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Evaluating Student Learning.


ABSTRACT

Determining the quality of student learning is an ongoing challenge to all educators. However, for educators and students in the health professions, evaluation of learning takes on a different dimension in terms of ensuring that graduates are competent, and thus safe, practitioners. This paper outlines the processes and methods by which student learning has been evaluated throughout a 22 year period at a large School of Nursing in an Australian university. First, an historical overview of the major methods used demonstrates how relevant educational theories and sociopolitical forces and movements have influenced the whole curriculum including evaluation methods. Secondly, examples of current evaluation methods for undergraduate clinical and theoretical units are described. Reflections about past successes and future challenges conclude the paper.

Key words: Student learning, evaluation, clinical practice, competency, theoretical units.

INTRODUCTION

It is generally accepted that the purpose of initial nurse education, which prepares students to practice as registered nurses, is to produce a competent practitioner, thus “protecting the general public from incompetence and maintaining professional standards” (Lafferty, 1997, p. 281). While it is relatively easy to define the purpose for preparatory or pre-registration nurse education, it is a far greater challenge to evaluate – to measure and judge - the outcomes of that education, thus ensuring that we are generating competent nurse practitioners.

Evaluation of learning, and the concomitant exploration and development of appropriate models and techniques for assessment, has always been a significant component
of the curriculum within the School of Nursing at the Queensland University of Technology (QUT). For purposes of information sharing this paper describes the processes and methods by which student learning has been evaluated throughout the 23 years the QUT School of Nursing has provided nurse education. First, an historical overview of the major methods used will demonstrate how our assessment methods have reflected contemporary educational theories and been influenced by sociopolitical forces and movements. Secondly, current examples of our evaluation methods for undergraduate, pre-registration clinical and theoretical units will be described. To conclude, we will reflect on past successes and future challenges.

AN HISTORICAL OVERVIEW

Established in 1978, the School of Nursing at QUT is the oldest and largest single campus centre for tertiary nurse education in Queensland. We offer undergraduate and postgraduate courses that range from Bachelor degree programs to Doctoral programs. The School has an international reputation for providing high quality, practice oriented courses and in 2000 had over 30 undergraduate and postgraduate international students enrolled. Our pre-registration students are prepared for nurse registration through a three-year Bachelor of Nursing program. In 2000, 402 students enrolled in this program, bringing our total number of pre-registration students to 987.

Responding to contemporary educational theories

From the beginning all aspects of our curriculum work, including evaluation of student learning, have endeavoured to reflect contemporary educational theories. Thus, our curriculum work has been an ongoing, dynamic, cyclical process, changing over time. For example, our approach has moved from a technical one using the Objectives and Rational Models of theorists such as Ralph Tyler and Hilda Taber, on through the procedural
approaches of theorists such as Laurence Stenhouse, to the critical approaches we use today. (For details of these models and/or theorists see for example, Lovat & Smith, 1995; Marsh & Willis, 1999; Tanner & Tanner, 1995). As such, our teaching, learning and evaluation processes in the early days were explicitly embedded in techniques or practices such as in the nursing process. We commonly provided scenarios or case studies and the steps of the nursing process were expected to guide student responses.

We still expect students to identify problems or issues from case studies, but our teaching and learning processes have moved from an emphasis on “following the steps” to an emphasis on students being able to demonstrate their understanding of underlying principles and concepts. We now have a broader and more applied approach to promoting problem solving and critical thinking; we are more aware of generic skills and the value of reflection. In keeping with contemporary educational thinking we have essentially moved from a concrete, rule oriented approach to all aspects of curriculum work, including teaching and learning, to one that is more abstract and flexible.

At the heart of contemporary educational thinking lies the notion of student centredness. Within a student-centered approach to learning and teaching the traditional role and responsibility of both learner and teacher is changed. The learner, rather than being a passive recipient of expert content knowledge, actively constructs meaning and is responsible for taking advantage of learning opportunities or activities. The teacher, rather than merely transmitting knowledge, facilitates or mediates the learning, taking responsibility for creating and maintaining the conditions and interactions that make understanding possible (Biggs & Moore, 1993; Laurillard, 1993; Ramsden, 1992). We believe that our students have always been encouraged to actively participate and be self-directed learners, and that we as teachers have always endeavoured to structure learning experiences in ways that promote problem solving.
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solving and critical thinking rather than the recall of facts and figures. Furthermore, we match our evaluation procedures with our teaching and learning goals and methods.

