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Making the Connections:
Using Health Care Research in Nursing Clinical Teaching Practice

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Abstract

Studies show nurses experience many barriers to research use in practice. Nursing education needs to prepare nurses to evaluate and apply research as a basis for practice. Clinical teachers have the opportunity to close the gap between research and practice by preparing students to use research in their practice. However, little is known about how clinical teachers use health care research in nursing clinical teaching practice.

The purpose of this qualitative research study is to explore the use of health care research in nursing clinical teaching practice. Study objectives are: a) to explore the use of health care research by clinical teachers (current practices); b) to examine clinical teachers' concerns about using health care research in their practice; c) to explore factors that impede or facilitate clinical teachers' use of health care research in their teaching; and d) to explore strategies used by clinical teachers to promote use of health care research by students.

A grounded theory approach was used. A convenience sample of 15 clinical teachers in a baccalaureate nursing collaborative program were interviewed using a semi-structured questionnaire. Analysis of the data led to the identification of the main theme *making the connections*. Also identified were the sub categories of *valuing the connections*, *conditions affecting the connections*, *connections strategies*, *students seeing the connections* and *strengthening the connections*. The findings were presented to 9 of the original 15 participants and feedback indicated they agreed with the results of analysis and the model developed. Implications for nurses teaching clinical practice, nurses in full-time faculty or administrative roles and research are discussed.

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Chapter One – Introduction

Rationale

The public expects and deserves health professionals to provide care based on current knowledge that results in improved health outcomes. Using knowledge of best evidence as part of practice is promoted by healthcare professional organizations. Research findings are considered the strongest evidence for influencing practice. Despite this, the gap between research use and practice remains wide (Estabrooks, 1999b; Estabrooks, Floyd, Scott- Findlay, O’Leary & Gushta, 2003; Titler & Everett, 2001). Reasons for the gap include, the steadily increasing amount of knowledge being generated and the personal and environmental factors that affect practitioners’ ability to use research in their practice (Estabrooks, 2003; Funk, Tornquist & Champagne, 1995; Pravikoff, Tanner & Peirce, 2005)

Nurses, the most numerous health professional group, are obliged to use relevant health care research in their practice. National and provincial nursing associations consistently identify use of research evidence and guidelines to inform practice as an expectation of nurses educated at the baccalaureate level (American Nurses Association, April 1997; Canadian Association of Schools of Nursing, 2004; Canadian Nurses Association, June 2003; Canadian Nurses Association & Canadian Association of Schools of Nursing, 2004). However, studies have shown nurses experience many barriers to research use in practice, including not valuing research in their practice, lacking confidence in their ability to access and evaluate research and integrate research into practice, and not seeing research being used in their practice setting (Dunn, Chrichton, Roe, Seers & Williams, 1997; Dyson, 1997; Estabrooks, Floyd et al., 2003;

Funk, Chapagne, Wiese & Tornquist, 1991; Kajermo, Nordstrom, Krusebrandt, Bjo & Rvell, 2000; LeMay, Mulhall, & Alexander, 1998; Parahoo, 2000; Pearcey, 1995; Pravikoff, et al., 2005; Radjenovic & Chally, 1998; Retsas & Nolan, 1999; Retsas, 2000).

Nursing education needs to prepare nurses to evaluate and apply research as a basis for practice in order to close the gap between research and practice (American Nurses Association, April 1997; Boland & Finke, 2005; Canadian Nurses Association, November 2002; Funk, et al., 1995; Pravikoff et al., 2005; Radjenovic & Chally, 1998; Yonge, Anderson, Profetto-McGrath, Olsen, Skillen, Boman et al., 2005). Research use is increasingly being integrated into nursing curriculum (Callister, Matsumaura, Lookingland, Magnum & Loucks, 2005; Kessenich, Guyatt & DiCenso, 1997; Killeen & Barnfather, 2005; Newhouse, Dearbolt, Poe, Pugh & White, 2005). In classroom and clinical settings, educators have had to adopt teaching/ learning methods to encourage critical thinking and research-based knowledge use (Boland & Finke, 2005; Kessenich et al., 1997). Learning in the clinical practice environment is a fundamental part of nursing education. Clinical placement provides students opportunities to apply concepts introduced in the classroom. Clinical placement is the ideal place to gain experience and develop confidence in using research in practice. Clinical teachers have the opportunity to close the gap between research and practice by preparing students to use research in their practice. However, little is known about how clinical teachers use health care research in nursing clinical teaching practice. Many of the same barriers to research use by nurses may affect research use by clinical teachers.

My research interest was to explore clinical teachers' use of health care research in nursing clinical teaching practice. The research topic developed as a result of my

experience with clinical teaching and my participation in two research projects involving clinical teachers. During the research projects, I heard clinical teachers sharing the challenges they experienced when balancing the many learning needs of the students with the demands of the clinical environment, the objectives of the curriculum, and the expectations of the educational institution. I believed clinical teachers faced many challenges and competing priorities during the limited time the students have in the clinical setting and therefore may not have had research use as a high priority. I believed the challenges clinical teachers encounter include isolation from peers and lack of education regarding their role and use of health care research in practice. Therefore, I thought, even teachers who believe in research use in practice would face challenges in including it in their clinical teaching and may not include research use in their teaching

As a graduate student, I had become aware of the concepts of the theory- practice gap, research- practice gap and evidence-based practice. I thought clinical teachers are ideally positioned to assist nursing students to link classroom learning with clinical learning. Furthermore, I believed, clinical teachers are in a unique position to facilitate use of health care research in practice by students and future practitioners. After reading the literature indicating that graduate nurses felt inexperienced and not capable of evaluating and applying research evidence (Funk et al., 1991; Kajermo et al., 2000), I felt the ideal time for nurses to become exposed to and develop confidence with using research in practice was as nursing students. I wanted to explore the use of health care research in nursing clinical teaching practice, including the current practices, concerns, factors impeding or facilitating, and strategies used. Similarly, knowing clinical teachers

have many responsibilities, I wondered to what extent clinical teachers used research in their teaching.

Research use in practice, as a concept, is linked to evidence-based practice and research utilization and often these terms are used interchangeably (Estabrooks, 2001). The meaning of these terms and their interrelationships will be clarified in the review of the literature in Chapter Two. Within the context of this study, in an effort to avoid misunderstandings, the term *research use* was chosen to include any use of research findings in practice.

Study Purpose and Objectives

The purpose of this study is to explore the use of health care research in nursing clinical teaching practice. The study objectives are: a) to explore the use of health care research by clinical teachers (current practices); b) to examine clinical teachers' concerns about using health care research in their practice; c) to explore factors that impede or facilitate clinical teachers' use of health care research in their teaching; and d) to explore strategies used by clinical teachers to promote use of health care research by students.

Definitions

For the purposes of this study the following definitions were used for key terms.

- Student - a nursing student enrolled in any of the years 1-4 of a baccalaureate nursing program.
- Clinical Teacher - a Registered nurse employed by an educational institution to teach baccalaureate nursing students in a clinical setting.
- Clinical Nurse Educator- a nurse employed by a clinical agency, whose educator role is primarily with nurses rather than students.

- Clinical setting - a hospital, health care institution, or community agency where students have access to patients/clients in order to provide care under supervision.
- Health care research - (used as a noun) may include research from nursing, medicine or allied health professions.
- Nursing clinical teaching practice (NCTP) - knowledge, roles and strategies used by clinical teachers in facilitation of students' learning experiences in the clinical setting, linking theoretical knowledge learned in the classroom or lab setting to clinical practice with clients.

Thesis Outline

The thesis is composed of five chapters. The first chapter introduces the rationale and context for the study and identifies the study purpose and objectives. In the second chapter, literature related to evidence-based practice, research utilization, research use, nursing education and clinical teaching are reviewed. Existing models and frameworks relevant to research use in nursing are presented. In chapter three, study methodology based on the grounded theory approach is explained including setting, sample selection, data collection and analysis and methods to ensure rigour. In chapter four, the study findings are presented. First the sample is described. Then, the central category and subcategories are briefly identified before a representation of the model developed is presented and explained. The central category and sub - categories, which emerged from the data, are described further using participant quotes. The last chapter discusses the study results in relation to the study purpose and objectives, identifies limitations of the study and summarizes implications of the study for nursing clinical teaching practice, education and research.

Chapter Two - Literature Review

Search Strategy

The literature review described in this chapter focuses on evidence-based practice, research use and clinical teaching. This literature review included: a) evidence-based practice, research utilization, and research use; b) factors inhibiting or facilitating use of research evidence by nurses; c) the use of research evidence and evidence-based practice in healthcare education; d) nursing clinical teaching practice; and e) models relevant to research use in nursing clinical teaching practice. Findings from the literature review contributed to the development of the study objectives and open-ended interview questions.

The review involved searching CINAHL and ERIC databases for the years from 1990-2006. Key words used were *evidence-based practice, professional practice-evidence-based, nursing practice-evidence-based, evidence-based nursing, nursing practice-research based, research evidence, diffusion of innovation, knowledge transfer, change, innovation uptake, knowledge uptake, utilization, education, nursing, nursing education, nursing curriculum, teachers attitudes, faculty nursing, curriculum development, education, nursing baccalaureate, faculty attitudes, clinical instructor, students, best practice, best practice guidelines, and clinical practice guidelines.*

Also, a search of the World Wide Web was performed for nursing association websites including the American Nurses Association, College of Nurses of Ontario, Canadian Association of Schools of Nursing, for position papers on evidence-based nursing practice and the role of educators. The World Wide Web was also used to search for a specific theory, the Concerns-Based Adoption Model.

Additional search strategies included: on-line searches for authors of interest such as Funk and Estabrooks; identification of relevant references from each article retrieved; and hand searches through relevant journals.

Evidence-based Practice, Research Utilization and Research Use

The terms evidence- based practice and research utilization are often used interchangeably. To avoid misunderstanding, the term *research use*, as a broader and more inclusive term, was chosen to include any use of research findings in practice. First, the relationship between evidence-based practice, research utilization and research use will be explained and a table of definitions provided. Then a summary of literature relevant to the study will be presented.

Overlap between the concepts and misuse of the terms EBP and research utilization in language has suggested that use or understanding of the term EBP may not be consistent among practitioners (Estabrooks, 2003; Titler, Kleiber, Steelman, Rakel, Budreau, Everett et al., 2001). Definitions of evidence-based practice, evidence-based nursing and research utilization found in the literature are shown in Table 1.

Evidence-based practice (EBP) is a much broader term than research utilization, encompassing not only the use of research findings but other forms of practice knowledge (Estabrooks, 2001; Polit & Beck, 2004; Titler et al., 2001; Titler & Cameron, 2005). However, due to the speed which *evidence-based practice* has entered our vocabulary, *evidence- based practice* and *research utilization* are sometimes used interchangeably when what is really meant is the more specific term *research utilization* (Estabrooks, 2001). For example, The College of Nurses of Ontario (2005) defines evidence-based practice as “the integration of knowledge of the best available research,

client preferences, resources, and clinical expertise when making decisions with a client about achieving the best possible health care”(p. 15).

Research utilization is the use of research findings to guide practice (Estabrooks, 1999a). Research utilization comprises evaluating research and assessing appropriateness to the clinical situation. Different types of research utilization are described in the literature (Estabrooks 1999a; Estabrooks, 1999c; Milner, Estabrooks, & Humphrey (2005); Stetler, 2001). Research utilization can be direct and observable, as evidenced by policies, protocols or guidelines (Estabrooks, 1999a; Estabrooks, 1999c). Research utilization can be indirect and less tangible but demonstrated by change in one’s way of thinking or influencing a plan of action (Estabrooks, 1999a; Estabrooks, 1999c). Also research can be used to influence or persuade others’ opinion on an issue (Estabrooks, 1999a; Estabrooks, 1999c).

Although the terms *research-based practice* and *research use* were used in the EBP and research utilization literature, no explicit definitions have yet been found. However, both *research-based practice* and *research use* seem to be intertwined with research utilization as indicated in this definition,

“Research utilization can be defined very broadly as the use of research findings in any and all aspects of one’s work as a registered nurse... at its simplest it is the use of research. Instrumental research utilization is the direct application of research findings, often encountered in the form of procedures, clinical protocols, practice guidelines, standard care plans, new techniques and so on. It is the kind of research use most often meant when we write about or try to create research-based practice in clinical settings”(Estabrooks, 1999d, p. 277-278)

The term *research use* was selected for this study because the terms EBP and research utilization could have different meanings to different people. Also, *research use*

leaves open many possibilities of how research is used in the clinical teaching practice of the participants.

In the nursing literature, many discussions of the role of EBP in nursing were found (Estabrooks, 2001; Ingersoll, 2000; Royle & Blythe, 1998). Initially research was identified as the evidence to be used in evidence-based nursing, but increasingly other types of practice knowledge, for example case reports and expert opinion, now are accepted as other types of evidence when a sufficient research base does not exist (Bonell, 1999; Closs & Cheater, 1999; DiCenso, Cullum & Ciliska, 1998; Fawcett, Watson, Neuman, Walker & Fitzpatrick 2001; Mulhall, 1997; Mulhall, 1998; Polit & Beck, 2004; Titler & Cameron, 2005). Evidence-based practice represents a paradigm shift from practice based on tradition to practice based on evidence which has occurred throughout health care and certainly in nursing (Estabrooks, 2001; Pravikoff, Peirce & Tanner, 2003; Polit & Beck, 2004).

While Newhouse et al. (2005) acknowledge differences between definitions and concepts related to EBP, they suggest rather than emphasize the differences, time should be allowed for progress to consensus of what evidence based practice is defined as. Because the concepts overlap, rather than concentrating on literature specific to research use only, the broader concept of EBP and research utilization were also reviewed to provide an inclusive basis for the development of the study purpose and objectives.

Table 1

Definitions of Key Concepts

Evidence-based medicine	“is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett, Rosenburg, Gray, Haynes & Richardson, 1996, p.71).
Evidence-based nursing	“ is the process by which nurses make clinical decisions using the best available research evidence, their clinical expertise and patient preferences, in the context of available resources” (DiCenso et al., 1998, p. electronic)
Evidence-based practice	the College of Nurses of Ontario defines evidence-based practice as “ the integration of knowledge of the best available research, client preferences, resources, and clinical expertise when making decisions with a client about achieving the best possible health care” (2005, p. 15) “involves making clinical decisions on the basis of the best possible evidence. Usually, the best evidence comes from rigorous research, but EBP also uses other sources of credible information” (Polit & Beck, 2004, p. 673).
Research utilization	“ research utilization is concerned with research evidence only, and is therefore actually a sub-set, albeit a critical one, of evidence-based practice (Estabrooks, 1999d, p.286) “research utilization can be defined very broadly as the use of research findings in any and all aspects of one’s work as a registered nurse... at its simplest it is the use of research. Instrumental research utilization is the direct application of research findings, often encountered in the form of procedures, clinical protocols, practice guidelines, standard care plans, new techniques and so on. It is the kind of research use most often meant when we write about or try to create research-based practice in clinical settings” (Estabrooks, 1999d, p. 277-278)

Evidence-based Practice

The evidence-based practice movement began with evidence-based medicine (EBM) (Estabrooks, 2001). Evidence-based nursing developed later. Many of the evidence-based practice issues have been discussed in both the medical and nursing literature. During the literature review, emphasis was placed on nursing literature. Where relevant nursing literature was limited, medical and allied health literature was used to augment the literature review.

Key discussions of EBP in medicine will first be reviewed. In 1996, Sackett et al., defined EBM as “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” (p.71). Furthermore, the practice of evidence-based medicine “means integrating individual clinical expertise with the best available external clinical evidence from systematic research (Sackett et al., 1996, p. 71). Sackett et al. (1996) concluded EBM would further develop as it is used in medical education programs and adapted to meet the learners’ needs. Medicine has been using clinical practice guidelines (CPGs) for the past decade as a strategy to assist practitioners with EBP. Although CPGs are firmly planted in the literature and in the minds of clinicians, there are still difficulties with implementation of recommendations into practice (Davis & Taylor-Vaisey, 1997). Aside from initial dissemination, the CPGs need to be reinforced by strategies facilitating adoption and educational methods that are practice and community based (Davis & Taylor-Vaisey, 1997).

A systematic review by Oxman, Thomson, Davis and Haynes (1995), looked at factors that affect adoption of CPGs among physicians. Interventions reviewed included conferences, outreach visits, local opinion leaders, patient-mediated interventions, audit

feedback and reminders, and marketing. Oxman et al. concluded rather than using single interventions, using a combination of strategies was more likely to have a significant effect. Lomas et al. (1991), suggest dissemination strategies containing an educational component with a specific focus are more likely to effect behaviour change. Furthermore, Lomas et al. found use of opinion leaders resulted in improved quality of care for obstetrical patients.

A systematic review by Grimshaw et al., (2004) looked at effectiveness and costs related to different guideline dissemination and implementation strategies using 235 studies. Due to a lack of “high quality” studies using economic evaluations of guideline dissemination strategies, the authors were only able to suggest decision makers weigh the costs and benefits in their specific contexts when choosing which guideline to introduce. Regarding guideline dissemination, the authors suggest strategies should be selected after assessment of barriers and supports for the proposed change. Grimshaw et al. (2004) mention less costly interventions like reminders and passive dissemination of guidelines, although less effective, may need to be considered instead of more costly but more effective ones.

Factors Inhibiting or Facilitating Use of Research Evidence by Nurses

Factors inhibiting or facilitating use of research evidence are described extensively in nursing literature (Titler & Everett, 2001). Strategies for producing improvement in use of evidence in practice have also been explored. Funk et al. (1991) developed and circulated a questionnaire to 5,000 nurses in the United States. Based on the results from 1,989 nurses, Funk et al. identified the barriers to research utilization (RU) as characteristics of the a) the adopter, b) the organization in which the individual

works, c) the communication of the innovation, and d) the innovation itself. These four categories of Funk et al. were based on the major concepts of Roger's Diffusion of Innovation Theory (Funk et al., 1991). As described by Rogers (2003), the main elements of the diffusion of new ideas are the innovation, the communication channel, time and the social system. As Funk et al (1991) elaborate, in context of application of research findings to practice, the categories are the characteristics of; a) the nurse, b) the setting, c) the communication: presentation and accessibility of the research, and d) the research itself.

As the Barriers to Research Utilization Scale developed, Funk et al. (1995) summarized consistent challenges to RU by nurses in a variety of roles and over time as being, "limitations in the setting, the nurse's research values and skills, how the research is communicated, and the quality of the research itself..."(p.399). Several authors have investigated the barriers to RU, using Funk et al.'s (1991) BARRIERS Scale in different countries and with nurses in a variety of clinical, administrative, and supportive roles (Dunn et al., 1997; Kajermo, Nordstrom, Krusebrandt & Bjorvell, 2000; McCleary & Brown, 2003; Retsas, 2000). The results emphasized that many factors at the individual and organizational level affect research utilization. Dunn et al. (1998) found similarities comparing American nurses to those in the United Kingdom. However nurses in the United Kingdom were less confident in evaluating research while nurses in the United States perceived the nurse as having less authority to change patient procedures.

