with clinical scenarios was used to highlight a particular aspect as required. To aid the process of learning, applying knowledge and making decisions, students presented a case study as part of the subject assessment. They detailed the care of a patient undergoing a specific surgery, drawing on the principles of surgical intervention identified within the teaching sessions.

The restructure of this subject aimed at a conceptual shift in nurse education in three areas:

1. Organizational principle or curriculum structure: from content focus to theoretical principles (Ramsden, 1992; Biggs, 2000);
2. Learning mode: from passive student to professional decision maker (Mawn & Reece, 2000);
3. Teaching strategy: from teacher-focused strategy with intentions to transmit information to a student-focused strategy aimed at students changing their conceptions (Andersson, 1999; Prosser & Trigwell, 1999).

Methods

This project was an exploratory descriptive, pilot study that employed a qualitative approach, using text, interviews and assessment outcomes as data, to evaluate the change in the teaching format for the surgical specialty subject conducted in the Postgraduate Diploma in Perioperative Nursing as perceived by students enrolled in the course.

Design

This project was conducted in 3 stages.

Stage 1: The subject co-ordinator, who was part of the research team and the principal lecturer, maintained a reflective teaching journal throughout her teaching of the subject. The reflections considered the success of each teaching session and the need to present future sessions differently; that is, what worked and what did not work in regards to the new subject framework.

Stage 2: A qualitative evaluation, in the form of a focus group with students enrolled in this subject, took place on the last teaching day of second semester. The focus group immediately followed the final lecture.

Stage 3: Data from the focus group interview, assessment results and the reflective journal were used to evaluate the subject. Some methodological triangulation was used to establish validity of our findings.

Ethical issues

The study received ethical approval from the Faculty Human Ethics Committee, La Trobe University. To avoid coercion of the students, Dr Erika Martens, who had no relation to the teaching of this subject, made the requests for participation in the project and undertook the process of data collection from the students. Anonymity and confidentiality were maintained. The subject coordinator did not have access to the data prior to the publications of the final results.

Instruments

The process employed nominal group technique, which systematically gathers data in a highly structured and interactive process, and allows much information to be elicited in a short time frame (Dewar, 2003). Nominal group technique is driven by the participants and not by the perceptions of the researchers. The process entailed each student responding to two general questions: What in this subject has helped your learning? and What in this subject should be improved? The student responses to both questions were collected in round robin fashion. After all items and ideas were noted, the members of the group were asked individually to select the two most important issues from the items noted. This process of voting resulted in a list of items ranked according to the perceptions of the whole group and provided the researchers with an impression of the whole group's views, as well as a rich range of individual views.

Participants

All 12 postgraduate students enrolled in the subject were asked to participate in the research project. Only four students were present at the focus group discussion. The remainder of the student group cited other commitments as the reason for not staying to participate in the focus group.

Outcomes

The major aim of the revised subject was met. Students demonstrated conceptual skills that enabled them to apply principles of surgical technique related to tissues across specialty areas. Evaluation of the revised subject comprised a reflective approach to teaching, focus group discussion and subject assessment.

Reflective approach to teaching

Notes in the reflective diary kept by the subject co-ordinator provided evidence that students responded well to this conceptual shift. The learning mode whereby students moved from passive student to active participant was evident. They actively participated in discussions of similarities and differences of

working with particular tissue. There was also active participation (in varying degrees) from all students as the teaching program proceeded and as they became more familiar with the idea of theoretical principles and the domains framework.

Focus group discussion after completion of the subject

The students' perceptions confirmed that the major aim of the subject, for students to be able to transfer principles of surgical interventions from one procedure to another, had been achieved (see Appendix). Their reception of the subject was generally positive as their positive remarks outweighed their negative remarks, both in number and in importance. The majority of the students' positive remarks focused on the newness of the subject's framework without having been prompted to do so. In their experience of studying, this approach was new and, as illustrated by the selected but representative quotes below, they found it helpful for their learning:

Thinking about surgical specialties in terms of similarities and differences: (having knowledge about one operation I could apply the principles to another unknown but similar operation).