Our procedures for evaluating student learning have consistently been linked to learning goals and instructional methods, and we have well noted the assertion by Ramsden (1992, p. 67) that “the methods we use to assess students are one of the most critical of all influences on their learning”. We have become progressively more aware of the need for feedback and formative evaluation of student learning. Students need to know how their learning is progressing and assignment work during semester is our basic means of formally providing this information. The learning objectives associated with assignment writing also facilitate the stimulation of higher level cognitive activity. We initially made use of Bloom’s Taxonomy to write learning objectives and students were asked to evaluate, synthesise or analyse rather than to recall knowledge or simply apply principles to familiar problems. However, as we became increasingly conscious of the need for learners to understand basic concepts and to develop the skills needed for life-long learning, our framework for defining the quality of student learning moved more toward integration of ideas, reflective practice, and demonstrations of understanding.

We also evaluate student learning at the end of the formal learning process, as University regulations require a summative evaluation with grades being awarded, and ranked, according to success of completion. Because of our large student numbers the writing of case studies or major assignments for summative evaluation is, for practical reasons, very demanding and time consuming. We are increasingly using multiple choice examinations for summative evaluation. Staff have, therefore, been required to develop banks of items which enable students to demonstrate analytical, evaluative and reflective skills.

Throughout the 23 years our school has been established, all aspects of our curriculum work, including our evaluation methods have changed not only in accordance with prevailing
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educational theories, but also in response to sociopolitical forces and movements from within nursing and from the outside world. These forces changed not only the context in which registered nurses in Australia were traditionally prepared for practice, but also the nature of that preparation in terms of curriculum work.

Responding to sociopolitical forces and movements

Between 1985 and 1993 throughout Australia, responsibility for registered nurse preparation was transferred from the health sector to the higher education sector (Report of the National Review of Nurse Education in the Higher Sector - 1994 and beyond; hereafter referred to as the Reid Report). Many factors influenced this shift including the changing roles of nurses and recognition that the education sector could provide a more appropriate education to meet the changing health needs of the Australian population (Russell, 1988). Not only was the hospital-based context of nurse education being called into question, but also the content, the process, and the outcomes of nurse education. Certainly, the impact of new technologies, changing demographics and dramatic shifts in health care systems worldwide was mandating a reshaping of nurse education curricula (Mawn & Reece, 2000).

The major changes in nurse education coincided with significant changes within the Australian higher education system (for detailed discussion of these changes see, for example: Bowden & Marton, 1998; Candy, 1997; Lonsdale, 1998; Penington, 1998; Kennedy, 1995). Many of the changes within universities, such as the move toward a user-pays or client-driven environment, have led to increased demands for accountability (Bowden & Marton, 1998). The demands for accountability in tertiary education have come from all the stakeholders, not only from governments and university administrators, but also students and employers.
All of these movements have combined to create a complex environment for nurse education. This complexity is manifest in the differing expectations of universities and employers; differences that have provoked many contentious issues and dilemmas.

Universities and employers both have a legitimate stake in nurse preparation and both have the right to set certain limits in relation to the undergraduate degree. However, significant policy dilemmas can arise when employers and universities have differing expectations (Reid Report, 1994, p. xviii).

Employers want graduates who have minimal need for further training, supervision or orientation; who are aware of workplace needs and requirements and preferably have more than beginning competence. Universities, on the other hand, see themselves as preparing graduates for lifelong learning, “not only with vocational skills and minimum competence but also with broad generic skills and a grounding in academic learning and systems of knowledge” (Reid Report, 1994, p. xviii). These differing expectations converge on the notion of competency, which, within the professions is usually regarded as a combination of attributes - such as attitudes, knowledge, skills and potential - that underlie identified aspects of professional practice (Gonczi et al, 1990).

The competency-based approach to education is persuasive and appealing in the sense that it endeavours to explicitly outline the competencies students require to develop into competent nurse practitioners (Chapman, 1999). In most Australian states the nursing profession was motivated from within to develop competencies for hospital based nursing courses (Cameron 1989, p212). Thus, the potential value of competency development as a means to self-evaluate and increase accountability to the public was recognised by nursing well before the shift to university-based education (Sutton & Arbon 1994). The transition from hospital-based to university-based preparation was closely followed by recognition from
the nurse registering authorities that universities would need to know the competencies that students should achieve.

The registering authorities also recognised the value of competencies as a basis for accreditation of university courses (Cameron, 1989, p. 212). Furthermore, the various state Nurse Registration Boards require new graduates to have demonstrated achievement of the Australian Nursing Council Inc. (ANCI) competencies as beginning practitioners. This requirement has meant that nurse educators must evaluate students according to competency standards defined by the Australian Nursing Council. The current ANCI competency domains for registered nurses are Professional and Ethical Practice; Critical Thinking and Analysis; Management of Care; and Enabling. The ANCI competency standards underpin our Clinical Performance Appraisal Tool, which is our primary means of evaluating student clinical performance.

We trust this brief historical overview has provided some idea of how our evaluation methods have not only reflected contemporary educational theories but have also been influenced by sociopolitical movements. Examples of our current evaluation methods for pre-registration clinical and theoretical units will now be described.