The review of the literature related to barriers and supports for using health care research in practice will be organized using the categories: a) characteristics of the nurse (adopter); b) characteristics of the setting (organization or social system); c)

characteristics of the communication: presentation and the accessibility of the research (communication); and d) characteristics of the research.

Characteristics of the Nurse (Adopter)

Several studies have looked at why research is not used by nurses. Barriers to research utilization and evidence-based practice in nursing, at the individual nurse level, include lack of educational training and research skills (Pearcey, 1995; Pravikoff et al., 2005), attitudes towards research, motivation, and resistance to change (Pravikoff et al.; Polit & Beck, 2004). Many have indicated that nurses' educational preparation to use nursing research in practice was not sufficient (Dyson, 1997; Pearcey, 1995). Retsas (2000) recommends future investigation, both qualitative and quantitative, to identify the extent of and process of actual research use in nursing practice. Estabrooks, Floyd et al. (2003) in a systematic review of studies examining individual characteristics of nurses and how they affect research utilization found attitude toward research as the only factor with a consistent pattern of positive relationship to research use. Estabrooks, Floyd et al. (2003) recommend there is a need for interdisciplinary sustained programs of research to be developed which consider not only individual determinants but research characteristics and organizational factors.

A recent study, Pravikoff et al. (2005), found lack of valuing of research use in practice by practicing nurses is still a major barrier. Pravikoff et al. surveyed, using a stratified random sample, nurses in the United States. They report that 760 respondents, who worked in a clinical setting, ranked first "lack of value for research in practice" in the order of importance of individual barriers (other than time) to using research in practice. Other individual barriers to research use ranked highly were "lack of knowledge

about research”, “lack of search skill”, “difficulty understanding research articles” and a “lack of skills to critique and synthesize the literature”. The nurses also identified their lack of search skills, lack of computer skill, and lack of understanding of the organization or structure of electronic databases.

A shortage of role models, nurses who use or promote use of research in clinical practice, is a barrier to evidence-based practice. Small group discussion with educators and practitioners together, as a way of learning to appraise research for use in practice, is suggested by Seymour, Kinn and Sutherland (2003). Furthermore, often nurses “don’t perceive themselves as independent practitioners capable of recommending changes based on research results” (Polit & Beck, 2004).

Characteristics of the Setting (Organization or Social System).

The context or culture in which research use by nurses occurs was identified in the literature and included research use being valued and supported at all levels in the organization. Retsas’ (2000) study of 400 Australian hospital based registered nurses using Funk’s Barriers scale found the most significant barriers to using research evidence were: a) insufficient time to implement new ideas on the job and b) insufficient time to read research. Retsas’ barriers are related to the organization. The importance of context as a variable was highlighted to explain differences from other studies using the Barriers Scale (Retsas, 2000). Since rank order generated by studies of American (Funk et al., 1991), Swedish (Kajermo, Nordstrom, Krusebrandt, & Bjorvell, 1998) and Australian nurses (Retsas & Nolan, 1999) differ, Retsas (2000) concludes that the barriers instrument is sensitive to different contexts rather than lacking internal consistency reliability.

LeMay et al. (1998) used semi- structured interviews with 21 practitioners and nine managers to find out nurses' thoughts, attitudes and valuing of research use in their practice setting. They found culture to be central to use of research in practice. Participants cited nursing colleagues as creating barriers to research practice. Although the study did not include educators, implications for education were identified and included preparing nurses to access and critically evaluate research and strengthening links among educators and the health care organization.

Closs and Cheater (1994) identify the need for administrative support and infrastructure to provide resources and support to all levels in the organization to create a positive research culture. Pravikoff et al. (2005), found many nurses did not find research use valued as a priority of the organization they worked in. Barriers in the organization included; other goals at higher priorities, budget for acquiring information resources and budget for training in resource use. The nurses also identified, as individual barriers, lack of access to computer or library and difficulty accessing research materials. These barriers while identified as individual barriers, clearly indicate the need for the organization to make access to computers and library available to nurses.

Newhouse et al. (2005) report an innovative process of implementing an evidence-based practice model in the nursing program at John Hopkins University and hospital. In conclusion, the authors emphasize the importance of commitment at the administrative level to provide time and resources to support the implementation of evidence-based practice. Although use of the model in education had been limited, more was planned. Unfortunately, little detail related to use of the model in nursing education is provided in the article. Aside from this article, no article was found discussing effect of

setting or context on clinical teachers' use of research. There is a gap in the literature related to the effect of setting /context on using research in teaching.

Characteristics of the Communication: Presentation and Accessibility of the Research (Communication)

Lack of reporting of research is a barrier to the results being used (Polit & Beck, 2004). Furthermore, lack of randomized clinical trials in many areas of nursing is also a barrier (Simpson, 2004). For research evidence to be used, Simpson (2004) asserts, evidence must be easily accessible to nurses. Clinical guidelines are one way to incorporate evidence into nursing practice (Thomas, 1999). Practice guidelines are common throughout the health sciences. Much of the literature on the use of clinical guidelines originates from medicine (Davis & Taylor-Vaisey, 1997; Oxman et al., 1995); use of practice guidelines in nursing is more recent. Clinical practice guidelines have been developed to help the practitioner make use of current evidence in practice. Although the quality of these guidelines should be critically assessed (Graham et al., 2001; Graham, Harrison, Brouwers, Davies, & Dunn, 2002; Polit & Beck, 2004), the guidelines offer reviewed research results and offer guidance to the practitioner. For guidelines to be effective, certain characteristics should be in place including validity, reproducibility and clinical flexibility and meticulous documentation (Thomas, 1999). To be valid, the guideline must be developed based on best available evidence to ensure the benefits predicted are achieved. For a guideline to have reproducibility, another group developing guidelines would promote the same recommendations. Thorough documentation should include a record of participants in the development process, how decisions were made and which evidence contributed to each recommendation (Thomas,

1999). Furthermore, the need for integrative reviews to be evaluated for their currency, accuracy and applicability and validity has been articulated (Graham et al., 2001; Graham et al., 2002; Polit & Beck, 2004).

Funk et al. (1995) identify the need for efficiency in the research utilization process through evaluation of research “centrally within the nursing profession”. It should be reviewed and communicated regularly, be “readable and readily accessible by clinicians” and offer “key practice suggestions, discuss the relative advantages and disadvantages, and explore the parameters of adaptation for different clinical settings and populations” (p. 402-403). “Online access to research and syntheses” are also emphasized (Funk et al., p. 404). These factors identified as affecting nurses’ use of research should also be considered from the perspective of clinical teachers’ use of research. For example, from the perspective of clinical teachers’ is there a relationship between their use of research and how the research is communicated and if the research is accessible to them?

Accessibility to research findings has been improved by a number of strategies including evidence-based journals, systematic reviews and practice guidelines (DiCenso, et.al., 1998; McCleary & Brown, 2003, p. 371). The Cochrane Collaboration is one such development (Estabrooks, 2001). The Best Practice Guidelines (BPGs) developed by Registered Nurses Association of Ontario (RNAO) cover a variety of clinical topics and offer a more user-friendly form of research results to make RU a reality in clinical settings (Ferguson-Pare, Closson & Tully, 2002; Grinspun, Virani, & Bajnok, 2001-2002). Other nursing organizations have also developed clinical practice guidelines including the Association of Women’s Health, Obstetrics, and Neonatal Nurses

(AWHONN) (Polit & Beck, 2004). High quality integrative reviews are a critical tool for EBP (Polit & Beck) and avoid duplication and squandering of limited financial and human resources in the health care system (Funk et al., 1995; Polit & Beck).

Furthermore, guidelines, if followed, will increase the prevalence of research-based practice (Lemay et al., 1998). Only one article was found describing use of clinical practice guidelines by clinical teachers. Higuchi, Cragg, Diem, Molnar and O'Donohue (2006) report development of two workshops for integrating RNAO BPGs into education for clinical teachers. Based on comparison of pre and post workshop questionnaires, participants indicated increased understanding of BPGs, felt well prepared to introduce BPGs to students in the clinical setting, and were more confident in using BPGs in the teaching. Student survey results also indicated clinical teachers had introduced BPGs in their clinical course.

Characteristics of the Research (Innovation)

For many nursing problems there is a lack of a solid body or research evidence (Polit & Beck, 2004). Language used in research reports is described as “jargonistic” (Lemay et al., 1998; Polit & Beck). Similarly, Retsas (2000) identified barriers relevant to the research: a) the research not being relevant to the nurses’ practice; b) the research has not been replicated; c) conflicting reports of results; and d) the research has methodological inadequacies. Kajermo et al. (2000) identified similar barriers related to the research. Additional factors were: that the conclusions drawn for the research were not justified and the nurse was uncertain whether to believe the results of the research. No literature was found addressing the effect of characteristics of the research in nursing education.

Use of Research Evidence and Evidence-based Practice in Healthcare Education

Some studies were found related to introducing evidence-based practice in graduate level education in medicine and nursing (Coomarasamy & Khan, 2004; Curran and Roberts, 2002; Ross and Anderson, 2004). Papers describing ways of fostering EBP in preceptorship of students in midwifery and physiotherapy were found although they were not research articles (Erickson-Owens & Kennedy, 2001; Raisler et al., 2003). Articles were found that described how EBP was taught in the clinical setting in physiotherapy, medicine, nurse practitioner and midwifery programs (Curran & Roberts, 2002; Slavin 2004; Penciner, 2002: Steele, 2001). Teaching was described in the context of a one- to -one preceptor student interaction. However, clinical teaching in nursing undergraduate programs is usually done in small groups of between 6-8 students so the relevance of the findings to clinical teaching of nursing students is limited.

Although some articles describing the integration of research use and or evidence-based practice in baccalaureate nursing programs were found (Callister, et al., 2005; Herbener, 1994; Kessenich et al., 1997; Killeen & Barnfather, 2005; Newhouse et al., 2005), they did not explicitly discuss how clinical teachers use research in their teaching. However, an article was found (Higuchi et al., 2006) discussing a workshop to promote clinical teachers' use of clinical practice guidelines in their teaching. As part of the workshops, clinical teachers discussed barriers and drivers and developed strategies for integrating clinical practice guidelines into their teaching. However, the article does not identify specifically the barriers, drivers and strategies the participants developed.

A report of implementation of an EBP model at John Hopkins Hospital in Baltimore, Maryland (Newhouse et al., 2005) includes plans to integrate the same model

into the curriculum at the affiliated university school of nursing. However, no specifics are given other than that the model was developed in collaboration between nursing colleagues in the hospital and academic settings and reports that rating tools for evidence developed for nurses would be included in nursing courses. While the model offers a potential contribution to the use of research and or evidence-based practice in nursing education, a gap in knowledge exists at present.

Coomarasamy and Khan (2004), in a systematic review of post-graduate teaching of evidence-based medicine (EBM), concluded that teachers were able to effectively teach critical appraisal skills and EBM in clinical practice settings. Findings suggest that clinically integrating teaching of EBM in clinical education will create changes in knowledge, skills, attitudes and behaviours while stand- alone teaching effects knowledge only. Though the authors caution there are differences between post graduate and undergraduate learner characteristics in motivation, it seems reasonable to consider that similar results may be possible with undergraduates.

Curran and Roberts (2002) describe a nurse practitioner curriculum that fosters evidence-based practice. Within the curriculum, master's students are required to prepare EBP papers and use literature searches to prepare for case presentations. In the final year, a major paper is used to show the student's mastery of the process of evidence-based practice. Unfortunately, the authors do not describe the educator's role in assisting the learning of EBP. The authors mention didactic courses as well as clinical time. While preceptors are mentioned, clinical teacher involvement is not.

Ross and Anderson (2004) report a change in curriculum after the master's degree program changed to a doctorate level program in physical therapy. They report how

courses were revised to achieve integration of teaching research design with evidence-based practice and clinical decision-making. However, students at the doctoral level would have experience and expertise on which to base evidence-based practice and decision making while undergraduate nursing students do not.

Killeen and Barnfather (2005) implemented curriculum change, in a baccalaureate nursing program by using overlap between two courses to combine change and research utilization projects. Students identified a problem within a clinical setting and followed a systematic search for relevant literature and critically appraised it and lastly used change theory to design, plan, implement and/or evaluate the “change/innovation project”. Supervision for these projects, was shared by “clinical teaching associates” and “nurse leaders” in the clinical setting. However, a limitation is apparent since the students’ learning situation appears to be separate and distinct from clinical placements including patient care experience.

Callister et al. (2005) report the strategies used to foster evidence-based practice in a baccalaureate nursing program, as well as benefits and challenges. The program at Brigham Young University College of Nursing used several strategies to promote student learning of integration of evidence-based practice including students: a) writing assignments based on identification of “sacred cows “ of clinical practice; b) being mentored by a faculty member on a research team; c) critiquing published nursing research; d) developing a poster presentation of best evidence to answer a clinically relevant question; e) generating research questions based on clinical experiences; and f) completing clinical projects requiring a literature review of evidence, based on an identified clinical need. Student benefits, based on analysis of student reflective journals,

included increased interest in evidence-based nursing practice and becoming better consumers of research findings. The challenges, reported from a faculty perspective, include the amount of time and energy required to mentor a student. Faculty suggested the research course should be placed as early as possible in the curriculum. However, acquiring foundational psychomotor and psychosocial skills is the emphasis in the beginning of the program. Callister et al. (2005) state students need to have clinical experiences to understand the relevance of research.

In the literature reviewed, no research studies have specifically investigated barriers to teaching research use to baccalaureate nursing students by clinical teachers. However, Higuchi et al. (2006) do initially discuss the barriers to research use which their workshop was designed to address including unfamiliarity with clinical practice guidelines, lack of education regarding teaching/learning principles and strategies, and perception that use of evidence is time consuming and a low priority by clinical teachers and students. The clinical teachers being unfamiliar with clinical practice guidelines was also identified as a barrier. Also, barriers to teaching evidence -based nursing were described in a report of experiences with teaching strategies included in the curriculum of two separate undergraduate nursing programs (Kessenich et al., 1997; Kirchoff, 1984). Lack of education of faculty and lack of access to computerized databases in the clinical setting were identified as barriers to implementing EBP in nursing education (Kessenich et al.).

Kessenich et al. (1997) asserted learning evidence-based practice is essential for nursing students. Kirchoff (1984) identifies providing exposure to and experience with evidence- based practice as undergraduate students as a possible way of making

evidence-based practice a reality with professional nurses. In 1997, Kessenich et al., identified evidence-based practice in nursing as a new paradigm in nursing education, and stated that clinical nurse educators have not addressed the change. Lack of clinically relevant nursing research is identified as one of the biggest challenges that educators experience when teaching evidence-based nursing (Kessenich et al., 1997).

Very few studies were found that address the views of teachers about research utilization and EBP. A study by Bassett (1994) of nursing educators investigated their attitudes toward research in practice. Limitations of the study include the limited size (4 only) and also ambiguity of the term “nurse teacher”. The study done was done in England and it is unclear if the term “nurse teachers” refers to teachers of students or staff (1994). During interviews, Bassett found that nurse teachers felt nurses and nurse teachers were intimidated by research and felt insecure about their ability to interpret data and apply it to the practice setting.

Herbener (1994), in a descriptive study, looked at integrating nursing research findings into the curriculum. Nursing faculty, who taught in associate, baccalaureate and master’s degree programs, responded very positively to attitude and belief statements related to nursing research findings. Also identified were commonly used strategies for integrating research findings into the curriculum including for example, requiring readings of research articles and questioning students about the scientific rationale of policies and procedures. Herbener identifies study limitations as potential overreporting, sample not necessarily being representative and bias because the respondents were selected by faculty administrators. Herbener’s study does not specify whether the respondents taught the clinical portion and or classroom portion of the curriculum or

both. Also, use of nursing research findings in the curriculum is the article focus. This emphasis on research utilization predates the current emphasis on evidence-based practice. However, the Herbener study does inform this study as it identifies teaching strategies and assignments used to teach nursing research findings. It also compares the use of program objectives relevant to research use by program type.

Nursing Clinical Teaching Practice

Since only a few articles were found specifically discussing the nursing clinical teachers' use of research in their practice, the literature relevant to nursing clinical teaching practice in general was reviewed. The goal of nurse educators is to prepare practitioners with the knowledge and skills to practice based on current state of knowledge but also to build the capacity for life-long learning (Reilly & Oermann, 1992). Teaching in the clinical setting is described as being distinct from classroom (Karuhije, 1997; Reilly & Oermann, 1992). Clinical instructors are often chosen for their clinical experience, yet many novices lack awareness of the skills and competencies required and tend to feel inadequately prepared to meet the challenges of clinical teaching (Scanlan, 2001). Clinical instructors influence student nurses in their attitudes and practice. Results of a study by Campbell, Larivee, Field, Day, and Reutter (1994) suggest that clinical instructors have more influence than classroom teachers. The clinical instructor is crucial in developing and implementing an effective learning experience for the students (Oermann, 1998b).

Some literature describes, the student being taught by a nurse educator but also by nursing staff or preceptor (Crotty 1993; MacCormick 1995) (see footnote 1). The nurse teachers in England (Crotty, 1993) did not teach the students at the bedside. Instead, the

interviewed nurse teachers saw their role as liaison between the clinical area and the school, the staff and the students, as well as a clinical link in organizing the clinical experience.

Scanlan (2001) states, the complex phenomenon of clinical teaching in nursing, “lacks a coherent theoretical base” (p. 240). However, Foulds (2004) research identified clinical teaching practice as a boundary practice. Clinical teachers’ boundary practice bridges the two spheres of educational practice and clinical practice. A model of clinical teaching practice developed by Foulds is described in the theoretical background section later in this chapter.

Characteristics of the Ideal Clinical Teacher

The characteristics of the ideal clinical instructor have been explored in a series of studies. Much of the literature related to the role of clinical instructor arose in response to changes in the delivery of nursing education from hospital-based education to centres of “higher learning” in the United Kingdom and Australia. During interviews with nurse teachers, in the United Kingdom, Bassett (1994) reports that the teachers identified establishing clinical credibility as essential. Developing good rapport with nursing staff through good communication is important. Clinical credibility is also an issue identified by Ferguson and Jinks (1994). The effect of clinical nurse teacher characteristics on use of research in teaching has not been identified in the literature. Perhaps the same characteristics needed to be an ideal clinical teacher could be necessary for a teacher using research with students.