Thinking about things in terms of surgical sequence, it is very similar for each operation.

Use of the discussion into types of surgery, which the subject used as a structure (for example. bone surgery): this set clear boundaries and made learning easy.

The other positive comments focused on the accompanying materials and the class presentations, which were part of their assessment. The strongest negative comments they made, with which most students agreed, focused on the balance between specific information and the application of a principle. They accept that there should be a balance but would prefer if the balance shifted a little.

A combination between giving us information re principles and individual specific operations might be better: we want more info re specific ops. The lecturers also seem to be used to giving this information. Teaching the principles only seems to have been difficult for some lecturers (for example, some of them 'lapsed' when Marilyn was out of the room).

The other negative comments focus on minor issues, such as a need to sum up at the end of each session, more use of hands on examples and the lack of punctuality of some guest lecturers.

Assessment

The subject was assessed in a manner that constructively aligned the assessment with the subject's new objectives (Biggs, 2000). Therefore the assessment was focused on the manner in which the subject had enabled students to transfer the key principles to real situations in the operating room. The assessment consisted of a written examination (60%), a classroom presentation of a patient

case study (40%) and the satisfactory completion of a Clinical Performance Tool (hurdle component). The examination checked content recall via a Multiple Choice Questionnaire section and clinical knowledge in the form of short answer questions about a range of patient scenarios, which rehearsed clinical decision-making. The second main assessment task, the case study, was directly linked to the objective of students developing high-level professional skills. The case study incorporated a scholarly approach to the topic by requiring an annotated bibliography of recent literature in the topic area. The presentation of the case study to the class also functioned as a learning opportunity for other students as it forced the presenting student group to take the first step towards the application of the theoretical knowledge to a real situation. This enabled the teaching team to know not so much *what* the students knew, but *how well* students knew how to apply the theoretical knowledge taught in the subject. This alignment of the assessment with the learning objectives of the subject supported deep approaches. In all areas of assessment students demonstrated an ability to transfer knowledge of specific tissues across surgical procedures. All students achieved a high grade in the theoretical component of the subject and clinical assessments.

Discussion and Conclusion

The major aim of this pilot study was to evaluate the change to the teaching and learning of the surgical specialties subject of the Postgraduate Diploma in Perioperative Nursing. The three changes incorporated into the subject seem to have assisted in the achieving successful learning outcomes. This was possible, because the subject was designed and taught by highly skilled and experienced nurse educators, who combined years of high-level clinical experience with high levels of pedagogical skills and deep knowledge of the subject matter. Methodological triangulation of data from the focus group interview, assessment results and the subject co-ordinator's reflective journal confirms our conclusions.

We acknowledge that this study is methodologically modest given the small number of participants. It is recognized that these participants have self-selected, hence limiting the weight placed on their feedback. The reflective teaching journal kept by the subject co-ordinator was used to inform and structure the teaching sessions and may have provided a possible bias when developing the teaching sessions. No comparison was or could be made between this group of students and previous groups in which the traditional teaching methods were used.

The curriculum focus on the understanding of the principles of surgery, away from the recalling of detailed processes according to surgical procedures and surgeons' preference, equips the students to make professional decisions to apply their knowledge of the principles to a less familiar situation. However, it

is acknowledged that further testing of this teaching and learning approach needs to be undertaken.

