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Paper presented at AARE: Aligning learning theory with curriculum design in hospital-based  
post-graduate certificate nursing courses: Getting the optimal outcome

## **Introduction**

Advances in the provision of health care and proliferation of biomedical technology have influenced the emergence of specialty areas within the health care sector. This is particularly evident in the area of critical care nursing. For Registered Nurses (RNs) to function competently in critical care areas, they must acquire and utilize a specialist knowledge base incorporating higher-order domain knowledge and strategies (Reid 1994, McMillan 1999). Current undergraduate nursing education does not provide for this level of advanced nursing practice (Macilwaine 1998, Greenwood 2000). Rather, it is the function of post-graduate nursing education to provide for this qualitative shift in nursing competency through the enhancement of core knowledge and strategic competencies (Dunn, Aitkin, Chaboyer, Theobald, Perrot & McCullough 1998, Slavin 1998, Greenwood 2000).

A National Review of Specialist Nurse Education, commissioned in 1995, reviewed the quality and quantity of current offering in specialist nurse education in Australia (Russell, Gerthing & Convery 1997). The outcome of this review provided seven recommendations in such areas as the definition of specialist nursing; standardisation of courses; collaboration; credentialing and future educational provisions. However, the report did not assess the impact of demographic, professional, prior educational or perceptions of RNs currently participating in specialist education. Of particular importance was a lack of enquiry into the quality of learning outcomes perceived by these RNs.

While Russell et al's (1997) report gives some indication of the breadth of post-basic study in nursing, there has been very little research focussing on the nature of student learning, the underlying curriculum assumptions of post-graduate nurse education, nor on the quality of learning and clinical outcomes associated with participation in these courses. In the proposed study, a framework for investigating the quality of post-graduate nurse education is offered. This model focuses on the notion of "curriculum integration" (Brophy, 1999) - that is, the congruence between curriculum structure and learner attributes as a conceptual underpinning for analysis of the implementation of a post-graduate nursing course. It is suggested that Biggs' (1999) "3P" model of student learning provides a descriptive mechanism allowing for the evaluation of the congruence between learner, instructor and

curriculum components in the design, implementation and evaluation of a specific post-graduate nursing course in critical care nursing.

Central to the professional nursing attributes of the specialist critical care nurse is the development of domain specific critical thinking and problem-solving abilities, and mastery of highly technical skills and competencies (Reid 1994, McMillan 1999, Greenwood 2000). It is a major research issue for this study to investigate factors that may influence the likelihood of post-graduate nursing education achieving these outcomes. As a way of conceptualising such a predictive model, use will be made in this study of Biggs' (1999) "3P" model of student learning.

### Presage Process Product

Learning

processes

(adapted from Biggs 1999, pg 18)

Utilizing the 3P model as a framework, each component will be closely examined with the main emphasis focusing on the learner- in this case the Registered Nurse.

### **Presage Factors**

#### ***The Learner***

Numerous factors affect how the learner learns. This research will limit its focus to the RNs prior clinical experience, domain knowledge, motivational goals, self-efficacy, and self-regulatory knowledge. Whilst not exclusive, these factors may be seen as potentially important predictors of the quality of learning outcomes.

**Prior clinical experience** provides the learner with a basis for which to build additional core cognitive knowledge, skills and competence (Irvine 1995, Heinz-Fry & Novak 1990, Whyte & Sellick 2000, Cholowski & Chan 1992 & 1994, Benner 1984). All & Havens (1997) concur, and consider that what the learner already knows is the most important single factor influencing one's learning. An assessment of the prior clinical knowledge base will be achieved by having the RNs complete the Australian Basic Intensive Care Knowledge Test (Boyle, Kenney & Butcher 1995) at the commencement and completion of the course.