The need for clinical teachers to be clinically experienced, competent and skilled in clinical teaching has been identified in the literature (Gillespie, 2002; Lee, Cholowski

& Williams, 2002). Crotty (1993) found that nurse teachers identified clinical credibility as having current knowledge of theory but not being an expert practitioner. None of the 12 participants in her study were currently doing any clinical teaching involving patient care with the student but were involved only at the level of liaison between the educational institution and the clinical setting¹. The clinical credibility mentioned throughout the article never mentioned the context of the credibility. For example, whom did the teachers perceive to be judging their clinical credibility - students, staff nurses or the educational institution? It appears clinical credibility was only described generally by the teachers from their own perspective without specific meanings of clinical credibility being explored. This study was done in Great Britain as a follow up after a change in responsibility for clinical teaching in basic nursing programs moved from the hospital setting to the educational institution as part of Project 2000 (Crotty, 1993). MacCormick (1995) proposed a “practice teacher” who would be employed in the practice area, who would be responsible for the learning program of the student while not always directly teaching the student. MacCormick identifies practice teachers’ responsibilities as divided into four broad categories: a) assessment of learning needs; b) planning to meet identified needs; c) implementation of teaching and learning plans; and d) evaluating teaching and learning. Those responsibilities, it can be argued, describe the responsibilities of clinical instructors today. MacCormick does not specifically identify use of research as part of those practice teacher responsibilities.

¹ Footnote 1 Alternate titles for clinical teachers used in the literature
Names used, in the literature to describe teachers in the clinical setting include practice educator (Field, 2004), practice teachers (MacCormick, 1995), clinical nurse instructor, Mogan & Knox, 1987) and nurse tutor (Crotty, 1993).

The literature search has not found any exploration of clinical instructors' perceptions of and experience with integrating research, evidence-based practice, or clinical practice guidelines into their teaching of nursing students. Furthermore, barriers and supports clinical instructors and their students anticipate or have encountered when using research have not been reported. For example, the significance of time issues on research use mentioned in studies of nurses may also be relevant for the clinical instructor whose time is limited and who must balance needs of the students, patients and staff nurses in the clinical area.

The characteristics of a "good", "bad", or "ideal" clinical nurse instructor (CNI) were evaluated first in work by Mogan and Knox (1987). The Nurse Clinical Teacher Effectiveness Inventory (NCTEI) developed from work by Mogan and Knox has been used in several studies including Lee, Cholowski, and Williams (2002) and Allison-Jones and Hirt (2004). These studies offer insight into the perceived importance of research use. Use of research in clinical practice was either not reported (Allison-Jones & Hirt) or was given low priority ranking by students (Lee et al.). Lee et al. asked Australian nursing students and clinical nursing teachers to rate the characteristics of an effective clinical instructor. Consistently, the items that were ranked highest were related to "nursing competence" which includes "is a good role model" and "enjoys nursing". Notably, Lee et al. also found items in the "nursing competence" subscale which appear to be relevant to EBN "directs students to useful literature in nursing" and "discusses current developments in his/her field" were two of the ten lowest rated of 48 characteristics by clinical educators. Furthermore, items also from the nursing competence subscale, "directs students to useful literature in nursing", "reveals broad

reading in his/her area of interest”, and “discusses current developments in his/her field” are among the 10 lowest – rated characteristics rated by students. Despite study limitations, results suggest EBP is not highly valued in a clinical instructor by students and clinical instructors themselves.

Roles of a Clinical Teacher

In the literature, contributions of teachers as facilitators and role models were found. Also, the challenges encountered by clinical teachers, the importance of establishing relationships with students and establishing competency with nursing staff were identified in the literature. One role of the teacher in the clinical setting, identified by students, is facilitator (Oermann, 1998b). In a study of student nurses’ clinical experiences, participants identified the teacher as the predominant stressor as well as the primary facilitator of learning in the clinical setting (Oermann). Furthermore, student respondents identified clinical teachers who facilitated learning as clinical experts who helped them apply theory to their patient care (Oermann). The clinical teacher plays a fundamental teaching role pivotal in planning and providing an effective clinical learning experience for students (Oermann). The study findings and conclusions support the importance of students’ application of classroom learning in the clinical experience and the importance of the role of clinical teachers’ facilitation of student learning (Oermann, 1998b). In a study of nursing students’ assessment of factors contributing to a clinical learning environment the student’s relationship with the clinical instructor was identified as important, particularly in using innovative teaching strategies and in respecting the students as individuals (Chan, 2001).

The significance of the clinical instructor as a role model is also found in the literature. Clinical instructors influence student nurses in their attitudes and practice. Nursing students, in a study by Campbell et al. (1994), identified clinical instructors who were organized, encouraging, and developed effective relationships and demonstrated excellent nursing practice as positive role models. Furthermore, the students identified the clinical instructors as most influential affecting attitudes and facilitating learning in the clinical environment (Campbell et al., 1994).

Challenges encountered by clinical instructors have been described in the literature. Based in the clinical practice settings, clinical instructors are far removed from the university with little opportunity to interact with other faculty (*educators*). Few clinical instructors are prepared educationally for their role (Oermann, 2004). Oermann (1998b) concludes faculty need to be prepared for clinical teaching. Professional development opportunities specific to their teaching are very limited, if available at all. Oerman (2004) stresses that faculty development activities can be used to “help educators integrate new ideas and strategies into their teaching practices.” Faculty should be supported through faculty orientation programs (including mentorship) and faculty development opportunities (Finke, 2005).

Paterson (1997) described the relationship of the students and teacher to the clinical area as a “temporary system within the permanent culture of the clinical area in which they teach” (p. 197). The ethnographic study of six clinical teachers was set on medical- surgical units in three urban Canadian hospitals. The participants identified “territoriality, separateness, defensiveness and distinct patterns of intergroup communication as consequences of being a temporary system” (p. 200). Participants, in

an effort to establish relationships with staff, engaged in negotiation or courting behaviour to establish credibility and acceptance.

Similar to Paterson (1997), participants in Foulds' (2004) study described negotiation strategies to establish competency with nurses in the clinical setting. Also, Corlett (2000) sees the clinical teacher, as belonging to both the clinical and education worlds and as "ideally placed to promote the relation of theoretical knowledge to practice." Since the literature identifies distinct challenges and contributions of teachers in clinical settings, one of the current study's objectives will be to explore factors that impede or facilitate clinical teachers' use of healthcare research in their teaching.

Strategies for Teaching

Rowles and Bingham (2005), identify strategies that can be used to facilitate active learning and development of critical thinking skills in nursing students. Strategies include algorithms, debate, case study, collaborative learning, demonstration, peer sharing, problem based learning, clinical logs, and writing. Practicing nurses must be able to think critically as the health care environment is dynamic. Faculty must integrate opportunities to think critically into learning activities so that student will develop appropriate critical thinking skills (Rowles & Bringham, 2005). Nursing students do not yet possess the expertise of practicing nurses. However, students' group problem solving (problem based learning (PBL)) that already exists within the curriculum (Morales-Mann & Kaitell, 2001), could potentially provide the student with experience to combine current credible research findings with problem solving and critical thinking skills related to problems they experience in the practice setting.

Therefore the results of the literature review demonstrate there is a gap in knowledge related to how clinical teachers use research in their teaching practice with baccalaureate nursing students.

Theoretical Background

In a review of the literature, no theories, models or frameworks specific to research use in nursing education were found. However, theories were found in respect to research use and clinical teaching practice and were used to inform the study and influence the development of the study objectives and open-ended interview questions.

Several relevant models and frameworks were reviewed and provided theoretical background for the study. Consistent with Miles and Huberman (1994), review of relevant theory helped to identify concepts important to the study. First several research utilization frameworks were studied including The Stetler Model (Stetler, 2001), The Iowa Model of Evidence-based Practice to Promote Quality Care (Titler et al., 2001), the Multidimensional framework (Kitson, 1999; Kitson, Harvey, McCormack, 1998) and The Ottawa Model of Research Use (Graham & Logan, 2004; Logan & Graham, 1998). Also, other frameworks relevant to teaching and clinical teachers were reviewed and provided theoretical background for the study. These frameworks were the Model of Clinical Teaching Practice (Foulds, 2004) the Concerns Based Adoption Model (Hall & Hord, 1987) and the Learning/adoption trajectory (Sherry, Billig, Tavalin, & Gibson, no date).

Models Related to Evidence-based Practice and Research Use

The Stetler model, initially a model of research utilization has been revised within the context of evidence-based practice (Stetler, 2001). The Stetler model, was originally a practitioner- oriented model focusing on activities of the practitioner to determine

appropriateness, desirability, feasibility and manner of using research findings. It now gives direction for groups responsible for research utilization and evidence-based practice as well. The model assumptions are: a) the organization may or may not be involved in an individual's utilization of research; b) utilization may be instrumental, conceptual and/or symbolic level; c) decision-making is likely to be based on a combination of research findings with other types of evidence and /or non research information; d) internal and external factors can influence an individual's or group's view and use of evidence; e) research and evaluation provide us with probabilistic information, not absolutes; and f) lack of knowledge and skills pertaining to research utilization and EBP can inhibit appropriate and effective use.

The Stetler model is a guide to the process of research use by practitioners. Critical thinking and problem solving are essential to the process (Ciliska, DiCenso, Melnyk & Stetler, 2005; Stetler, 2001). A key assumption of the model is the importance of recognizing the influence of context and personal factors on research use by the practitioner (Ciliska et al., 2005).

The Iowa Model of Evidence Based Practice to Promote Quality Care (Titler, Steelman, Budreau, Buckwalter & Goode, 2001) is a model for organizations to guide in the process of evidence-based practice. The Iowa model was originally a research-based practice model (Titler, Mentes, Rakel, Abbott & Baumler, 1999) but has been revised to include other types of evidence (Ciliska et al., 2005; Titler & Cameron, 2005). The model emphasizes the importance of supports at every level of the organization (Ciliska et al., 2005).

The Multidimensional framework (Kitson, 1999; Kitson et al., 1998) emphasizes the importance of the organization in the success of research utilization (Ciliska et al., 2005). The successful implementation of EBP is a “function of the relationship between the nature of the evidence, the appropriateness of the context in which the change is to be implemented and the characteristics of the facilitation mechanism used to introduce the change” (Ciliska et al.) The elements of evidence, context and facilitation are multidimensional and interactive (Ciliska et al.; Kitson et al.).

The Ottawa Model of Research Use (OMRU) (Graham & Logan, 2004; Logan & Graham, 1998) is a model to inform efforts to implement interdisciplinary use of health care research by practitioners, policy makers and researchers (Graham & Logan 2004; Titler & Cameron 2005). The Ottawa Model of Research Use (Graham & Logan, 2004) is shown below as figure 1. Similar to the other models reviewed, the importance of context is emphasized. However, The OMRU is not as prescriptive and step-by-step as the Iowa and Stetler models. Key assumptions of the OMRU are: a) it is “dynamic” rather than a “sequential stage model”; b) “all elements influence and are influenced by the others”; and c) societal and health-care external environments will affect all aspects of the process” (Graham & Logan, 2004, p. 93). The OMRU provides more direction about factors affecting the use of research than any of the other models reviewed. The six components of the model are: a) the practice environment; b) potential adopters; c) the evidence-based innovation; d) transfer strategies; e) adoption; and f) the health related and other outcomes. Assessment, monitoring and evaluation occur continuously. Barriers and supports are identified and strategies are developed to promote research use (Logan & Graham, 1998; Titler & Cameron, 2005). A key component of the model is

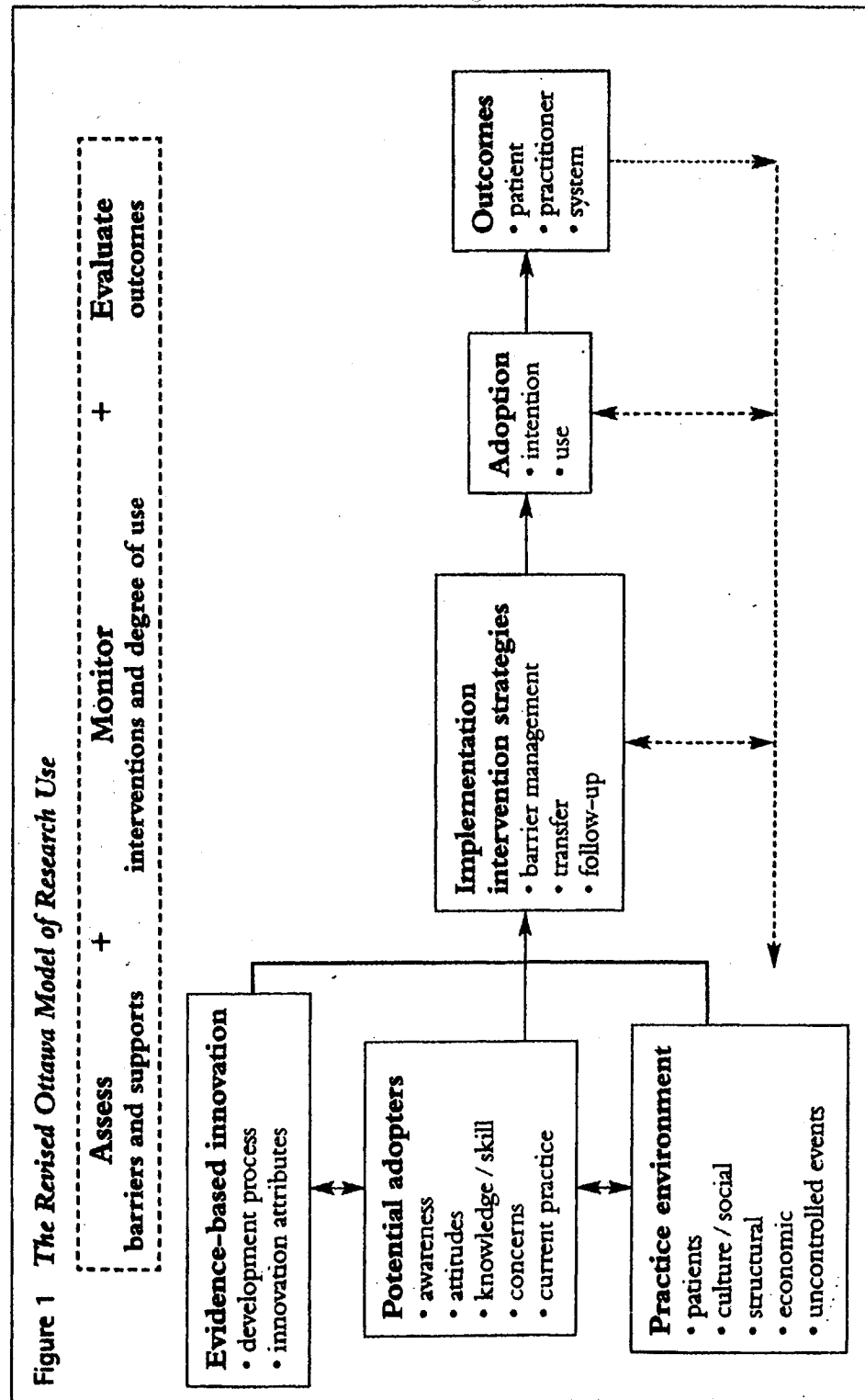


Figure1 The Ottawa Model of Research Use

Graham, I. & Logan, J. (2004). Translating research. Innovations in knowledge transfer. *Canadian Journal of Nursing Research*, 36(2), 89- 103. (used with permission ... see Appendix A)

assessment of potential adopters and the practice environment for barriers and supports (Graham & Logan, 2004). Graham and Logan (2004) state the OMRU “can be used as a broad based model” and acknowledge the appropriateness of including “micro-range theories specific to some of or all of the OMRU broad elements” (p. 99).

The Ottawa Model of Research Use (OMRU) was used in this study to provide a theoretical framework to consider how health care research is being introduced to the undergraduate nursing clinical teaching. The OMRU has been used to guide implementation of innovations in a variety of clinical practice settings (Hogan & Logan, 2004). However, use of the OMRU in an educational setting has not been found in published literature. A limitation of the OMRU is that it is not specifically about clinical teaching.

The OMRU is more detailed than the Multidimensional framework (Kitson 1999; Kitson et al, 1998) and assumes dynamic interactions among people. Patients play a key role in the process and societal and healthcare environments will affect all parts of the process (Graham & Logan, 2004). In short, it provides a framework to understand the context of research use by individuals and in the context of this study is considered to provide a framework to assess the context of research use from the perspective of nursing clinical teachers.

The study will explore the use of health care research in clinical teaching practice. OMRU provides a useful initial framework to understand factors that interact and affect the use of health care research (the innovation) in clinical teaching practice. Clinical teachers are potential adopters within the OMRU framework. According to the Model, the potential adopter should be assessed to identify factors that might promote or impede

uptake (Graham & Logan, 2004). The assessment should include the potential adopters' "awareness of the innovation, attitude toward the change generally and specifically to the innovation, any skills and experience they might have that could be required in the implementation of the innovation, their concerns about the proposed change and the intentions to adopt or use the innovation" (p. 96). Also, "their current practices or habits should be determined, as these could indicate the gap between current practice and that which will be required if the innovation is adopted" (p. 96). The interests of potential adopters of evidence vary according to who they are. For this reason, the OMRU emphasizes the need to view the proposed change from the potential adopters' perspective. Data collected can be used to "create a profile of adopters focusing on potential barriers and supports to research use" (Logan & Graham, 1998, p. 232). The first, third, and fourth objectives of the study may provide information that is relevant in the context of the OMRU.

Review of the models contributed to the study purpose and objectives. While none of the theories related to research use and evidence use is specific to education or clinical teaching, the importance of context and assessment of factors affecting research use resonated with me. The need to assess the potential adopter or user of the research and the factors affecting the user focused my attention on the perspective of the clinical teacher.

Models Relevant to Teaching

Foulds (2004) studied clinical teaching as a boundary practice between the educational setting and the clinical setting. The model of clinical teaching practice was developed following analysis of focus group and individual interviews. Foulds noted that

clinical teachers established relationships and used negotiation and reconciliation strategies to balance the priorities expected of the two practice communities- teaching and nursing. When unsure, teachers looked for support from others on “how to bridge the expectations of education and nursing” (p. 84). The model of clinical teaching practice shows the distinct practice communities of education and nursing overlapped or bridged by the boundary practice of clinical teaching (see figure 2).

Within the boundary practice are concentric circles representing the relationships, strategies and competency of clinical practice. Two-way arrows indicate strategies and relationships, which bridge education and nursing practice. The interconnectedness of the boundary practice with the practice communities is shown by dotted lines. The model of clinical teaching practice and the findings it represents support the importance of exploring nursing clinical teaching practice. The complexity of clinical teaching practice shown by the model indicates further study is warranted when considering how clinical teachers would include health care research in their teaching. Furthermore, Foulds suggests further research investigate what factors “impede the practice of clinical teaching”. Foulds findings provide a framework to understand clinical teaching practice. However, a study limitation is the small number of participants (nine in the focus group and four in single interviews). The model developed by Foulds is significant to the study of research use in nursing clinical teaching practice as it provides insight into the relationships and interconnectedness between education, nursing and clinical teaching practice. After reviewing Foulds’ research, I was more aware of the significance of both the educational and practice settings to nursing clinical teaching practice.