**CURRENT EVALUATION METHODS**

**Evaluating clinical units**

Regardless of whether the unit is theoretical or practical, our students are provided with a unit outline specifying rationale and aims, objectives, content, teaching and learning design, assessment requirements, and criteria for assessment. The learning goals, instructional design and evaluation of learning methods are all linked and clearly visible.

The unit Clinical Practice 5 is the final clinical unit in our undergraduate course. The six-week off-campus practicum in an acute care setting is complemented by a short lecture
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program and self-directed use of the university clinical laboratory. Emphasis is placed on thinking critically, reflecting on practice, and independent problem solving for the provision and management of safe nursing care for assigned groups of patients, in preparation for successful transition to beginning level practice as a registered nurse.

Three items are used to evaluate student learning in this unit:

1. 100% mastery in examination of ability to safely administer medications (including calculations of medications with 100% accuracy).

2. Completion of the *Clinical Performance Appraisal Tool* (CPAT) with the achievement of a satisfactory level of performance on all criteria during the off-campus clinical practicum.

3. 100% attendance during the scheduled the off-campus clinical practicum.

As claimed earlier, the ANCI competency standards form the basis of our Clinical Performance Appraisal Tool. This tool is currently designed around three competency clusters: Interpersonal Relationships, Clinical Decision Making, and Professional Development. A guide providing the details against which a student’s clinical performance is evaluated accompanies each Tool. Formative evaluation, currently using a visual analogue, is provided to students midway through their clinical placement. For summative evaluation purposes a student’s clinical performance on each criterion is judged as satisfactory or unsatisfactory. An example from each competency cluster, together with examples of indicators, will now be provided to illustrate how this works.

**Cluster 1: Interpersonal relationships**

**Competency:** Uses effective communication strategies during interaction with individuals and/or groups.

**Indicators:**
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- Establishes a climate conducive to communication.
- Focuses on client needs and interests.
- Uses a range of verbal communication techniques.
- Provides adequate time for interaction.

Activities that support these indicators include the provision of appropriate verbal and written communication such as handover of client care, completion of client notes, reports, charts, and/or observation sheets.

**Cluster 2. Clinical Decision Making**

**Competency:** Formulates an holistic plan of care based on the unique needs of the client.

**Indicators:**

- Justifies specific nursing interventions based on relevant theory/research in congruence with the client context.
- Specifies realistic client outcomes and establishes priorities based on the client’s capabilities/limitations/strengths.
- Collaborates with members of the health team through the identification of required interdependent nursing activities.

Activities that support these indicators include: The provision of an appropriate nursing care plan, communicating with members of the health care team re client progress, client follow through from admissions to discharge, ability to adapt/modify care plans in accordance with changing client needs.

**Cluster 3: Professional Development**

**Competency:** Demonstrates responsibility for own activities
Indicators:

- Accepts accountability for own practice.
- Reports incidents/accidents promptly.
- Ensures continuity of client care prior to leaving the area.
- Questions interventions that appear inappropriate.
- Recognises limits of ability and seeks appropriate support.
- Accepts constructive feedback.
- Asks for supervision when necessary.

Each student must achieve a satisfactory level of performance in each of the competencies contained in the three clusters. Identified indicators are used by the evaluators to judge the level of performance.

Current Development for Clinical Evaluation

Today, our Clinical Performance Appraisal Tool is our primary means of evaluating student clinical performance. In earlier years we evaluated a student’s performance using a list of discrete behaviours or skills according to behavioural criteria. Evaluation of some of these discrete behaviours and skills is still necessary to ensure safe and competent practice - for example in wound care and in medication administration. Today however, the criteria are more holistic and developed in a way that is expected to raise student performance levels each practicum.

We use a similar tool to evaluate clinical performance over each practicum. However, the required competencies are incremental in both quantitative and qualitative terms. For example, in the first clinical practicum 12 competencies are evaluated, with three of these being in the Clinical Decision Making cluster. In the fifth and final practicum student
performance is evaluated in 20 competencies, 10 of which are in the Clinical Decision Making cluster. Further, in the second clinical practicum students are expected, for example, to “identify” health teaching to promote and/or maintain client health”; by the fourth clinical practicum they are expected to “collaborate” in this activity and by the fifth practicum they are expected to “initiate” the activity. The criteria against which competency judgements are made are clearly hierarchical in terms of the degree or quality of learning.

Over the years we have used various methods to describe the level of performance. We began with “satisfactory” or “unsatisfactory” and moved on to descriptors such as “dependent” and “independent”. We have measured the level of performance on rating scales and on visual analogues. At present we have turned full circle and once again are evaluating clinical performance as “satisfactory” or “unsatisfactory”. The judgement now, however, is made on the basis of evidence from identified criteria.