**Motivational** goals are a key element in the learner's pursuit of further education. Winne (1995) viewed motivation as a form of knowledge for reaching learning goals that are inherently valued. Australian studies are limited regarding motivational factors associated with RN's seeking continuing education. Within the last decade, studies by Cholowski & Chan in 1992 highlighted the influences of intrinsic motivational factors that nurses engage to determine the extent or level of goal attainment to be achieved. Conversely, a study by Sutherland in 1995 concluded that RNs tend to be extrinsically motivated. In 1998, a survey of Australian RN's revealed that the most important reason for undertaking graduate study was personal or job satisfaction (42%), increased professional status (22%) and better job opportunities (17%) (Pelletier, Donoghue, Duffield, Adatns & Brown 1998, p.423) whilst a study by Gould, Smith, Payne & Aird in 1999, concluded that a main motivational force was that an improved knowledge base would enhance one's clinical practice. The extent of motivational goals will impact on the quality of learning outcomes. Conversely, the RNs perception of learning outcomes influences their motivation.

**Self-efficacy:** Motivational goals are influenced by the learner's perceived self-efficacy. Self-efficacy is a personal expectation about one's ability to successfully perform a specific task or behaviour. It plays a crucial role in the self-regulation of motivation by determining the goals people set for themselves, how much effort they expend, how long they persevere in the face of difficulties, and their resilience to failures (Bandura 1993, Schunk 1995, Archer, Cantwell & Bourke 1999, Ames & Archer 1988). As a means of assessing the perceived self-efficacy of the RN's participating in post-graduate courses, a 20 item questionnaire (Sherer & Maddux 1982) will be given at the commencement and completion of the course. Currently no published studies could be found specifically on self-efficacy and its affect on the quality of learning in post-graduate nursing education. This may be another area for future research.

**Self-Regulated Knowledge:** Lastly, another key element attributed to the Learner's ability to learn is the concept of self-regulation. Self-regulation is a complex interactive process involving metacognitive, motivational and behavioural components, including self-efficacy (Zimmerman 1995, Boekaerts 1995). Self-regulation refers to the perceived self-control the learner holds with regards to his/her learning acquisition. It is the students' awareness of themselves as learners and the strategies they select to complete their work, how they use their knowledge about learning which allows them to organise, plan and monitor their learning (Archer et al 1999, Boekaerts 1995, Ames & Archer 1988). Knowing when, how, and where different learning strategies should be utilized is defined as *conditional* knowledge about self-regulation (Cantwell & Moore 1996, Winne 1995). Cantwell (1997) describes three types of control of conditional knowledge of self-regulation as Adaptive, Inflexible and Irresolute. Two recent Australian studies of undergraduate nursing students illustrated the relationship between control of conditional knowledge and goal achievement (Cantwell 1997) and the other study by Cantwell & Moore (1998) studied the relationship between study process approach and self-regulation. Both studies highlighted the influence of self-regulation on the learning process and quality of learning outcomes. By using the same Strategic Flexibility Questionnaire, it will be interesting to see if similar results occur with postgraduate nursing education/learning.

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### *The Instructor/Teacher*