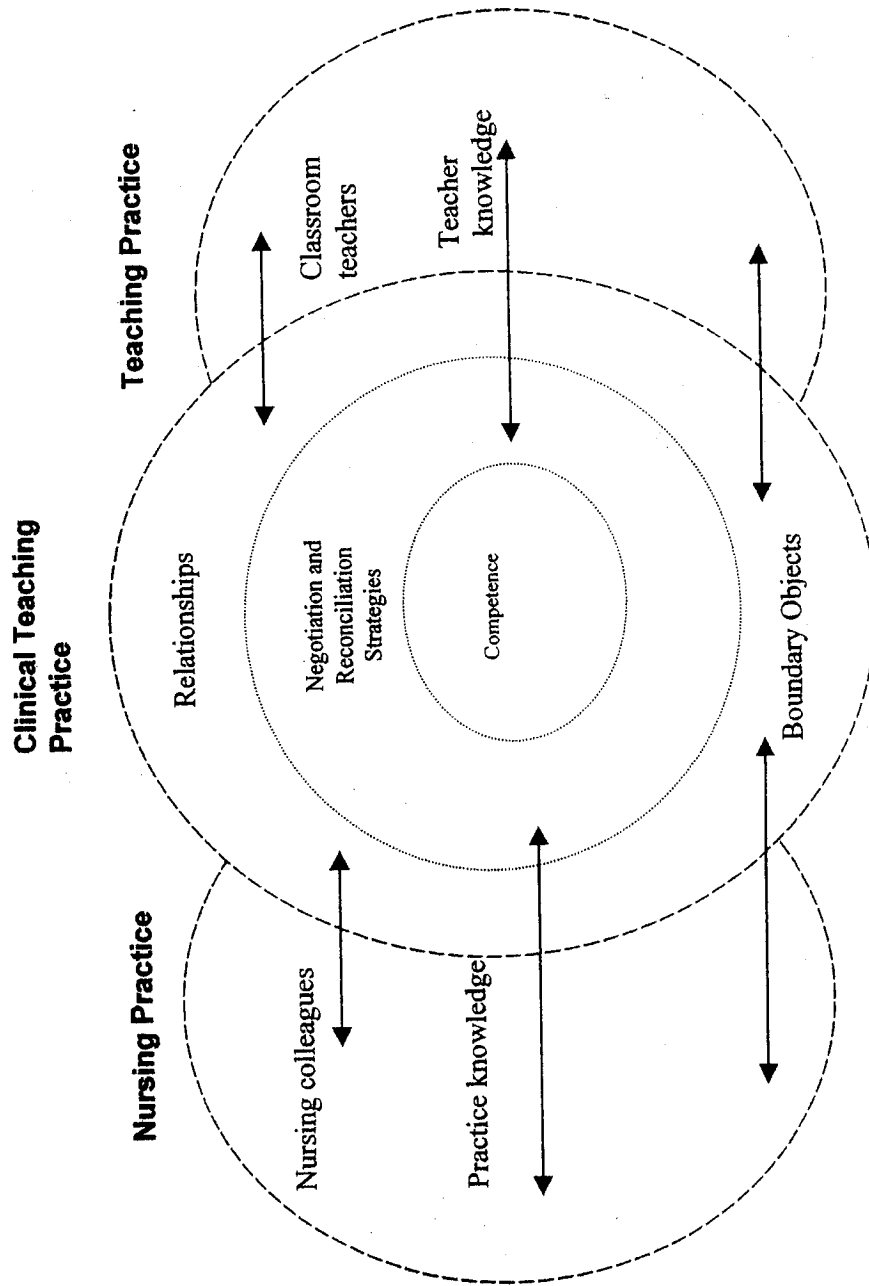


Figure 2. Model of Clinical Teaching Practice

Foulds, B. J., 2004. Communities of practice: Clinical teaching in professional nursing education. Unpublished doctoral dissertation. McGill University, Montreal, Quebec, Canada. (used with author's permission see Appendix B)

Another relevant model is the Concerns-Based Adoption Model (CBAM) (Hall & Hord, 1987). CBAM is a conceptual framework that describes, explains and predicts probable teacher behaviours in the change process. Developed as an educational framework for planning staff development for elementary and high school teachers, a basic premise of CBAM is that before planning an educational event, it is important to determine the concerns of the target group. The model proposes “people considering and experiencing change evolve in the kinds of questions they ask and in their use of whatever the change is”(Loucks-Horsley, 1996). The seven stages of concern about an innovation in progression are awareness, informational, personal, management, consequence, collaboration and refocusing. The CBAM also describes corresponding levels of use of the innovation termed non-use, orientation, preparation, mechanical, routine, refinement, integration and renewal (Hall & Hord).

The CBAM has been used in a study of nurse educators concerns regarding curriculum changes (Nomthandazo, 1996). The importance of assessing the teachers' concerns prior and during a change in practice as described in the CBAM has relevance to the present study. Using research in practice may be a change in practice for clinical teachers. Review of the CBAM reinforced the need to ask clinical teachers about their concerns with using research in their teaching. Investigating clinical teachers' concerns would contribute to an understanding of their practice.

The Learning Adoption Trajectory (LAT), developed by Sherry et al. (no date), indicates how teachers adopted technology and how they in turn used it in their teaching. The model was developed as part of a project that involved teaching innovations such as the internet, the worldwide web, and online learning technologies to teachers for their use

in teaching students. Teachers were teaching in middle and high school classrooms in Vermont. Similarities to the present study include that the innovation was always changing and was a continuous learning process for all users, whether novice or expert (Sherry et al., no date). Research knowledge is always expanding and often seeking the research evidence requires data gathering through electronic sources. Teachers of nursing students may need to learn or refine search skills and knowledge of current research while they are teaching their students to use research findings. The model describes a cyclical process with teachers moving through the developmental stages of teacher as learner, teacher as adopter, teacher as co-learner, teacher as reaffirmer or rejector and teacher as leader. Although this model did not directly affect the study objectives, it added to my background knowledge of related theory.

Summary of Literature Review

Several studies have investigated factors influencing nurses' use of research evidence. Nurses lacked confidence and experience with using research in practice. Nursing education has the potential / responsibility to prepare nurses to be able to use research in their practice.

Models and frameworks related to research use and evidence-based practice indicate the complexity of the process of using research. For nurses to be confident using research evidence in their practice they need to be prepared in their basic education. There is little research about how health care research is used in nursing education. More specifically, no literature was found investigating how research is used in clinical teaching practice in undergraduate nursing programs especially from the clinical teachers' perspective. Clinical teachers are in a position to help students to learn to use

research in the clinical practice component of nursing education. There is a lack of theory and research related to factors affecting how health care research and evidence-based practice is used in nursing clinical teaching practice.

This qualitative study aims to provide nursing knowledge related to use of health care research in nursing education, specifically in clinical teaching from the perspective of the clinical teacher. As a result of the literature review and the recognition that little is known about how clinical teachers integrate research findings, the study objectives were developed.

Chapter Three - Methods

Study research method will be reviewed in this chapter. The selection of the research approach, procedures for sample selection, data collection, interview process and data analysis are described in detail.

Selection of Research Approach

As indicated in the review of literature, there is a distinct gap in knowledge related to research use in nursing clinical teaching practice. Qualitative research is appropriate where there is limited knowledge on a topic of interest (Morse & Richards, 2002; Polit & Beck, 2004). The study objectives, consistent with the goals of qualitative research, were to uncover knowledge about how people think and feel about their circumstances (Thorne, 2000). Furthermore, qualitative research “allows the researcher to generalize to a theoretical understanding of the phenomenon being examined” (Ploeg, 1999, p. 36). As Lemay et al. (1998) emphasize, qualitative data may provide a deeper understanding of the complexities of research utilization.

The grounded theory approach was chosen as the best fit with my study purpose and objectives. The grounded theory approach is appropriate when a researcher seeks to understand from participants a process or a situation (Morse & Richards, 2002, p. 55). I wanted to understand from the clinical teachers’ perspective, the process of using research when teaching students in the clinical area and the factors affecting their use of research in their teaching.

Grounded Theory Approach

The primary purpose of the grounded theory approach is to generate comprehensive explanations of phenomena, which are grounded in reality (Polit & Beck

2004; Strauss & Corbin 1990). Rather than beginning with a theory, the researcher starts with an interest area for study and what is relevant emerges from the data (Strauss & Corbin, 1990). The assumption of grounded theory is the researcher can build theory grounded in data by exploring the data in a thorough manner and by sensitively detecting themes and theory (Morse & Richards, 2002). The theory develops with constant comparison during concurrent data collection and analysis (Strauss & Corbin, 1994). The grounded theory approach uses a system of procedures to inductively develop theory about a phenomena derived from and grounded in the data (Strauss & Corbin, 1990). The grounded theory will often be limited in scale and scope (Morse & Richards).

Grounded theory has two main approaches. The first approach was published by Glaser and Strauss (1967) and a second approach was published by Strauss and Corbin (1990, 1998). A fundamental difference between the two versions determined which approach I used. Glaser stressed that the study phenomena must be derived from the data as opposed to starting with a focused research problem. In contrast, Strauss and Corbin (1990) recognized other sources for research questions including the literature or researcher experience (Polit & Beck 2004, p. 584). Since this study's purpose was developed following identification of an interest based on my experience, a review of the literature, and the identification of a problem, the grounded theory method described by Strauss & Corbin (1990; 1998) was selected as most appropriate to explore the use of health care research in clinical nursing teaching practice.

In-depth interviews and observation are the usual sources of data in grounded theory research (Strauss & Corbin, 1990). Since the main focus of the study was the clinical teachers' perspective, interviews using semi-structured open-ended questions

were the source of the data. Observations were not sources of data for this study due to concerns that clinical teachers would alter their practice because they were being observed and knew the research purpose (performance bias). Strauss and Corbin's (1998; 1990) approach to grounded theory looks for core concepts rather than seeking the basic social process (BSP) indicted by Glaser (Morse & Richards, p. 55). Fundamental to grounded theory, as part of theory building, "concepts and relationships among them are not only generated but they are also provisionally tested" (Strauss & Corbin, 1990, p. 24). Key parts of the methodology include concurrent data collection, constant comparative analysis, theoretical sampling and memos (Elliot & Lazenbatt, 2005; Polit & Beck 2004). The grounded theory approach goes beyond description to theory development based on concepts and relationships emerging through analysis and provisional testing. Further description of the grounded theory approach relative to this study is found in the data collection and analysis section within this chapter.

Assumptions and Biases of Researcher

An assumption of the researcher is that clinical education is essential to nursing education. Clinical placements are essential to learning. Most clinical teaching is done by clinical teachers. Therefore clinical teachers are important to students' clinical experience and learning

Personal biases of the researcher include a belief that clinical teachers are in a unique position to facilitate use of health care research in practice by students and future practitioners. Furthermore, I believe clinical teachers face many challenges and competing priorities during the limited time the students have in the clinical setting and therefore may not have research use as a high priority. Challenges clinical teachers

encounter include isolation from peers and lack of education regarding their role and use of health care research in practice. Therefore, even teachers who believe in research use in practice face challenges in including it in their clinical teaching and may not include research use in their teaching. Clinical teachers use of health care research is important to influencing the student either negatively or positively. Clinical teachers will provide reliable data to explore the use of health care research in nursing clinical practice.

Setting

The collaborative baccalaureate nursing program at Algonquin College and University of Ottawa was the setting for the study. Prior to 2000 the nursing programs at Algonquin College and the University of Ottawa were distinct. Since joining together, the two institutions share a common curriculum for the baccalaureate nursing degree. Most of the clinical student placements involving clinical teachers occur in the city of Ottawa.

Data Collection

The data collection and analysis methods used in this study are consistent with the approach of grounded theory as described by Strauss and Corbin (1998). The grounded theory approach includes data collection concurrent with analysis, constant comparative analysis, theoretical sampling, memos and diagrams.

Sample Selection

To build a theory based in reality, useful to practicing clinical teachers, I sought participants who were clinical teachers with a range of teaching experience and represented several clinical specialties to provide a spectrum and depth of experience. Participant sampling was through convenience sampling. Each of the fifteen clinical teachers who responded to the recruitment email sent to all clinical teachers at local

college and university and gave consent was interviewed for the study. Criteria for inclusion in the study were:

1. Clinical teachers who taught in the collaborative baccalaureate nursing program at Algonquin College and University of Ottawa;
2. Clinical teachers who had taught in the last 12 months;
3. Clinical teachers who understood written and spoken English (due to language limitations of the investigator).

Letters of support were received from two educational institutions participating in the collaborative baccalaureate nursing program, Algonquin College (Appendix C) and University Of Ottawa (Appendix D) indicating agreement to initially inform clinical teachers of the research study. Research Ethics Board approval was received from each educational institution (Appendices E and F).

A letter of information (Appendix G) and recruitment letter (Appendices H & I) were emailed to clinical teachers who have taught within the last 12 months at each institution (approximately 70 at University of Ottawa and 30 at Algonquin College). The email provided information about the study and contact information of the researcher. Clinical teachers contacted the researcher and indicated their interest in participating. An electronic copy of the consent form was sent to interested participants and interviews were arranged at the convenience of each participant. Sixteen clinical instructors contacted the researcher. Interviews were arranged with fifteen. Email and telephone messages left with the sixteenth clinical teacher went unreturned; no interview was arranged.

Purposive sampling of clinical teachers was an option if the respondents to the recruitment email did not represent a range of teaching and nursing experience. For example, if no teachers with less than 3 years experience had volunteered to participate, I would have purposively sought out volunteers through an email directly addressing the need. Another option would have been snowball sampling or asking clinical coordinators to recruit candidates with less than three years experience. During data collection, the demographic data of the participants was reviewed to determine variation among participants.

Fortunately, the sample included faculty with varying levels of experience and who taught in different settings, in different courses and at different levels in the program. Data collection continued past the level of saturation to include all of the volunteers. Saturation is reached when no new themes emerge from the data (Strauss & Corbin, 1990; Ploeg, 1999). The decision was made to continue past the point of saturation, to benefit from the richness of experience available to me and to reassure myself that no key concepts had been missed. I feel the sample provided a rich data base of experience from which theory could emerge. Maximizing variation in the sample has the advantage of strengthening the results. Common patterns or categories found in a varied sample may be considered more relevant than results from a more homogenous sample (Patton, 2002, p. 235).

Interviews occurred between April and June 2005. Interviews, transcription and analysis of the interviews overlapped, with the transcription occurring between April and August. Initial analysis began in April with deeper levels of analysis continuing to the conclusion of the study. The data collection and analysis methods used in this study are

consistent with the approach of grounded theory as described by Strauss & Corbin (1998) and include data collection concurrent with analysis, constant comparative analysis, theoretical sampling and memos and diagrams.

Data collection consisted of semi-structured interviews composed of short answer demographic questions and open-ended questions probing the research topic. The interview guide (Appendix J) was developed after reviewing relevant literature and in consultation with the thesis supervisor and committee members. Consistent with views of Ploeg (1999) and Morse and Richards (2002), using semi-structured interviews is appropriate when the researcher has enough knowledge of the study topic to develop questions in advance but not enough to be able to develop choices of possible answers (Morse & Richards, 2002, p. 94). Consistent with Morse and Field (1995), the questions were in a logical sequence and included open-ended probes to encourage discussion. The interview process was in accordance with de Marrais (2004), Holstein and Gubrium (1995), Nunkoosing (2005) and Payne (1999). Consent was obtained at the beginning of each interview. Copies of the consent form were provided on paper at the face-to-face (see Appendix K) interview and electronically (see Appendix L) to the participants who were interviewed by phone. Interviews were conducted at a time and place convenient to each participant. Interview length varied between 45 and 90 minutes. Twelve interviews were face-to-face and three were by telephone. Audio tape recordings were made of each interview.

Participants indicated their interest in participating in a follow up interview when giving consent at the initial interview. An email (see Appendix M) was sent to each of the participants. Of the fifteen clinical teachers contacted, nine participated in a follow-up

interview, three declined due to other commitments, two were unable to meet during the interview period, and one did not respond. Seven of the nine follow-up interviews were face-to-face. Two were telephone interviews. An interview guide (see Appendix N) was used. Each participant was provided with the model figure, outline, and description (see Appendices O, P, & Q) during the interview.

Analysis

Constant Comparative Analysis

An advantage of concurrent collection and analysis was that as patterns or categories emerge, the researcher can adapt questions and probes to investigate a category in subsequent interviews. The consequence of this is richer data for theory development and provisional testing. Data analysis using constant comparative analysis occurred concurrently throughout the data collection and therefore guided the data collection process, consistent with grounded theory process as described by Strauss and Corbin (1998). Transcription of interviews was done by the researcher. Transcription of the interviews is one of the initial steps of constant comparative data analysis because the researcher hears each interview again word by word and becomes more immersed in the data. Transcripts were evaluated for accuracy. Constant comparison occurred within and between interviews. For example if a new code was initiated from a passage in an interview, previous interviews were reviewed to see if the code could be applied to other passages. The key role of data analysis in interpretive description is to specifically identify themes within and across coding categories (Gillespie, 2002, p.58)

Initially, I reviewed two interview transcripts with my thesis supervisor. Coding of a portion of the interviews by two or more people early in the coding process ensures

intercoder reliability (Polit & Beck 2004, p. 575). The supervisor has significant background in clinical teaching, qualitative analysis, and grounded theory. The interview transcripts were coded with paper and pencil by each person and then reviewed together to establish basic codes. At this initial review, independent coding was similar with only minor adjustments needed to establish common code labels. The remainder of the interviews were coded by the researcher, ensuring the “highest possible coding consistency across interviews or observations” (Polit & Beck, p. 575) because the researcher is most familiar with the data, code labels and coding. Open coding of the interviews involved breaking the data down into parts and looking for similarities and differences (Polit & Beck, p. 584; Strauss & Corbin 1998). Coding continued as more interview transcriptions were completed. Analysis of the data was organized using Nvivo software. As codes were named, descriptions were developed indicating the meaning of the code for the researcher. The descriptions recorded the meaning of the code at the time of initial use and any subsequent revisions. Revisions to code descriptions were also made to clarify differences between similar codes as the process continued. In some cases, sections of text were coded with more than one code as necessary.

As analysis continued, the data began to be assembled into conceptual categories (axial coding). During axial coding, the process can be very abstract and occur in the subconscious (Backman, 1999, p. 150). My experience of axial coding was a combination of actively organizing the data into categories with pencil and paper, consciously considering possibilities and subconscious analysis of the data while distracted with other activities. Codes were arranged into tree formation with codes being grouped.

Code reports were reviewed and interviews were read in entirety several times as part of constant comparative method. Also, consistent with constant comparative method, categories were also compared between and across interviews (Strauss & Corbin, 1998).

As part of selective coding, a central category (also known as core category) emerged from the data. The central category and subcategories were identified and further elaborated by repeatedly reviewing the data (constant comparison and theoretical sampling as previously described). Relationships between the subcategories were investigated by reviewing the data repeatedly, comparing similarities and differences, and by selecting passages to represent those relationships across interviews. The process is indicative of the grounded theory approach (Polit & Beck, 2004; Ryan & Bernard, 2000). Analysis of participant interviews resulted in a central category and five interrelated subcategories.