Arguably, one of the biggest changes in how we evaluate student learning in a clinical unit lies in the person responsible for evaluation. In our early years, University nursing staff were responsible for all clinical evaluation. Our student numbers were relatively small and we were a close knit group in terms of shared understandings of the curriculum and expectations of student performance. Presently, with our greater student numbers, we require a greater number of evaluators and responsibility is now shared with registered nurses in the workplace. While such collaboration has done much to break down barriers between the “Ivory Tower” and the workplace, it is now a significant challenge to achieve consistency in the standards we require in terms of student performance. Although we make our requirements clear, pre-brief all evaluators, and provide written documentation of our requirements and standards, the great diversity of people now doing evaluations makes it very complex and difficult to achieve consistency between requirements and “outcomes” and between evaluators.
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The challenges associated with evaluation of student clinical performance will no doubt continue to offer opportunities for further transformations of our methods. In order to facilitate these transformations, we closely monitor not only learning opportunities and environments within the university and the wider clinical arena, but also education literature related to all aspects of health education. Our current methods for evaluating theoretical units will now be briefly overviewed, using a particular unit as an exemplar.

Evaluating theoretical units

The unit Professional Practice Development, which is undertaken in the last undergraduate semester, provides an example of how we have recently evaluated student learning in a theoretical unit. This unit is designed to reinforce the link between clinical practice and theoretical knowledge, to highlight the learning opportunities available in the changing workplace, and to model a process of ongoing professional development. The primary aim is to develop skills for lifelong learning and extend skills in reflective practice to support a more critically reflective approach to nursing practice. The content aims to clarify the relevance of concepts such as nursing management and patterns of nursing care delivery, independent practice and codes of conduct by relating those directly to clinical experience. The unit is designed around use of learning modules or topics (presented as a weekly tutorial) and a reflective journal.

There are three elements of evaluation – all in assignment format. The requirements, marking criteria and weighting for each assignment are given in detail to the students. In the first assignment, students are required to identify an important experience related to a topic identified in the unit outline and explain in 500-750 written words the actual incident, their feelings about the incident, and the meaning or their reflections associated with the experience. In the second assignment, which consists of 2000-2500 words, they build on this
work by reflecting further on the incident and by drawing on the literature to support their ideas and conclusions. Completion of a reflective journal constitutes the third assignment.

The evaluation criteria for the second assignment – the comprehensive analysis of the practice incident – provides an example of criteria we have recently used to evaluate student learning in this unit. While indicators of activities are given for all five criteria, this detail will be reproduced here only for the third criterion, Validation of meaning. The assignment length is 2000-2500 words; weighting is 40%.

1. **Identification of feelings (5%)**

2. **Search for meaning (5%)**

3. **Validation of meaning (15%)**
   - Does the student validate his/her understandings/analysis of the incident with reference to relevant and current research literature?
   - Does the student present a logical, well-argued position to support their understanding/analysis of the incident?
   - Are the references to the literature clearly linked to support the meaning attributed to the incident?
   - Is there strong evidence that readings from the research literature, over and above the readings supplied, are used to validate meaning?

4. **Outcome of reflection (10%)**

5. **Care in presentation (5%)**

These evaluation criteria and their weighting also serve to guide student learning and direct attention to the more important elements. This unit is typical of how we structure student
learning experiences, and the evaluation methods are clearly linked to the aims and the teaching process.

**REFLECTIONS ON PAST SUCCESSES AND FUTURE CHALLENGES**

Looking back over the last 22 years, we are proud of what we have achieved. We have always endeavoured to keep pace with contemporary educational thinking and been proactive in ensuring our students receive the most appropriate nurse education. Perhaps more importantly, we have maintained close links with the clinical areas. We learnt very early that we had to keep up with the realities of what was happening in the clinical world if we were to produce graduates that could meet the needs and requirements of the workplace. Thus, over the years we have continuously refined our procedures for evaluating student learning, and ensured that they are not only closely connected to learning goals and instructional methods, but also to the realities of the workplace.

At the School of Nursing, QUT, we have become increasingly conscious of the central role evaluation plays in student learning. We have become very aware that the evaluation tasks, rather than lists of objectives or content, direct student learning. We will no doubt continue to refine our methods for evaluating student learning to meet future education challenges. For example, it is probable that lifelong learning strategies and information literacy skills will be increasingly in demand as the knowledge explosion continues, and today’s knowledge becomes obsolete tomorrow. It is also probable that personal and interpersonal skills and skills such as those associated with critical thinking and problem solving will be needed more than ever. Internationalisation, globalisation and ongoing scientific and technological advances raise the likelihood of an increase in the use of technologically mediated teaching and learning. All these factors suggest a very challenging
future for all aspects of nurse education, not least being the curriculum and how we evaluate student learning.

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REFERENCES