The expertise of the instructor has been shown to influence all major components of the "3P" interactive model. Biggs (1999) describes three "theories" of teaching in order of complexity and sophistication, and are referred to as levels. Level 1 focusing on "what the student is", i.e.: success of learning is reliant upon the student. The teacher is the transmitter of knowledge/information. The variability in student learning is based upon the "blame the student theory" of teaching and is based on student deficits. Success or failure is purely reliant upon the student. Level 2 focuses on what the teacher does. It is still based on the premise of transmission of information- but includes concepts and understandings. Learning is perceived more a function of what the teacher is doing, his/her armoury of teaching skills. Student's learning success is based again on a deficit model. This time if a student is unsuccessful it must be the teacher to blame. Level 3 focuses on what the student does, as sees teaching as supporting learning. It incorporates that the teacher specifies what levels of understanding we want when we teach a topic, and requires the teacher to select the most appropriate learning activities to achieve those levels. "It's not what we do, it's what *students* do that is the important thing (Biggs 1999, p24). Instructors tend to hold to these theories at different periods in their teaching career (Biggs 1999, p.21). The level at which the instructor conducts his/herself (i.e. facilitation vs. knowledge transmission) may determine the quality of the learning process (deep vs. surface) and quality of learning outcomes (Gow & Kember 1993, Brophy 1999). The influence of the instructor's beliefs created teaching environments to which the students reacted and altered their learning approaches accordingly (Biggs 1999). Paul & Heaslip (1995) support this view by encouraging instructors to adopt teaching skills that promote critical reasoning. Instructors need to facilitate critical thinking skills to RNs undertaking post-graduate nursing education in order to function optimally in their chosen field (Benner, Hooper-Kyriakidis & Stannard 1999, Daly 1998, Bethune & Jackling 1997, Bandman & Bandman 1995, Brophy 1999, Chowloski & Chan 1994, AlfaroLeFevre 1995). Albeit background information, it is important to ascertain if &/or how much influence the teacher has on the learning outcomes as perceived by the RNs. The RNs will be asked to complete evaluation forms for each module which will assess the effectiveness of the teacher, course content, etc.

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### *The Curriculum*

The curriculum design must consider the learners' and instructors' attributes, the available resources/ learning environment and assessment tasks in relation to the desired learning outcomes. There must be alignment/congruence between aims, objectives, and assessments within the curriculum (Biggs 1999, Brophy 1999). Assessment tasks should be reflective of clearly stated aims, objectives and desired learning outcomes (Biggs 1999). Assessment methods should encourage the development of analytical and critical thinking abilities and reflective practice (Boychuk 1999, Wildman, Weale, Rodney & Pritchard 1999, Cholowski & Chan 1992, 1994, Ford & Profetto-McGrath 1994, Doddato 1995, Sutherland 1995, Conger & Mezza 1996). Scouller's (1998) study concluded that essay assessments produced more analytical, critical thinking, communication skills and a deep learning approach. This qualitative approach to assessment tasks is more beneficial to the learner (Kember 1991, Biggs 1999, 1992).

**Environment:** " It is generally agreed that successful performance on a task involves a complex interplay among cognitive, self-regulatory, motivational self-evaluation, affective and environmental variables" (Archer et al 1999, p.32). Ames (1992) focused on ways in which

educational situations can be structured to encourage students to develop competence on a task and increase their understandings of a subject. Overly competitive (Archer et al 1999), or hostile environments can induce debilitating anxiety that interferes with the students ability to make use of relevant self-regulatory strategies (Bandura 1993). According to Dunn et al (1998) it is imperative that specialist nursing programs conducted through universities have a strong clinical focus and involve close collaboration with the appropriate care provider. Whyte & Sellick's (2000) Australian study provided strong support for provision of both vocational and tertiary sectors. The learning environment is crucial for the success of any post-graduate nursing education program. Conducting post-graduate nursing education from a hospital based setting is an optimal learning environment. It minimises the theory and practice gap, providing current "hands-on" application of knowledge and skills acquisition (Benner et al. 1999). Bridging the theory and practice gap can be attempted by addressing the next section of the 3P model, the Process.

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### **Process Factors**

This component of the interactive model is affected by all the elements involved in the Presage section. Both teaching and learning processes occur in this section. During the process, deep versus surface and active versus passive learning approaches are analysed. For quality learning outcomes, it is recommended that a deep approach be utilized in the teaching-learning process (Biggs 1992, 1999, Scouller 1998, Cantwell 1997, Cholowski & Chan 1992, 1994, Lonka, Joram & Bryson 1996, Cantwell & Millard 1994, Kember 1991). Equally, active participation provides greater meaningful learning experiences than the passive approach (Lonka et al 1996, Bflett & Rose 1997, Ffiggins 1989, Daddato 1995). Successful learning and teaching processes will lead to improved quality of learning outcomes. This highlights the importance of congruence between the instructor's intentions/ behaviours and the learner's intentions/behaviours. The instructor needs to align the learning activities associated with the aims and objectives set-forth in the curriculum to achieve an active and "deep" approach to learning thus facilitating the learner's needs for quality learning outcomes.