Theoretical Sampling

Theoretical sampling involves seeking other interviews to explore variations in concepts as the theory develops (Strauss & Corbin, 1998). Theoretical sampling acknowledges each interview has the potential to change the knowledge of the interviewer; each interview has similarities and differences from the previous interview (Nunkoosing, 2005, p. 704). Similarities and differences between interviews were explored and clarification of the relationships between the subcategories was sought in follow up interviews. However, I did not actively seek other participants after saturation.

Saturation

Ideally, sampling continues until saturation is reached (Strauss & Corbin, 1998). Saturation is reached when no new themes emerge from the data (Strauss & Corbin 1990; Ploeg, 1999). Saturation is achieved when each category is “thick and rich” and “it replicates” (Morse & Richards, 2002, p. 174). “The greater the variation, the larger the required sample to produce a well-developed theory with adequate depth and scope” (Penrod, 2003, p. 826). While Strauss and Corbin (1998) acknowledge there is always potential to uncover “the new”, generally saturation is reached at a point where continued data collection seems to contribute little. Similarly, Morse (1994) describes the indicators of saturation “repetition in the information obtained and confirmation of previously collected data” (p. 230).

Although saturation was noted at the twelfth participant, interviews continued until all 15 volunteers were interviewed. Sampling continued beyond saturation to seek outliers, to fully make use of the rich knowledge and experience available to the researcher and to prevent loss of potentially valuable data. The last interview participants offered variety in their backgrounds. The variation had the potential to confirm or further refine the analysis. However, no significantly new contributions to the concepts already developed were identified and saturation was determined to be reached.

Memoing

Memos are written records of analysis (Strauss & Corbin 1994). Throughout data collection and data analysis, memos were kept. They are A fundamental part of grounded theory method because they allow you to move analysis to a more abstract level (Charmaz, 2000; Ryan & Bernard, 2000; Strauss & Corbin 1990, 1998). Memos can also

be used to establish rigour by showing the progression of analysis, conceptualization and theory development.

A journal, including memos, was kept throughout the data collection and analysis process. Memos kept included conceptual memos, thoughts and reflections and methodological memos which recorded questions, possibilities to follow up on and decisions made were kept in chronological order. Methodological memos included notations when interview questions were adapted or changed, for example, the addition of “what does use of health care research mean to you?” after the first two interviews. The conceptual/ theoretical memos, made as interviews progressed, included ideas about concepts/ themes as they arose and developed. Thoughts and reflections included thoughts about participants’ comments which resonated with me.

Diagram of Model

During data analysis, diagrams were used to graphically represent relationships within and between categories, a technique recognized as useful identifying the central category and developing theory (Polit & Beck, 2004; Strauss & Corbin, 1990). For example, the concepts of “connections” began quite early in the data collection/ analysis process but I struggled with how to differentiate the many “connections” the clinical teachers spoke about. Although my thoughts were summarized in memos, I often attempted to arrange them graphically.

As analysis progressed, a theoretical model was developed to represent the key concepts (categories), subcategories and interrelationships which is consistent with grounded theory (Johnson & Webber, 2005; Ryan & Bernard, 2000, p. 782; Strauss & Corbin 1998, 1990). I attempted to represent the theoretical model with a diagram.

Several model figures were drafted until one was judged to most adequately represent the interrelations among concepts.

The graphic representation of the model, written outline and description were provided and presented to the thesis committee members. Adjustments were made to clarify terms and develop parallel structures. The committee supported presentation of the model figure, outline and description to the participants in follow-up interviews.

Methods to Ensure Rigour

In qualitative studies, procedures to ensure trustworthiness or rigour of the data collection and analysis should be reported. Without descriptions of steps taken to ensure rigour, the reader of the study will not be confident the results adequately reflect the participants' responses (Davies & Logan, 2003; Streubert & Jenks, 1992). Credibility, dependability, confirmability and transferability are identified in the literature as ways to ensure rigour (Davies & Logan, 2003; Miles & Huberman, 1994; Polit & Beck, 2004) in qualitative research.

Credibility

Credibility involves demonstrating probable truth of the findings. Credibility was shown through consultation with experts. Peer debriefing (Davies & Logan, 2003; Miles & Huberman, 1994; Polit & Beck, 2004) with members of the thesis committee at stages in the research process contributed to credibility of the study. An outline and summary description of the findings were presented to members of the thesis committee who were experienced and knowledgeable in qualitative analysis research (including grounded theory), research use and in nursing education (including clinical teaching). Based on discussion in this meeting, revisions were made and further analysis occurred.

Consultation and consensus was reached with committee members prior to showing the model to the participants in the follow- up interviews.

Member checking was also used to establish credibility (Davies & Logan, 2003; Miles & Huberman, 1994; Polit & Beck 2004). In the follow- up interviews, the model was presented to the participants for their reaction. The participants were able to see their experience in using health care research in their teaching represented in the model. This respondent validation contributing to the credibility of the model, is consistent with description by Payne (1999) and Strauss and Corbin (1998). A grounded theory represents reality and as such should make sense to those who were studied as well as others practicing in that area (Strauss & Corbin, 1990, p. 23). The study findings and model were presented to a group of practicing clinical teachers and received favourable reaction. Dissemination of findings through conference presentations and article publishing planned after thesis completion will further establish credibility.

Dependability

Dependability is assessed by considering if the results are likely to be stable over time and conditions (Davies & Logan, 2003; Miles & Huberman, 1994; Polit & Beck, 2004). The memos, journal and diagrams kept during the research process would provide evidence of the concept and theory development. Consultation with the thesis supervisor during the research process also contributes to dependability.

Confirmability

Confirmability “is showing the absence of bias” (Davies & Logan, 2003, p. 17; Polit & Beck 2004) or being explicit about “inevitable biases that exist” (Miles & Huberman, 1994, p.278). The process of grounded theory acknowledges the data will be

interpreted by the researcher and that the researcher cannot be without bias (Strauss & Corbin, 1990). Two measures helped establish confirmability in this study. First, my biases were identified early in the research process. Secondly, my journal and memos would provide insight into my thoughts throughout data collection and analysis.

Transferability

Transferability indicates “these findings [are] important or useful to a practice setting” (Davies & Logan, 2003, p.17). The study findings are reviewed in the context of the knowledge found in the literature. The findings were supported in the literature. Another way of ensuring transferability is describing the sample thoroughly so the reader can adequately assess the samples’ similarities and differences to their setting to see if the results would be transferable (Miles & Huberman, 1994; Polit & Beck, 2004). A thorough description of the sample characteristics is provided in Chapter Four.

Using a recognized approach ensures rigour. The identification of the grounded theory approach for data collection and analysis strengthens the confidence in the study and results. As Streubert and Jenks (1992) assert, failing to identify a method for data analysis is common and weakens the study rigour (p. 68).

Although the meaning of reliability and validity are determined differently in qualitative and quantitative research,” reliability requires that the same results would be obtained if the study were replicated, and validity requires that the results accurately reflect the phenomenon being studied” (Morse & Richards, 2002, p. 168).

The validity of the model was indicated through comparison to the raw data which is consistent with grounded theory approach (Strauss & Corbin, 1998, p. 161). Constant comparative method of analysis simultaneous to data collection, also

contributes to the validity of the results (Strauss & Corbin). Also member checking was used to establish validity of results.

Chapter Four - Findings

Introduction

First a description of the sample is presented. Secondly, study findings including the central category, subcategories, and interrelationships between categories are presented including a proposed model to represent the findings.

Description of the Sample

Fifteen clinical nursing teachers participated in the study. The participants were clinical teachers in a collaborative baccalaureate nursing program and ranged in age from 32 to 63 years (Table 1). The sample contained a wide range of experience in clinical teaching spanning one to 35 years. Only three participants had fifteen years or more experience. The majority (11 of 15) had taught for five years or less.

Table 1

Description of Sample

	Range	Mean	Median	Mode
Age of clinical teachers (years) (n=14, (one declined))	32-63	47.64	41	39
Clinical teaching experience (years) (n = 15)	1-35	7.8	3	3
Years since graduation (n=15)	6-47	22.53	19	6
Years since most recent degree (n=14 (1 has diploma))	0-35	10.43	6	0, 6

Each of the clinical teachers had responsibilities other than clinical teaching including working as a nurse elsewhere, taking courses, or other forms of teaching. Of the participants involved in teaching nursing students aside from the clinical course, eight

were involved including labs, seminars and classroom courses, and three of the participants were currently teaching the classroom course linked with the clinical course. One participant mentioned teaching the classroom course one year prior to this study. Two participants were employed full-time by the educational institution; the remainder were employed part-time. Seven of the participants were employed as a Registered Nurse in the specialty in which they taught.

The participants' clinical assignments spanned a variety of clinical settings including community, acute care, maternal child, complex continuing care, long -term care and mental health (see Table 2). The participants were involved in teaching students in all four years of the program (see Table 3). Ten of the participants taught a clinical course in only one year. Four of the clinical teachers taught a clinical course in two years. One participant taught clinical in three years.

Table 2

Number of Participants Teaching in each Clinical Specialty Area

Clinical Specialty Area	Number of participants teaching in the clinical specialty area n= 20
Community	6
Complex continuing care	3
Long term care	3
Maternal / child	4
Medicine/ surgery/ acute care	3
Mental Health	1

* 5 of 15 participants taught clinical in more than one specialty area

Table 3

Number of Participants Teaching by Year Level of Clinical Placement.

Year level of clinical placement	Number of participants teaching clinical placements in the year level n=21 *
One	4
Two	6
Three	8
Four	3

* 5 of 15 participants taught clinical in more than one year level

The highest level of education completed by the participants ranged from diploma in nursing to Master's level preparation. Eight of the participants had Master's degrees (three in nursing, four in education, and one in another discipline). Six participants had a baccalaureate degree in nursing and one had a diploma in Nursing. All but one of the participants had participated in education related to research utilization, research methods, or clinical practice guidelines within the last five years.

Findings

The study purpose was to explore the use of health care research in nursing clinical teaching practice. Comparison within and among participant interviews resulted in the identification of the central category "*making the connections*" to represent the use of health care research in nursing clinical teaching practice. The central category emerged after initial coding (axial) and selective coding. Initial codes were developed into conceptual categories and the conceptual categories were reviewed. From review of conceptual categories and continued review of the interviews a central category emerged

representing the data. Furthermore, the central category was supported by the interrelated subcategories of *valuing the connections*, *conditions affecting the connections*, *connection strategies*. Within these subcategories were linking concepts *students seeing the connections* and *strengthening the connections*.

Firstly, a brief overview of the model will be given including the central category and subcategories identified. Secondly, a visual representation of the model will be presented to facilitate understanding of the central category and subcategories. Next, each subcategory will be discussed extensively and representative quotes provided. Lastly, interrelationships between the subcategories will be described.

Overview of the Model - Making the Connections

The central category of *making the connections* was identified as the common thread throughout the interview content. I felt the phrase *making the connections* was the concept that best represented what I heard from the participant interviews. *Making the connections* identifies the many different types of connections teachers identified they used or were part of. The central category *making the connections* integrated the concepts developed during axial coding. The clinical teachers were *making the connections* on several levels. The values, beliefs and attitudes the clinical teachers shared during the interviews indicated they had made connections between research, nursing practice, nursing education and their practice as clinical teachers. Clinical teachers also described connections made while interacting in different environments with different groups of people. Also, the study participants reported how they connected to research and incorporated research into their nursing clinical teaching practice (NCTP). Furthermore, clinical teachers described strategies used to help students to make the connection

between research, classroom learning (theoretical knowledge) and clinical practice.

Lastly, clinical teachers suggested ways to build supports to promote their use of health care research in clinical teaching practice.

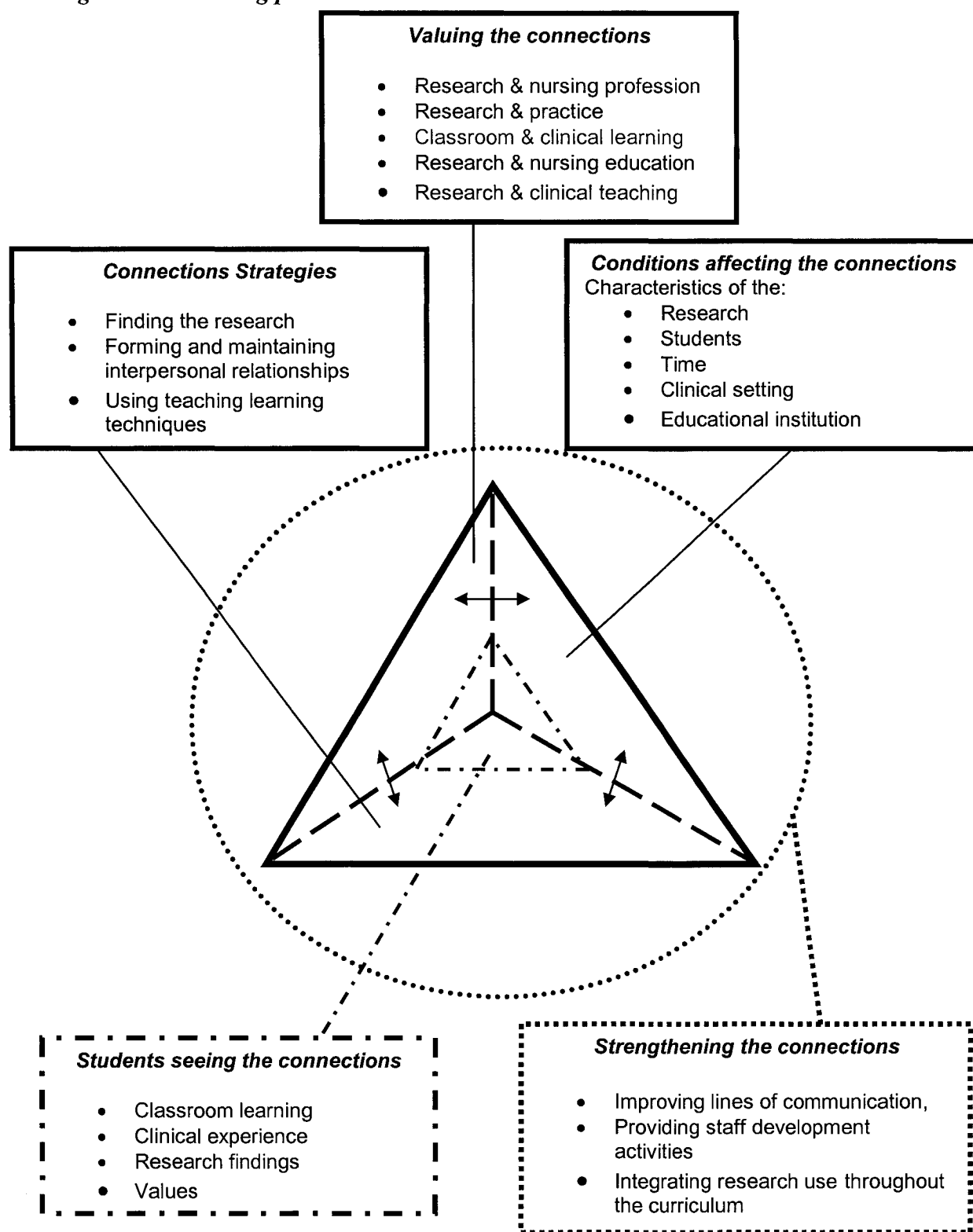
The subcategories were determined based on variations of levels and types of connections the clinical teachers described. The first three types of connections *valuing the connections*, *conditions affecting the connections* and *connections strategies* are conceptually at the same level representing ‘what is’ in the participants’ clinical teaching practice. Within the sub-categories, a spectrum of experiences existed among participants. For example, while some participants described the environment in the placement setting as supportive of their teaching specific to using health care research with the students, many did not describe the clinical placement setting as supportive.

The subcategory *students seeing the connections* represents the goal or intended effect of clinical teachers’ use of health care research. In other words, *students seeing the connections* is affected by the teachers’ use of health care research -*valuing the connections*, *conditions affecting the connections* and *connections strategies*. In contrast, the subcategory *strengthening the connections* supports, but is external to the clinical teachers’ use of health care research. Furthermore, *strengthening the connections* represents what could be or what could make the clinical teachers’ connections better relative to use of health care research in nursing clinical teaching practice. Each of the subcategories was interrelated with the others and all influenced *making the connections* (use of health care research in nursing clinical teaching practice).

Presentation and Description of the Model Figure

A model is proposed to represent the findings of this study (see Figure 1)

Figure 1. Proposed Model - *Making the connections; Use of healthcare research in nursing clinical teaching practice.*



The model represents the dynamic interrelationship of values, conditions and strategies. The large triangle, indicated with a solid line, is made up of three sub triangles that represent the connections clinical teachers described in interviews (*making the connections*). The three smaller sub- triangles, represent the values (*valuing the connections*), conditions (*conditions affecting the connections*) and actions (*connections strategies*) described by the clinical teachers. The three sub- triangles are outlined with a dashed line indicating the permeability from one to the other. A central triangle is outlined with intermittent dashes and represents the *student seeing the connections* or “putting the pieces together”. The intermittent dashes indicate the interaction between the connections clinical teachers make and the *students seeing the connections*. This triangle integrates aspects of the other triangles, illustrating how the values, conditions and strategies of the clinical teacher (in respect to research use) contribute to or give structure to the *students seeing the connections*. Each of the sub-triangles is juxtaposed and, as depicted, is of equal size. Each of the sub-triangles is linked to another by a double-headed arrow because each arrow represents an inter-relationship. The arrows indicate the dynamic motion and flow between the sub-triangles of values, conditions and strategies.

The large triangle is encircled by a dotted line indicating *strengthening the connections*. The category *strengthening the connections* evolved as an integral part of the model. When the proposed model was presented and explained to the nine follow up interview participants, the subcategory *strengthening the connections* was identified and explained but was not yet illustrated as part of the proposed model figure. The participants were unanimous in the stressing the importance of *strengthening the*

connections and recommending its inclusion in the final model figure. Many participants saw *strengthening the connections* as key part of *making the connections*, potentially affecting all of the components of the proposed model. Eventually I used a dotted-line circle to represent *strengthening the connections* in the figure because while it indicated support for all components of the model it was not a restrictive or rigid boundary, as a solid circle would indicate. The metaphor of a pyramid was used when describing the model in three dimensions.

Description of Subcategories with Examples

The model will be explained further using examples from the participant interviews. During the data collection and analysis phases, lack of clarity in language use became apparent ²(see Footnote 1). This was particularly true for the words “research” and “theory”. The open-ended interview process lends itself to use of imprecise common language.