References

- ANDERSSON, E. P. (1999). From vocational training to academic education: The situation of the schools of nursing in Sweden. *Journal of Nursing Education*, 38, 1–38.
- BIGGS, J. (2000). *Teaching for quality learning at university*. Buckingham: Society for Research into Higher Education & Open University Press
- BIGGS, J. & MOORE, P. (1991). *Process of learning* (3rd ed.) New York: Prentice Hall.
- DALL'ALBA, G. (1991). Foreshadowing conceptions of teaching. *Research and Development in Higher Education*, 10, 163–73.
- DEWAR, A. (2003). Using nominal group technique to assess chronic pain, patient's perceived challenges and needs in a community health region. *Health Expectation*, 6, 44–52.
- ENTWISTLE, N. & RAMSDEN, P. (1983). *Understanding student learning*. London: Croom Helm.
- MCALLISTER, M. (2001a). Principles for curriculum development in Australian nursing: An examination of the literature. *Nurse Education Today*, 21, 304–314.
- MCALLISTER, M. (2001b). Principles in practice: An Australian initiative in nursing curriculum development. *Nurse Education Today*, 21, 315–322.
- MARTIN, E. & BALLA, M. (1991). Conceptions of teaching and implications for learning. *Research and Development in Higher Education*, 13, 298–304.
- MARTON, F. & SÄLJÖ, R. (1976a). On qualitative differences in learning 1: Outcome and process. *British Journal of Educational Psychology*, 46, 4–11.
- MARTON, F. & SÄLJÖ, R. (1976b). On qualitative differences in learning II: Outcome as a function of the learner's conception of the task. *British Journal of Educational Psychology*, 46, 115–127.
- MAWN, B. & REECE, S. (2000). Reconfiguring a curriculum for the new millennium: The process of change. *Journal of Nursing Education*, 39, 3:101ff.
- PROSSER, M. & TRIGWELL, K. (1999). *Understanding learning and teaching*. Buckingham: Society for Research into Higher Education & Open University Press.
- PROSSER, M., TRIGWELL, K., & TAYLOR, P. (1994). A phenomenographic study of academics' conceptions of science learning and teaching. *Learning and Instruction*, 4, 217–231.
- RAMSDEN, P. (1992). *Learning to teach in higher education*. London: Routledge.
- RICHARDSON-TENCH, M. (2001). *Unmasked! The discursive practice of the operating room nurse: A Foucauldian feminist analysis*. Unpublished thesis, Monash University.
- RUBY, J. (1999). History of higher education: Educational reform and emergence of the nursing professoriate. *Journal of Nursing Education*, 3, 23–28.
- SAMUELOWICZ, K. & BAIN, J. D. (1992). Conceptions of teaching held by teachers. *Higher Education*, 24, 93–112.

Appendix

Academic Development Unit, La Trobe University

Focus Group Discussion Report

Date:	18 October 2001
Name of Course/Subject:	Care of the Patient in Speciality Nursing
Course/Subject Convenor:	Dr Marilyn Richardson-Tench
Facilitator:	Dr Erika Martens (Academic Development Unit)
Students:	Four students participated

1. Items listed for Question 1: What in this subject helped your learning?

- Thinking about surgical specialities in terms of similarities and differences: (having knowledge about one operation, I could apply the principles to another unknown but similar operation).
- The use of narrative by guest speakers was useful for the understanding of the principles of speciality nursing.
- Thinking about things in terms of surgical sequence, it is very similar for each operation.
- Format of notes we received particularly in relation to exam preparation and study.
- Preparation and presentation of class presentation – we learnt specific information for the one we prepared and from the other presentations as well.
- Use of the discussion into types of surgery, which the subject used as a structure (for example, bone surgery): this set clear boundaries and made learning easy.

2. Items listed for Question 2: How could the subject be improved?

(Every tick (4) represents a vote by a student who thinks this is one of the two most important issues)

- ✓✓✓ A combination between giving us information re principles and individual specific operations might be better: we want more info re specific ops. The lectures also seem to be used to give this information. Teaching the principles only seems to have been difficult for some lecturers (for example, some of them ‘lapsed’ when Marilyn was out of the room).

- ✓✓ Repetition of basic principles, e.g. consent, prepping, dressings, positioning etc., has taken up 10 mins of each lecture and became repetitive and unnecessary.
- ✓✓ Use more hands-on, pictures, visuals, instrumentation i.e. props – so we can see what we are talking about, to add the real thing to the word.
- ✓ More reviewing, summaries or recaps at the end of each lecture would help us because some lectures were quite rushed – or running through it again as a group by applying it to a case. Even just for 5 minutes would help us remember and understand better.

Some lecturers didn't turn up. The organization could have been improved

Please contact me on #2323 if you wish to discuss any aspect of this Report.

Erika Martens, PhD

Director Academic Development Unit