### **Product Factors**

Quality learning outcomes is the aim of post-graduate nursing education, including critical thinking processes, problem-solving strategies, and clinical competence. The swne goals are echoed in the nursing profession (Benner et al 1999, Wade 1999, Daly 1998, All & Havens 1997, Dunn 1996, Sitnsen, Holroyd & Sellick 1996, Paul & Heaslip 1995, Duffield, Pellitier & Donogue 1995, Bandman & Bandman 1995, Kramer 1993, Styles 1991). This same critical thinking has been linked with intuition (Paul & Heaslip 1995), problem-solving, critical decision-making and as an analytical process (Daddato 1995, Paul & Heaslip 1995, O'Neill & Dluhy 1997, Wade 1999, Bethune & Jackling 1997, Daly, 1998). As a result of aligning learning theory and curriculum design, graduates should achieve higher order domain specific knowledge and the incorporation critical thinking, recognizing that knowledge use is just as important as knowledge and skills acquisition (O'Neill & Dluhy 1997, Cholowski & Chan 1992,1994). Critical thinking is essential in professional nursing practice especially in critical care nursing areas. Critical thinking is clearly associated with knowledge, cognitive skills, complex reasoning, argumentation, beliefs, action, problem identification, evidence, and the envisioning of alternative frames of reference and possibilities (Daly 1998, Benner et al 1999).

## **Current Statt**

Are nurse educators providing the necessary frameworks for such standards to be achieved? One of the main stakeholders involved in the health care system is the Registered Nurse. In particular, are the educational needs of the RN participating in post graduate nursing education being met? What is their perception of the process? Are the desired outcomes being attained? What are the actual outcomes of completing a post graduate nursing course? Has the course changed their nursing practice? How has the course affected them personally and professionally?

## **Design & Method**

The quality of learning outcomes will be investigated by qualitative ethnographic research. Due to the limited size of the Intensive Care Course (8 participants) and the authors "teaching" role within this course, case study and action research methodologies will be incorporated within the design. Much of the "rich data" will be obtained from semi-structured in depth interviews. The RNs participating in the Intensive Care Nursing Course will be interviewed at the commencement, 6 months into the course, at completion and then 6 months after the completion of the course. The interviews will focus on the RN's perception of their learning processes, strategies/self-regulation, motivation and how these may or may not have changed over the period of doing the course. The last interview emphasizing the changes that the RN perceives they have made clinically, professionally and personally.

As a measure of the competency standard or level of each ICU course RN, a self appraisal of current nursing practice will be completed before the course starts, using a Likert scale questionnaire involving each competency as detailed by the Australian College of Critical Care Nurses (ACCCN) Competency Standards. This will be reassess at the end of the 12 month course using the same Likert scale. Students will also produce a reflective journal incorporating these competency standards. Each individual will be assessed/observed for actual clinical practice and competencies by an accredited assessor from the ACCCN.

Qualitative analysis and profiling will be used with the data obtained through the interviews, self-efficacy (Sherer & Maddux 1982), strategic flexibility (Cantwell & Moore 1996), and study process (Biggs 1987a) questionnaires, ABICK cognitive test (Boyle, Kenney & Butcher 1995) and assessment/ academic transcript results for each student completing the course. Do the learner's attributes impact the quality of learning outcomes? Are there any correlations? Have any of these attributes changed over the period of the course?

This study will evaluate the effectiveness of the quality of learning outcomes of a current educational program of a hospital based post-graduate certificate course. By closely examining all the components within the 3P model- hopefully many of these questions will be answered. Depending on the results, it may have implications as a cornerstone for a national framework for post-graduate nursing education in Australia.



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