² Footnote 1 Clarity of language use and meaning

Usually, I could distinguish the intended meaning from the context of the answer. Although the word “research” was used as a noun in the context of the study many of the clinical teachers also used it as a verb. The verb “to research” can also mean conduct research. The noun can also be used for the results of a search. For example, “I have the students research the topic” the clinical teacher meant the students would look up or seek out information from sources that may or may not include research articles rather than conducting a research study. Each clinical teacher in the follow up interviews agreed research, used as a verb in relation to student activity, did not refer to conducting of research by students. Sometimes within one answer “research” would be used as a verb and a noun.

During the initial interviews, many of the participants mentioned relating the students’ experience in the practice setting to “what they learned in theory”. I understood the clinical teachers’ use of “theory” to mean “theoretical” or learning occurring in the classroom setting rather than a specific nursing theory or even a class on theories in nursing. The clinical teachers in the follow up interviews agreed with this interpretation. Furthermore, this understanding is consistent with the literature. For example, when introducing the concept of the theory -practice gap, Corlett explains the term “theory” means “theoretical aspects” or “ what students are taught in a classroom setting” (2000, p. 499). In the context of this study, to promote clarity, findings were labeled “classroom learning” instead of “theory”.

Valuing the Connections

At an intra-personal level, seeing a connection between research, practice and education was a common theme among the participants. The clinical teachers implicitly or explicitly communicated believing in and valuing of research. The clinical teachers indicated valuing the connection between research and nursing as a profession, the connection between research and practice and projected an attitude that use of research had an important connection to nursing education in general and clinical teaching in particular. Furthermore, every participant communicated a belief in, or valuing of, research and its importance in teaching.

I think ideally the clinical and the research, the theory, it needs to be married, it really needs to be together all the time going down the way. When the theory is being done in the classroom and the research is being discussed in the classroom then people need to be thinking of how they can apply it in a clinical setting and vice versa. (13)

Each of the clinical instructors explicitly indicated that using health care research in their clinical teaching was a priority. Many clinical teachers were very articulate at describing their level of commitment to using health care research in their nursing clinical teaching practice.

Well as a clinician and as an educator I want students to be aware that nursing is not just clinical practice, it's not just nursing education, it's also research. And from the research I think comes the clinical practice and as an educator I want them [students] to be aware that clinical practice is influenced by research. (3)

A participant gave an example, of valuing the connection of research to the nursing profession, after being asked "how does health care research fit into your priorities as a teacher?"

I think it's very, it's extremely important, again because we are teaching at a grass roots level to our students and we are underscoring it and so to me, therefore that needs to be carried through in the clinical setting for the continuity and consistency and again just to show that consistency with the nursing profession and nursing education. (14)

Examples of valuing connection between research and practice include,

My past has demonstrated how beneficial (how) the research can be in the clinical experience... Working in a clinical setting, we cry for more research that would help us solve some of the problems. There was a lot of research that was just so beneficial in terms of application, with many [patients] that we had in [clinical setting]. We did go to the research quite regularly to solve some of those problems and to defend our practice and all the rest of it, to make our practice easier and to support the practice. So I have that experience of using it in a clinical setting. (13)

Being a clinical setting person, for most of my career, I value the piece that research brings to the clinical setting. (13)

A participant gave an example of valuing connection between classroom learning and clinical learning,

... students really need people to bring the two of those [classroom and clinical learning] together. I think they belong together. (13)

An example of valuing connection of research to nursing education given by a participant was,

...there was a huge emphasis on research and critiquing research so that was instilled within me, within that program and I am only really seeing it in retrospect now, how much that, that's probably where I'm getting the passion for the research, education and so on was coming from the messages I received in the degree program.(14)

Examples of valuing connection of research to clinical teaching include,

When it comes to including and being aware (of) to include research into practice you have to have the time and the interest and the belief that it's important to

incorporate research into your practice. So it has to come from within, a willingness, a belief in it to go that direction. You have to value research. (4)

I think that its [health care research] fundamental as a basis for what you are teaching, how you are teaching in terms of the content. As much as possible we should be teaching evidence- based practice and when we are talking about practice. And that requires being up to date with that but also teaching students how to access and use it. (8)

Conditions Affecting the Connections

The factors strengthening or weakening the clinical teachers use of health care research in their teaching are represented by the subcategory *conditions affecting the connections* (see figure 1, p.63). In the range of experience, participants either felt these factors had supported or had not supported their use of research in their teaching. Many of the clinical teachers described characteristics of the research and the student as well as characteristics of the clinical setting and the educational institution as having positive or negative effects.

Characteristics of the research. The research characteristics including availability and appropriateness were conditions affecting the use of the research by clinical teachers. Availability of relevant research facilitated participants using research in the clinical teaching. However, a lack of relevant research was a barrier.

There's just not a lot of good research in [my nursing specialty] (1)

So the difficulty in especially the [nursing specialty] area was perhaps lack of, sort of really solid well researched, solid nursing studies in [nursing specialty], period. No matter the topic. (14)

Also a factor considered was if the research was appropriate for students to use. The appropriateness of the research to the student and clinical setting affected the participant's use of research in their teaching.

...in regards to the research itself, you'd need some time to pick out, you are just not going to randomly pull an article, OK I need something on [patient procedure]. Because you have to have something that's on the appropriate level for the students if you're going to bring it in and use it as an example of research. You don't want to overwhelm them. It's babysteps, you don't want to turn them off from it completely.(4)

I have to be careful on how I use it because it depends on the level, 'cause you don't want to get above their heads. So if I was to go into a certain research that was maybe further along the scholarly type that they wouldn't understand it and would be more frustrating. (2)

Characteristics of the student. Teachers considered student characteristics; year level, interest level and experience when they incorporated research into their teaching. Some instructors mentioned how much they would introduce research in their teaching depended on the receptiveness of the students.

I think it depends on where they [students] are at, what's happening, what their priorities are. They are all different. (6)

And also to gauge each student too, cause sometimes some are more into the research aspect than others. And that as well, you have to look at the whole group and think like how far can I take them with this? (2)

The group of students I had happened to be receptive,... however I would anticipate not every group is necessarily going to be the same. So if the group, perhaps is not as interested in current nursing or health care research in literature, how it applies to the clinical setting, I think that would create a challenge.(14)

The clinical instructor would consider year level of the student with expectations for using health care research. For example, in year one, the teachers would introduce use of research at a different level than to a student in fourth year.

Because they are working at a very fundamental level...part of it is just their readiness for depth and you don't want to overwhelm them they are spread quite thin in the early years, I think. As they get to be third and 4th year students, especially 4th year, then there's a lot more scope for that[research use] (8).

Also, some teachers mentioned that students coming to the program with some work experience were more receptive to looking at research. Students with established effective communication skills, or who were comfortable providing basic nursing care were not as focused on acquiring skills as students entering the program without relevant experience and were more receptive to research integration.

For example, a clinical teacher described using recommendations from clinical practice guidelines,

It was a little overwhelming for a few of the other ones. The other students, I think just their first patient contact was very overwhelming so for some of them to do it was too much. And it was completely lost on them, in first year. But some of them who had experience or who had worked in nursing homes before, that was really good for them, they really enjoyed that. It got them thinking on a different level not just I- need -to- do- this- skill- right- now kind of level. To actually evaluate what they were doing and critically think about why they were doing what they were doing. (11)

Often students are focused on acquiring skills and less interested in research,

Because the clinical focus tends to be on a lot, it shouldn't be, but its a lot to do with the skills. The students focus is, especially in second year, "how many I.M.'s can I give?" "and don't give me the research, just I want to do it" That can sometimes be a barrier too.(6)

However, if students had a keen interest in research, the participants found them more receptive. Some clinical teachers had experiences where using health care research had gone well felt the same strategy would not have been as successful with another group.

It depends on the clinical group it really does. I have some students that are phenomenal and it's the group dynamic too. Some need a lot of help with their clinical skills. So they're not, we are in 2nd year, so they don't have a lot of clinical experience prior to that. They have some in first year and it depends on the semester. If I have them in semester 2, then they have the comfort, a little bit more ease. So it's a little bit easier to get them to focus on other things. A little bit of a higher level thinking. (6)

In respect to helping students find suitable research, a participant explained using, probably two different approaches.

One, trying to assess where they are at and if, as I said they need more direction, then I would be pushing them and giving them more direction. And if they are more self-directed then letting them self-direct and acknowledging that yes you are going in the right direction, yes this is the appropriate thing to do. (5)

Characteristics of time. The resource of time was also a persistent concern affecting how clinical teachers used health care research in their teaching. Participants noted time available to plan and prepare to use research as well as time available to teach in the clinical setting affected their use of health care research in their teaching.

As a clinical teacher, you are paid to be with the students and to prepare and to correct but I find to do the research is extra time, ...I didn't have time so I think time is an issue (9)

Lack of available time for finding, analyzing and evaluating research suitable for use in their clinical teaching was described as an issue by participants.

The time to actually find appropriate articles that's a time issue... I can't think of anything ... that would make it easier or harder other than the time issue. (11)

Most teachers felt lack of time was a challenge to incorporate research in teaching.

Sometimes depending on where you are - it is difficult with time restraints in the clinical practice with the number of students we have, (to), even if you did have a great knowledge base on current research and trends and things like that, it's not always that easy in the clinical area because you are so busy, to ever explore any of it. (4)

I am planning on doing it[using health care research] more but it is going to be a bit more challenging to figure out where I can fit it in, without losing everything that I already do that's important.(11)

However, despite the time restraints several participants mentioned ways of fitting research in to their teaching.

I think there are opportunities to make reference even if it's brisk. Even if it's sort of a word or a go back and look for the research on this. Or even using the vocabulary, so that the message gets out there that they do belong together. So I think the opportunity is there to make the connection but I don't think there is time to go into it in depth. But again, five days, one of them is orientation to the unit, four days, in 4 days, what can you do when some of the other things are required as well?

(13)

Now if I were supervising the skill for example if a student were able to go in and see a [procedure] I would talk to the student quickly before she went in and I'd say this is what you are going to see ...So I would probably do it together but it would be very quick but then I'd say to them and by the way that article is in the binder so go read it after. But it would be just kind of on the fly. (3)

One participant compared experiences when more time was available and the use of research in teaching was easier than when time was not as available and was more of an issue.

Time would be one of them. That's my personal preparation time as well as clinical time. In 4th year clinical, time is actually pretty good. Because you have them for 6 weeks, so 3 days a week for 6 weeks is more than adequate to do something like that. ...In 2nd year it's a bit more of an issue because I only have them for 8 days and there is such a learning curve, that's going to be challenging for me to do that this year. And first year, like I said it, was really hard to fit it in. I did but it was quite difficult because you only had them for 4 days. So, it's a lot to do in 4 days.(11)

Characteristics of the clinical setting. Characteristics of the clinical setting affected the use of health care research by clinical teachers. Availability of sources of research on the clinical unit and use of research by staff in their practice contributed to the clinical teacher's use of research in teaching. Presence of up-to-date journals or texts to refer the students to, was a support to the clinical teachers to use research in their teaching. In other cases, not having access to current journals or textbooks on the unit made using research in teaching more difficult.

The practice guidelines are there.... The ones that are relevant. But other than that it would be more me bringing it [research sources] in I would think. (11)

Many teachers brought examples of research to the clinical setting,

I find that because I'm at a community hospital and there is not a lot of resources, I have to bring my own ...books and textbooks and whatever articles I have and I keep them at the hospital. (1)

Most participants didn't have access to computers and databases in the clinical setting to search for and to retrieve research. For example when asked if students or staff had access to internet sources via the computer a participant stated,

I don't know if all the computers can do that or not. We used to be able to do that and then they limited it and the students while they are in clinical probably wouldn't have time. (11)

Some of the participants mentioned that access to the computer would definitely be a support.

It [computer access] would have been, the ideal would have been to have access to current information in, just-in-time, practice or approach (14)

Similarly, presence of research-based policies and procedures positively affected the use of research by clinical teachers.

In one case, research-based practice from the clinical area changed students' practice.

When the facility that I teach in decided to switch from sponge bath to tub bath, it was a big change over not only for the staff, but the students had learned sponge bath till the cord falls off so you use the evidence and the research, ...the research saying that the baby maintains its temperature better if its bathed in a tub (15)

Staff was seen by participants as a factor in how easy or difficult using research was in clinical teaching Staff who were familiar with the concept of research use in practice were seen as creating a positive environment for research use in teaching.

Both of those floors are pretty good about ...and they do continuing education on different topics and in-services and what's the new and upcoming thing and why is it better or why is it not better or things like that. And in second year, [care institution] they were excellent there and they do a lot of that on their own anyways, the unit I'm on. (11)

Whereas staff practice based on tradition or "how they learned" was less likely to support use of research in clinical teaching.

Also there are some nurses who want to do it the way it has always been done as opposed to finding new ways or better ways of doing things. Some, a lot of their [student] learning comes from the nurses they are working with especially in 4th year...So depending on who they are buddied with that makes a big difference too because some people really frown on that and don't feel it's important and they get the message across to the students. (11)

Sometimes nurses are resistant to change and when the students bring things it's all about playing a game. How we do this because research says this and showing that to the staff without offending them. That's a big issue. (6)

Some settings don't really use research themselves, or it's not, if they do it's not at a level that the front line staff are not really involved with. So the students don't really see it as one of their priorities. (9)

In the clinical setting, the presence of a staff educator who promoted research use in practice was also a positive condition.

I think it depends a lot on the educator that is on your floor, if they keep current with what's going on and latest research and if they are communicating that to the staff. That's one big thing. Or if they are not communicating it with the staff. (10)

If your educator that is on the unit is into research then you would be exposed to research more and the staff would be more,...accepting of research. But otherwise it doesn't happen often. (2)

One of participants mentioned examples when she was able to use a clinical facility librarian as a resource.

I have used the library there. I have sent students there and the librarians are amazing. They are a wonderful resource. They will get articles for the students. They will help them to find information ...We have actually gone down to the library. I introduce them to the librarian who has been amazing with them and will encourage them to spend a couple of hours there. Its after clinical usually. It's

is out of clinical time. Because I can't take that time. Or I've done it in conference and said OK you can stay.(6)

The culture of the setting and the receptiveness to research and evidence based practice was identified as affecting the clinical teachers and students use of research.

Having good references around is good. Having computers around is good. Having a library possibly in the clinical setting where students are welcome and can go and access to do an online search for example. Obviously leadership is key. If the leaders in the agency, I'd say it starts with whoever your chief nursing executive officer is in the whole agency would create a climate for evidence based practice or not and then that goes down through every level of leadership. Probably I expect the more baccalaureate- prepared nursing staff we get, the more favorable the environment will be. (8)

Openness to change of the staff or the unit that you are on. Openness to discuss things that are different, that's helpful especially if the students want to discuss with someone that actually works there, things that they have read.... if they are doing ongoing journal club to improve practice and they are doing stuff based on articles that are evidence- based practice and evaluating them and saying does it work, does it not work? Do we think this is what we want to do? That makes a huge difference. I know the [health institution] is very big on evidence- based practice and they have been changing all of their policies and procedures for a long time, ...to reflect that and are still in the process of that ...But it does promote a culture of awareness amongst the staff nurses to support research and to support using it in your practice. So that makes a huge difference ... If the staff or the hospital is open to it. Obviously it comes down to the individual staff member eventually but if the organization is open to it, it makes a big difference. (11)

Clinical teachers in community settings did not always have supports. In some community settings, the staff the students came in contact with didn't necessarily have a nursing background.

In the clinical settings? Supports available to teachers? Absolutely miniscule if nothing. Because most of our clinical instructors are out with students in organizations that do not have a public health nurse or a community health, there is no nursing presence (7)

Often in community settings there were not computers or other resources available to the students or clinical teachers. Clinical teachers also had students spread over many different settings.

Because when you teach community health, you are in different agencies and depending on their topic you would have to know, in terms of content, you'd have to know about a lot of different things. For example, this year I was doing community health in ... a high tech company and its more occupational health and then I was also teaching in an early years center where it was more like infants and another group was also in a disabled population, so if I was to be a content expert I would have to know about all of these so I find that difficult. ...I wish I could have been more content expert.(9)

And later,

My concern is more, again if you look at a content perspective, since we are not expert on content, in community health, because the settings are so diverse is that we might miss key articles or key authors.(9)

Characteristics of the educational institution. In relation to the people at the university, if the teachers had opportunities to link with other clinical teachers or with course coordinators or classroom teachers, they felt supported and encouraged to use research in clinical teaching. When a pattern of communication existed, participants felt supported.

Also with lack of experience,...I haven't had as much time to think about different ways to bring it in and other people have. So listening to the way other people bring it in gives me ideas or helps me get ideas, sometimes too on how I would be able to bring that in without compromising what I am already doing. So group meetings and stuff has [have] really helped and guidance from other instructors and also the year coordinators has really helped in that way. And just thinking about it, thinking about it more like taking more time to focus on that part of it when I'm preparing for clinical. (11)

While others acknowledged linking with other clinical teachers, clinical coordinators or classroom teachers would be helpful, they had not experienced that support. Many

participants identified a gap between classroom content and clinical content which made using research in their teaching more difficult.

There seemed to be this kind of chasm ... It was frustrating I think for the students as well... The content of what was being covered within their theory class ...how does that fit into their clinical? There didn't seem to be a nice flow to it. So that I would be bringing forward certain resources and literature and so on and I would have to be asking the students, what are the references that are being given to you in the theories course? There seemed to be a great divide. I could see maybe some work toward having a greater continuity in the literature, material the students are receiving at each of those points and that would be very helpful. (14)

Because I do get this impression that there is all this over here and then there is the practicum. This is sort of set apart, encapsulated kind of thing, ...I don't know what kind of reference they are making ...so that the students get that message, that we are really doing this for the clinical. It's all about one day working in the setting, some setting. (13)

I didn't know what they did in theory so it was trying to make that match all the time. And I thought that they would probably have been exposed to research around nursing care plans and they weren't so had I known I would have brought them in examples right? (12)

One participant referred to being familiar with the readings students had read in the classroom

I make sure that I have a copy of the ones [clinical practice guidelines] they are supposed to be reading for that clinical rotation so that I know what they are getting in theory. (11)

Some teachers who taught in the classroom or in other parts of the program, for example in lab, were able to make that link for the students

I've shown this [research] to the students we talk about it in lab. I include lab by the way into my clinical practice, which is, 'cause its all one course. And we do a ton of research in lab... And that's where I bring it up. Then I take them to clinical practice... (6)

We try to make the theory class go in conjunction with the clinical so that we are teaching them theory at the same time. Now it works, this whole process that I describe works well I think for myself especially, because I teach the theory.... So I can bring it forward. But some of my clinical instructors that don't have that, the connection to the theory class (7)

Research use as a course component, either in the course outline, course objectives, evaluation or other components of the course was often seen as a support. Some participants felt research use was well ingrained (explicit) in the course, making it easier for them to use. In cases where research use wasn't as clearly identified (implicit) as part of the course, participants found it was more challenging to incorporate research into their teaching.

Well a support would be if we had it built into the objectives,... into going out into clinical practice. If time was allotted for it. If it was made a priority then I think certainly it would happen more. So that could be a support. Is that if we arrange things, assignments and stuff, to allow for that to be brought in. (4)

The educational institution supported research use by the level of integration in the course components. Some clinical teachers benefited from learning opportunities provided by the educational institution.

While some teachers identified having access through the university to search databases as a support other participants were unclear if they had access.

Because I'm affiliated with the university ...we have our password to go into the library and search.(2)

The university library is wonderful and to be able to access that from home and do searches and get into Cochrane and ...I can do it all from home...,I still can't remember if its because I'm a clinical teacher or because I'm a student (laughter).One way or the other I get in there though.(1)

I don't know the University of Ottawa and specifically the school of nursing may already have in existence in terms of a protocol or somewhere I can just click on a

website to help me short cut to that. I'm sure it must exist because I'm not the only part-time teacher who has ever come through that door. (14)

Connection Strategies

The subcategory of *Connections strategies* represents actions or types of strategies described by the clinical teachers to bring health care research to their teaching. Three main strategies I found emerging from the data were a) finding the research, b) forming and maintaining interpersonal relationships, and c) using teaching learning techniques.

Finding the research. The first connection strategy was finding the research.

Finding the research was different from the research being available or accessible.

While the research may be available and accessible to the clinical teachers, *finding the research* pertains specifically to the strategies the clinical teachers used to find the information and what sources or research they used. The clinical teachers described how they located research and what sources of research they used. Some people looked at websites. Others used hand searches of journals.

Depending on the journal, some journals are more practice oriented or more concrete. Some other journals, where the research is held are more academic oriented. So if I'm in a clinical setting, I need some things that are very practical and can be used, so I am going to go more into those journals that are more practice oriented. Just to be able to apply the research more easily. (9)

Some participants referred to clinical practice guidelines.

I think the evolution of best practice guidelines per se, is a really good thing because they are accessible. They are on CD Rom. They're on the internet. They are not too long. And you don't have to pull all that literature together yourself. (8)

Others were comfortable using the internet, including database searches.

If I'm researching something I have to get on line from home, from my home office. I can get into the university library and I can get research articles if I need

them. And what's really great now is that many of the articles are now available for download(1)

I am totally comfortable with using it [research]. I don't have any issues with it, I think partly because I'm in school it certainly helps me to keep up to date and... I know how to find the information. If I don't, I know who to go to if I can't find it. (6)

Participants had different comfort levels with evaluating the research.

I feel prepared enough ...I know how to access it. I know how to read, I know how to appraise it (9).

I feel very prepared. I really like research and I enjoy it so its not, its not anything that I have to struggle with..., the more I learn about it as I went through statistics and nursing theory and having to do literature searches and understanding the different literature and ...for reliability and validity...., as you learn more about the different aspects of research I think you can better convey it.(2)

Forming and maintaining interpersonal relationships. The second connection strategy was forming and maintaining interpersonal connections in the clinical setting and educational institution. The interpersonal connections or relationships described by the clinical teachers were with nursing staff, nursing faculty and other clinical teachers. The clinical teachers mentioned these connections first in a general sense and then more specifically in relation to research use.

Number one is the relationship and working in collaboration.(7)

I would tell them [new clinical teachers] to invest in getting to know the organization and particularly the staff that you are working with. ...Try to avoid bopping around unit to unit because the link, the connection that you make with the team that you and the students will work with is key. That can make or break and I've seen it work both ways for me, that experience for the student. So you will never get to clinical research if you're going in and battling a staff that doesn't want you there.(4)

Some participants identified that they first had to establish a baseline respect for their competence and make some links with the staff before they were able to move

forward to introducing research in their teaching. Forming these interpersonal connections facilitated the teacher's use of health care research in her teaching. One participant explained the difficulty in maintaining the relationship while trying to encourage practice change based on research.

Then I take them [students] to clinical practice and they say, you know none of the nurses are doing that. I do talk to the nurses about it and we've found this. I know them quite well though and its taken me a while to build up that relationship where I actually can take the research beyond just the student and go to the individual nurses.(6)

Also, two-way communication between the clinical teacher and staff in the clinical setting during the clinical placement promoted a positive atmosphere for teaching / learning.

We'll create a binder with all this new up to date research ...But I feel that's my way of giving back to the unit too" (3)

Using teaching learning techniques. The third connection strategy the clinical teachers described was using specific teaching learning techniques with the students. I have labeled the teaching/ learning strategies described by the clinical teachers as; knowledge brokering, role modeling, using course components, and stimulating critical thinking through questioning. I used the term knowledge brokering to indicate the participant linked the student in some way to the research. In some cases the clinical teacher brought the research article in- hand to show the students.

Sometimes I have the research with me, because I have a lot of articles. (15)

I try to make the latest material available and accessible to the students. For example,... I tried to ensure that we have what best practice guidelines were around related to [topic]... I'll actually physically bring them ...So I try to make, ...give them, remind them and show them ways that they can access these things easily. (8).

Many participants used clinical practice guidelines in their teaching.

I take them to the resources and I actually have downloaded the best practice guidelines and we go through that. And I do, do that that in clinical, I take it from my computer but I take it to clinical and we go through it. And we talk about the ABC types of evidence. (6)

Others referred the student to a specific website or a certain journal to seek research.

If there's a particular issue that comes up and I have an article on it or if I don't have an article on it and there's something that the students need to know, we'll get out the more recent issues of the [specialty nursing journal] and go into them and see what we can find that's relevant. So there's, there's journals and there's their textbooks and the best practice guidelines. (1)

If you find that they need more guidance, than I'm probably a bit more directive in terms of the link. I'll suggest that they go to Health Canada that they go to the Public Health, the different Public Health websites things of that sort. (5)

Another strategy was role modeling, which the teachers used when teaching skills. For example, the clinical teacher would use research as a basis for what and why they were doing the skill that way. The student would get a sense the teacher valued research as well.

I think that as a mentor to students, I need to be able to have that information at my fingertips and to be quite proficient in using it and demonstrating it to students. I think nursing is a science and so we as instructors, and myself as an instructor need to formalize that with the students so that they can carry it on and so they can really build solid practices and not just practices that are built on, on traditions. (12)

I was telling the student that I need to work on that myself to make sure that I use more research and evidence with the students in teaching and, and she said to me (name) you do that already, you bring us in articles that we need for issues and uh, so that I thought that was kind of neat, that she recognized it more than I did. (1)

The importance of bringing it forward and bringing it forward in a context that, not only am I relating it directly, to the students. Again "it" being the research or research findings and then how can it be applied to clinical setting. But another important piece of that to me is essentially the modeling to the students. (14)

The third strategy was stimulating critical thinking by asking questions about what was going on in the clinical setting, and asking what they could look for in the research to help them problem solve. Some participants reviewed a research article with the students and asked if the research would apply in the clinical setting, if it was an appropriate study.

Well, often what I would hear from them is “Oh I know critical thinking” ...So they could recognize it, they knew it when they heard it and they knew it when they saw it (laughter). Sometimes some groans but at the same time then we talked about why is it important. I understand you are hearing this a lot but what does that really mean? What does it mean to you? Why is it important and exploring that. So there is opportunity for exploration, further exploration. Then taking it from, of course, the classroom or the theory setting and bringing it into three dimensional clinical setting, this is really where they really seem to respond to it. When they kind of try it on for size within their, it being research and so on, best practice in the setting and be able to give feedback with regard to, did it work? What do you think? And being then able to critique these studies and say well this is what they say but actually in this setting I’m not sure that it works so well or conversely oh yes I can see (14)

And the other thing would be ...the validity of the article. You have to be able to critically, ...critique the article properly. And you have to be able to see if it is a valid article or not and be able to decide that before you decide you are going to put it into practice or you might want to put it into practice. Is it realistic? Is it relevant. Is it actually a good article or not? Or good reasoning behind what they are saying or not? (11)

I see it as a critical thinking tool. Here is the best practice guidelines, they are using them here, but not quite exactly to the guidelines. So I get the students to go them [best practice guidelines] and look at the agency and say why, why are they not doing everything the way the guideline tells us? (6)

My concerns are always how I get students to realize that you have to look at the evidence but then you have to take that evidence and adapt it to your situation and your setting. It’s that part, that’s always hard to do. To say, okay well how does that apply to this particular group? How would that work in this particular group? And how would it work so that you still keep the essence of the research? (7)

The fourth strategy was using course components, for example care plans or course assignments, to incorporate research use into their teaching. Participants would ask the students to use research to support some of their interventions in the care plan. Others had students do a short presentation at post conference including research in the presentation.

One of the things that I expect them to do is to each present a 15 or 20 minute presentation at conference. ...Usually I get them to generate their question from their clinical practice. So it has to be something that they are interested in that's relevant to their practice that they have been working on. ...in the presentation I want [not] just a reiteration of the literature but an application to practice. So an example from, what got them interested in this and how did those findings compare to what they see? (8)

Also, some participants asked students to bring in research articles and discuss them. Some participants articulated their concern not to increase the already full workload of the students.

I walk very softly and carefully with how much I would pass on to the students as well because they are so loaded down. So sometimes it's the issue is a time restraint. What more can they take on, if I get them more involved in the process? And even for me in something like post conference often because we do six 12hour shifts, because we, and because we, and its at the end of the day and there's not a lot of brain power left for them or me to be raising research which isn't necessarily something that everybody gets excited about around the table. (4)

Often the clinical instructors would include research informally into their teaching trying "to weave it" together with what was already within the course assignments.

what I will invite them to do is say OK if you're doing, if you're finding a research paper for your research class and it can be on anything, Make it on maternity and then we can use it. So I don't want to double the student's workload, I want to let them see how things fit together easily. (3)

Participants who taught in a course where research use was part of the course components found it easier to include research use in their teaching.

I'll speak specifically to [course]. I think the course outline just naturally leads you in that direction by looking at the secondary data, by looking at the application of best practice guidelines to the practicum. So it's naturally imbedded in the course work. (5)

For others, incorporating research was more challenging. Many of the teachers referred to their reflection on past experiences with using research in clinical teaching. A few mentioned planned modifications for their next clinical group.

Probably that I could do better that I'm thinking about just from meetings, maybe in the upcoming session, instead of saying just reference... find an article related to your care plan. And then they could come back and share what the article said in post conference for five minutes at a round table and they would all do that. And it links theory, research into the practice that way. Unfortunately that's not what I'm doing, that's probably what I'm going to try to do. (4)

In response to a question about advice for a new clinical instructor, many identified the need in the first few clinical sessions to gather experience and become comfortable with the clinical setting including staff, the course objectives and the process of clinical teaching before trying to incorporate research.

Students Seeing the Connections

The point at which the students realize the connections between classroom learning, clinical experience and research findings, is represented by the subcategory *students seeing the connections*. Students coming to value these connections in their clinical practice was also part of this subcategory. The participants worked towards the goal of students being able to see these connections.

Well I know they do health research in theory. The problem is (is) when they do clinical, they don't realize that what they learned in theory transfers to clinical...I think when they get to the clinical area at least in first and second year they completely forget that part of it [research] and just focus on taking care of the person. They are not thinking about the theory they have learned and how it links and that's something that I have really had to try and bring together this year.... And you have to keep continuously bringing that to their attention so that they are

really linking everything they have learned to the fact that that's how they are deciding what they are doing with the patient. (11)

Many of the participants spoke of helping the student to see a link between theory, classroom, research to clinical practice experience.

The students sometimes ...don't get it until you talk to the students and you ask them to tell you about how that evidence is guiding their practice. So unless they have time to fit, sit, reflect on it, and give it back to you and think it through and answer you then I find the students don't always understand that connection. So it needs a clinical instructor that is aware, really understands that we are trying to move evidence into practice and that we are trying to base whatever we do in practice on theory. (7)

So I asked the students to take a look at the research and the students came up with this article... So I get them to look at clinical reality based on the research. And I get them to think about it. So this is done in conference. (3)

The students could not always see the connections but in some cases the participants had students who could.

Using student evaluations at the end of the rotation to find out what they found useful. And the students have all commented on the integration of not only nursing theory and practice and research but also in nursing process and the whole concept of the curriculum design...(3)

Participants often described students initially seeing the classroom learning, clinical experience and research findings as separate and distinct.

Well being new to it I am still getting into the whole, what my philosophy of clinical teaching is. But I really, it [research] definitely could be used during our post conferences or our pre conferences, to help the students, help the students see the link. I guess recently I have been talking to some of the other clinical instructors and we are really seeing that students, they don't see the link between theory and practice and I think bringing research into that would really be a concrete way of them seeing the link between theory and practice.(11)

Some students were able to see the connections at some level as the clinical experience progressed. Usually participants commented on students in third and fourth year being capable of seeing the connections at a deeper level.

Well in 4th year I think it would be a completely different story because ...they already have three years of patient care behind them and they already are starting to have distinct ideas of how they think they should be caring for people and not caring for people. So I think it[clinical practice guideline] would open up much more discussion if it was to be used in 4th year, then it would say in first year. ...They might get more out of it with the critical thinking part and actually taking research and applying it to the patient situation. (11)

While first and second year students were more likely, as described by the participants, to begin to see the connections at a more superficial level.

In second year I would probably base it on BPGs again, the recommendations, and I think it would probably go better because I don't think they would be so overwhelmed with just the patient contact part. They are still a little bit overwhelmed but I think you could get more discussion going because they have had a little more contact and little more theory at that point and have a little more confidence in themselves. So I think that would stimulate more discussion ...actually critically looking at what do I want my practice to be in?, what is proper practice out there ? and how can I link what I am reading to what I am doing? Because they have a hard time with that in 2nd year. (11)

The work we do is, is grounded in a foundation that has been tested and tried and proven. And so in my clinical practice with students I certainly make sure to attach the work, to let them see the value in it. So that they are feeling that they can be proud of this work they do because it has a foundation, it has a basis, it has been tried, it's been researched. It's not because they want to do it or like to do it but they in essence will develop a love for doing it because they know the difference it makes. (12)

Participants described cases where the students were able to “put the pieces together”, seeing connections between the parts and in some cases seeing the parts as integrated.

They said that they really enjoyed it cause it helped put the pieces together for them. (2)

Another participant described how she would spend “time weaving things together so they [the students] get the whole picture”.

I use the academic expertise and I weave it together...I spend a lot of time weaving things together so they get the whole picture. (3)

Other participants mentioned “joining”, “pulling” “or “bringing” the parts together.

So it's trying to integrate what they have seen clinically, and what they think, and what they know, and linking it to research." (3)

My thrust with the students was to get them in conversation to be doing the assessments and in the tasks also to be doing the assessment and developing a relationship with the client. So that, some integration. And I would do that same kind of integration then. So the next step would be to integrate then the research and the theory with the nursing piece. (13)

I think the challenge is when they finish with [course] they can see it as an integrated whole. But as they are going through the process it is very difficult for them, most of them. Sometimes when you are working with more mature nursing students, who have had more life experience, they can see the connections more quickly. Not always, but often that is the case. (5)

Part of students *seeing the connections* was also the students coming to understand the importance of research to practice.

To teach about the importance and relevance of nursing research applied to practice and quality nursing research.... So bringing all of these things forward hopefully and tweaking an interest or at least helping to foster, helps them[the students] foster a certain perspective, ...around the importance of nursing research in clinical practice, in teaching and learning, and how it might fit into how they learn and then ultimately teach as well.(14)

Strengthening the Connections

Often, the clinical teachers described activities to improve the use of health care research in their teaching and the connections made are represented by the subcategory *strengthening the connections*. Improving lines of communication, providing staff development activities and integrating research use throughout the curriculum would support each of the subcategories of values, conditions and strategies as well as the goal of *students seeing the connections*.

Improving lines of communication. Improving lines of communication, informal and formal, with the educational institution, clinical coordinator and classroom teacher would help to encourage clinical teachers' use of research in clinical teaching. By sharing experiences, clinical teachers could learn from each other. As one participant said,

Its helpful to talk to other clinical instructors on how they try to incorporate [research use into their teaching] just for different ideas. (11)

So just, and probably a way of maybe connecting with some of the other part-time instructors. Some of them I had met once and others not. So probably just to meet with some of the colleagues in a similar situation and get to talk to them about what they found helpful. I think I may have been the only one who was there for the first time in this capacity. I'm not sure even, I guess that sort of understanding would be helpful to me. I tend to really have as a high priority other peoples' experience who have been in the same position, learning from that... (14)

Also, communication of what was going on in the classroom setting, would help the participants in their clinical teaching.

Providing staff development opportunities. Many of the participants had taken part in a clinical practice guideline workshop provided by the educational institution. They found participating in the workshop helpful and felt more opportunities would support their use of research in teaching. Within many interviews, the need to develop and strengthen strategies for using research was mentioned.

Some participants suggested needs of new clinical teachers and orientation,

If it was part of the orientation, maybe when you do the new instructor orientation they could have a piece about this (use of health care research in teaching), in it. Suggestions or things like that, if they had maybe someone who had been doing this for a lot longer mentoring the person, a new clinical instructor, that would help bring those extra pieces in that maybe will take you a couple of years to get to the point where you are comfortable bringing those in because you don't have the experience that other people have. And it just doesn't occur to you. But things like that would be helpful. I personally have two people that I worked with that I know really well that have clinical instructed for a long time that I go to when I

have questions or issues. So they have really helped me look at those areas and be able to think about those areas a little bit more and answer questions like when I say “how the heck could I possibly fit this in and still do what I need to do” and they, on a more informal level, have helped with that. So that helps. I have been lucky that way. (11)

I think though if you are just a clinical teacher, starting, there is not much interaction between clinical teachers because you are in your own setting ...I'm not sure if it would be easy to know, in terms of getting your passwords, getting it set up, there is nothing, in the system, when there is not an orientation. So I think if they are serious about that's something they might want to do, have maybe a little orientation and make sure that every teacher knows how to go about that [accessing databases]. (9)

Some participants explicitly identified learning needs. Some participants were quite comfortable with using the databases and retrieving articles; others felt that was something they needed to learn.

Once you are out of the system for a while, you have to learn it all over again. So it's a little more time consuming. Yes, I definitely think a refresher would be a good idea for me. So I am semi confident but not a hundred percent. (10)

Integrating research use through the curriculum. Participants stated that if they could see research use woven into the curriculum and saw it as part of consistency and continuity in the program it would be helpful.

Well I think it would be really good in our curriculum, for this but also for other dimensions ...but I think we need to look at how we level this through years one through 4, this use of research in practice and I think it should definitely be introduced into year one as an awareness and how to use, how to do a library search for example....And maybe we should ask the question. You know for the non- nursing courses that the students take. How is research integrated into the course? The course content? 'Cause they should see it role modeled all the time. And then what's realistic in 2nd year and I would say don't over do it and 3rd year and 4th year so that you have this gradual level of expectations because many of us are working in silos right now.(8)

If, I think that if in the first year in the program that we start with their research and we continue throughout our clinical experiences with research as a piece of the focus then it wouldn't be so brand new to them or it would just be an

expectation that they would have. That all instructors would discuss research with them. (2)

If they had the sense the program was coordinated to encourage research use and their clinical teaching was part of a continuum it would support their use. While a few clinical teachers conveyed a sense of the placement of their course relative to other courses in the curriculum, many others did not.

We have a teacher who is absolutely superb in research, so she's exciting them in the classroom and I get to sort of say hey! Remember when you did this in class? Well now we're doing it clinically. And it's like the light comes on. It's like, oh, wow, it all goes together. (3)

In the follow up interviews both full-time instructors indicated they definitely have a sense of their course relationship with the rest of the curriculum.

I think for me because I'm already part of the institution and connected with both the sites and am aware of the focus on research because that's something that's part of our program... Being full time now I have a better handle on it,... and comfort of using the research because I know what's going on threaded throughout the curriculum... When I was part time I was clinical and I didn't have the same connection. Here I'm doing both theory and clinical so I see I thread it through a little bit more. (6F)

One clinical teacher explicitly said she had no sense of continuity of research use in the program and where her teaching was in relation to the students other learning in respect to research.

The concern that I have is that if I'm doing this I'm hoping that other people are doing it and that when they go to their next clinical instructor that the expectations would remain. But will the next clinical instructor be so into you know evidence-based practice or research? And so that's the concern I have. And another concern is that, have they been having this in the past? So I'm here at year 3 year 4 and what have we done for them in year 1 and year 2? So I have some concerns about continuity and how important is it to other people? (2)

Another participant offered a suggestion,

With just the few days there, it, sometimes it's very tough to raise it as a separate issue so I suppose a solution will have to be that it (*research use*) will have to be more built in if we were trying to work towards how to do it more as opposed to making it a separate entity. (4)

Description of Relationships Among Subcategories

The next section will explain the relationships between and among the subcategories. The relationship between values and conditions, between values and strategies, between conditions and strategies and among all three will be outlined and supporting quotes provided. Also the relationships among values, conditions and strategies and the subcategories of *students seeing the connections* and *strengthening the connections* will be outlined using quotes from participants in the follow-up interviews.

Relationship Between Values and Conditions

If the educational institution or the clinical setting values research use in practice it may support the clinical teacher's use of research in their teaching. The more the clinical teachers felt the educational institution supported research use in teaching by integrating research use into the course components (objectives, assignments and evaluations) the teacher's valuing of research was supported. However, most often participants identified the clinical setting as impeding the clinical teachers use of health care research in teaching.

One of the more senior people ...isn't that research based ...so the students aren't getting it from the nurses ...Whereas on the other side of the [specialty] unit they have developed that cause they have a senior staff, they have a stable staff, they have a stable management, senior management and they do ...do try to bring research in on a regular basis ...I can really see how that makes a huge difference because the students see that the nurses are doing that and then interest the student and they think oh you can actually apply this practically not just something that I need to do for a paper, I can actually apply it to my actual clinical setting (11F)

It's a process, you've started a process and the more and more that it's seen as valued and important and mandatory and part of everything like the curriculum, the projects, the clinical then it will happen, maybe not right away but as things progress. (9F)

Relationship Between Values and Strategies

All of the participants valued research. Valuing the relationship between research, the nursing profession and nursing education contributed to the participant's development and use of strategies and interaction with the environment. The participants identified that their valuing of research use strengthened their strategies to incorporate health care research into their teaching.

I think you have to value first and then hopefully the setting, cause you can change the setting, you can work to change it, but if you don't believe it yourself inside or see it (6F)

Relationship Between Conditions and Strategies

Characteristics of the student may affect the clinical teachers' use of research.

The clinical teachers discussed priorities in their teaching aside from using research. For example, they mentioned emphasizing communication skills and professional behaviour as other priorities for the students. For example, although the teachers valued using health care research in their teaching, they recognized other priorities for learning based on student characteristics.

The level of the students for sure...I've just had experience with first year students ...they're so focused on just the skills and communication and getting over the nervousness of being in a, in a setting for the first time that often like using research in their practice is probably the furthest thing from their mind ...even knowing it they are using research ...because that's what you're teaching them all the time ...the most up to date way of doing something and then they're using it in their practice but they don't realize it.(10F)

Participants described how variables in the environmental characteristics and student characteristics influenced the teaching strategies and *making the connections*.

as a clinical instructor I feel kind of a responsibility in a sense to create the environment that will facilitate their learning and if pieces of that environment are not optimal then that can influence the outcome for the student as well but recognizing that through all of that you can be an optimum facilitator as a clinical instructor and have a student particularly in a pass fail environment that is going to do the minimal to get passed because particularly in year three where they look at their environment and say I just don't have the time so you know there's a lot of variables that affect the student (5F)

Forming and maintaining relationships between the staff and the clinical teacher was explicitly identified by some of the clinical teachers as essential to establish an environment firstly for a positive clinical experience and secondly for incorporating use of research in clinical teaching. Clinical teachers establishing credibility with staff created more positive conditions (environment) for clinical teaching including use of health care research.

I mean if want my students to use some kind of evidence based interventions, interventions ...that relationship is going to be important and I do, a lot of my work is maintaining good relationships with the people there otherwise I'm sunk (1F)

The existing conditions influence the strategies. For example, in cases when the participant was able to find research articles, appropriate to the students and the clinical setting, she would use the research with the students. Participants were more challenged in using health care research in their teaching if relevant research was difficult to find. Teachers reported that when there was good fit between the research and the clinical setting, it was easier for the students to bring "the pieces together". If, however, fit was poor between the research and the clinical setting practice, it was a barrier. Also, the relationship between clinical teachers and staff in the clinical setting was often not supportive of the teacher bringing research to the clinical setting.

If you notice in the area, where you are working as a clinical instructor and there was something that needed to be changed, it would be a little bit difficult to do that because you are not actually a staff person there. You could bring it to someone's attention, talk to a manager about it, but it would be hard to actually implement changes or anything because you are not actually part of the regular team so that might be a barrier. (10F)

Many of the participants reinforced the need to integrate research use in the curriculum and to communicate it to all teachers.

I just think if you want students to embrace something and to experience it and utilize it, it has to be clear throughout... , I think we have to be clear of what each other is doing and that, that is a big problem and there isn't that separation somehow between the theory and the clinical and there shouldn't be....I can speak from working part time, you're not connected with what's going on... it's just the way it is ...we need to make more of a concerted effort to get that through. It wasn't until I came here full- time and said okay these are the pieces that we're threading because theory is where they first learn the research and so we should have an understanding of how the theory is being taught, what is the focus in the classroom and that, and how, what's the spill over. (6F)

All of the conditions are likely to be changing and interacting among each other and in combination with the clinical teachers' values and strategies for using health care research in their teaching.

Relationship Among Values, Conditions and Strategies

Although all of the participants indicated they valued the research in nursing and nursing education, the proposed model represents the possibility that conditions supporting research use could strengthen or weaken those values. After the proposed model was presented to the participants in the follow-up interviews, they were asked if they thought a clinical teacher who didn't value research use would function in relation to other parts of the proposed model. Many participants saw valuing research as a fundamental for research use to be incorporated into clinical teaching.

I really like this section, the valuing the connections because if you don't have a professional practice that values research then you're not going to link it to your own practice, your clinical teaching... so I think that's really the crucial ... if you don't have valuing connections first then all of the other conditions don't happen so I think that this is absolutely the key part of your model and I like the way it links and interrelates (3F)

To me that's well placed..., it [*valuing the connections*] always has to be part of the interplay and the flow because we need to... identify what our values are clearly.... because of your sample and in my anecdotal talking with others ... they [clinical teachers] are there because they do value that [research].... to me its an integral component.(14F)

However, a few of the participants in the follow- up interview suggested student expectations to use health care research in their clinical placement might encourage the clinical teacher and perhaps build or strengthen the clinical teachers' valuing of research use in clinical teaching practice. A participant explained, if students had experienced research use as an expectation consistently throughout the program and it was clearly identified as an objective of the clinical course, their expectations of the clinical teacher to use research in their teaching would definitely encourage the clinical teacher although the teacher may not value research use highly.

I think it would depend where, ...the students are. If they would be ...third year or forth year and it's ingrained in their thought or in their process they might push the teacher by asking for it [research] so even though the teacher doesn't value it he would have to or she would have to say yes you're right it's important. (9F)

When asked, some of the participants hypothesized that use of health care research in practice by people in the clinical setting promoted the clinical teachers' valuing of research and use of teaching strategies using health care research. One participant said although she valued research use she personally had become more motivated to use health care research with her students because the clinical setting highly valued research use.

I never worked in an environment that was like that before so that has really opened my eyes as a clinical instructor and as a nurse as to how that can be integrated in your actual practice and I try to make sure that my students now are involved in that whereas before I focused on ...they got the time on the floor. (11F)

Most of the participants could relate to the interaction between the parts of the model

I think it's a really nice way of capturing and clustering the information but I do like the idea that there is that synergy among and...you need the arrows in there because none of those pieces just sort of stand alone. (1F)

I certainly think that all of these pieces,... lay a helpful foundation for the student to learn are important... some of them are stronger... and not in others...As a clinical instructor, if you are looking at it and you know where your strengths are and where your weaknesses are in terms of... a personal approach... as well as the environments that you are walking into then it helps you. In a sense it says where you are coming from... To take it to a level deeper... to realize you not only have to assess those things you have to move then in and lay the foundation...Whether...the student responds to that positive environment is an individual variable (5F)

In the case of strong values and strategies the research use by the clinical teachers would likely occur regardless of the conditions.

Even if those conditions don't exist as a clinical teacher it's my values and my connecting strategies that, that I weigh more heavily on.(1F)

Relationships and communication among the clinical teacher, the people in the educational institution and clinical setting were a necessary strategy for the clinical teachers but characteristics of the clinical setting and the educational institution could promote or impede the relationships from forming.

In my perception, the role of the clinical instructor... you as an instructor constantly have to keep those links open. You have to be a PR (public relations) person. You have to be an ambassador as well for the students. And if you are able to do some of that it doesn't change the student variable but... it might help in a positive or negative way depending or not that exists (5F)

Another example of interrelatedness of the subcategories is the student. The characteristics of the students could determine the teaching strategies the clinical teachers used. Furthermore the characteristics of the student could also affect their ability to *see the connections*.

Students seeing the connections I absolutely agree with that and I do agree with the fact that most of the students aren't quite there yet where they can see and bring it all together but they're definitely on their way there most of them and you can definitely see a difference between second year and forth year in that aspect (11F)

Relationship among All of the Subcategories of Making the Connections

Overall the participants could relate to the relationships among *strengthening the connections*, the *conditions affecting the connections* and *students seeing the connections*.

And your fifth component strengthening the connections, I think those are excellent, it's definitely important...We need to have the communication absolutely so you know what's going on in the university and...with clinical instructors...so you know what's going on...what the goals of the theory courses are...and how you can link all that together and take pieces that they are already getting and take them and use them in clinical so its consistent across the whole year...are we using it at the appropriate level for them. (11F)

Two of the participants mentioned attending staff development activities which supported their use of research in their teaching. These activities had occurred since the first set of interviews.

So in terms of improving the lines of communication, very critical because I think...that we do work in silos...there's a lot more that could be done in terms of just helping understand...I found the orientation last summer was helpful to begin that process. (5F)

The orientation for part time staff...the librarian came in and gave a wonderful presentation and everyone was so enthusiastic...so that just substantiates what you're saying...any staff development opportunities are obviously going to help and talking to each other helps. (1F)

The participants identified with *making the connections* in the model from their experience.

‘Cause we as instructors are using these four ...components or four themes to help that person make that connection into the real world and we do it by you know that flow outside of them because often times students don't see that happening..., I would think we want the lines to be broken because we want it to be coming at them at all four levels..., you want to get them happening and as an instructor I need to be highly aware that there are four areas, four things that are going through in my mind so that I'm not just meeting a requirement (12F)

Students seeing the connections was influenced by the first three subcategories *valuing the connections*, *conditions affecting the connections* and *connections strategies*.

In the follow up interviews, participants described the relationships or connections among values, conditions and strategies and students seeing the connections.

It's a really nice way of capturing and clustering the information but I do like the idea that there is synergy among, and I, you need the arrows in there because none of those pieces ...stand alone (1F)

I could almost see it that these broken lines..., that these four areas are going to flow into the students, this is what we are going to put into the students to make the connections... I think it's almost like osmosis.... I like the broken lines here 'cause the arrows are,,, all this is happening but all the time that this sort of is mixing around it permeates into the students. (12F)

Definitely, cross over for sure. (6F)

So I see that as a loop... I see things as being an interconnectedness... So the inner triangle is when the student... has really integrated all of these factors and becomes actively aware and involved in research as part of their own clinical practice. (3F)

When the model was presented in the follow up interview, the sub-triangles were outlined in different colors. The analogy of color was used by one of the participants to describe the mixing of the parts of the model to the *students seeing the connections*.

These (valuing the connections, conditions affecting the connections and connections strategies) are flowing into here (students seeing the connections... they start filling it up, you see how you have those lines there... they will eventually come and make a color... a rainbow effect... it spills into there and then the orange spills into here and then the blue spills into here and then we have this connection happening or a rainbow effect happening (12F)

Strengthening the connections supports all other subcategories as identified from follow up interview discussions.

It's that whole, it's threading it through and communicating that with each other...so everything you teach is research based... we need to connect more for sure ...I just think if you want students to embrace something and to experience it and utilize it, it has to be clear throughout... we have to be clear what each other is doing and ,, there isn't that separation somehow between the theory and the clinical and there shouldn't be. (6F)

It all comes down to bridging that theory clinical gap and, and so any strategy and these are the three that come to mind, any strategy that helps to bridge that gap is gonna strengthen those connections (1F)

Connections between and among sub categories represented by figure 1, have been described. The metaphorical representation of the model in figure one indicates relationships among the subcategories to represent the central category *Making the connections*. The participants in the follow up interviews felt the model represented their experience using health care research in nursing clinical teaching practice.

A sequential diagram (see Figure 2) is now presented to explicitly represent how subcategories relate to one another and work together to achieve the central category *making the connections*. The sequential format may be beneficial in planning further research and development of the topic.

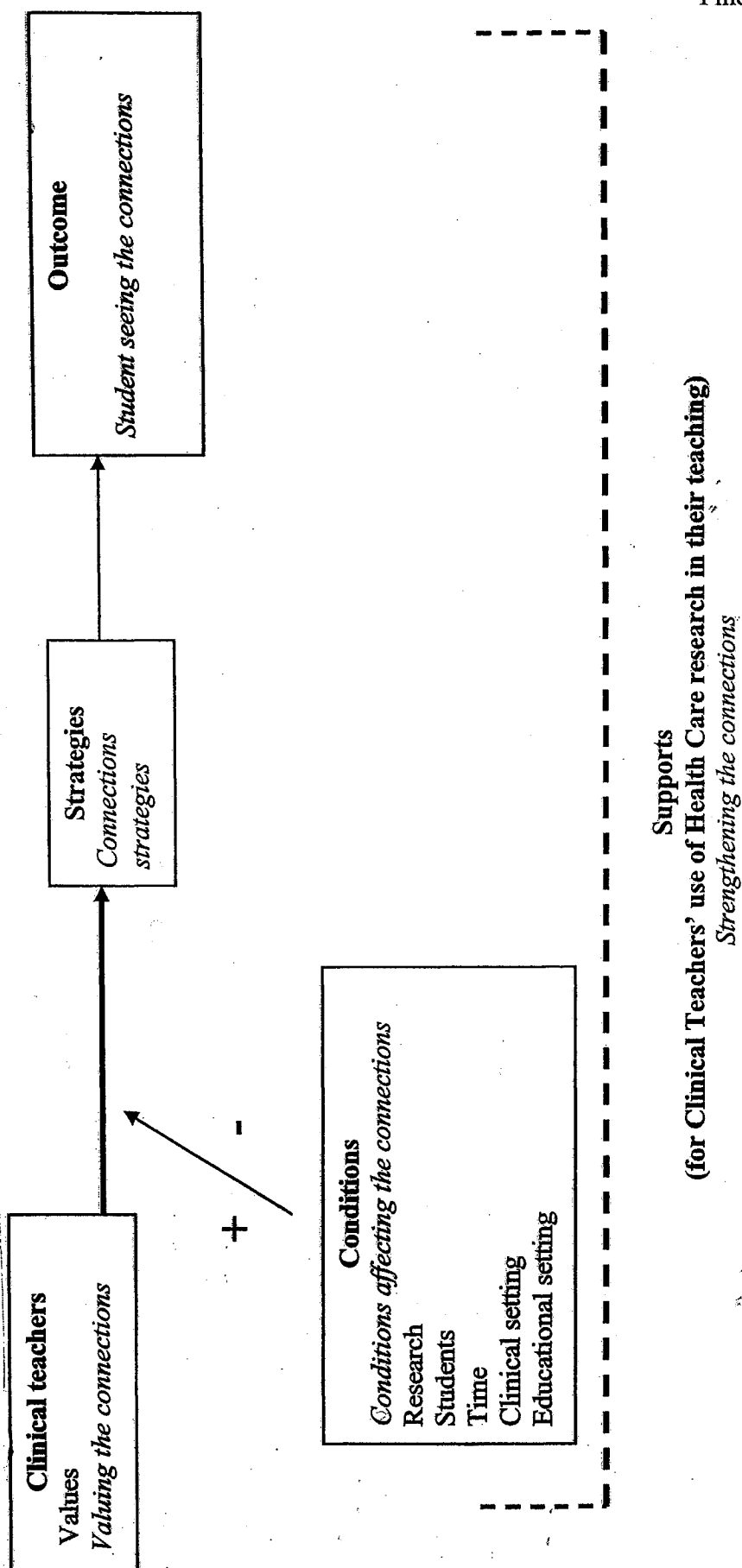


Figure 2. Sequential diagram of subcategory relationships within Proposed Model- Making the connections.

The clinical teachers' values (*valuing the connections*) contribute strongly to the use of health care research in their teaching. A clinical teacher who values research will develop strategies (*connections strategies*) to use health care research in teaching regardless of the conditions encountered. The strong relationship between *valuing the connections* and *connections strategies* is indicated by the arrow which is darker and thicker than other arrows in the diagram.

The conditions (*conditions affecting the connections*) influence the teachers' strategies. The conditions may support or impede the clinical teachers' use of health care research. The relationship between conditions and strategies is indicated by an arrow with negative or positive signs on either side of it.

The intended outcome or goal of the use of strategies (*connections strategies*) is *students seeing the connections*. Clinical teachers' use of developed strategies to facilitate students' realizing the connections between classroom learning, clinical experience and research findings is indicated by an arrow. The outcome is influenced by all parts of the diagram. The strategies used were developed by teachers who valued research and were influenced by conditions encountered by the clinical teacher.

Supports (*strengthening the connections*) for *valuing the connections*, *conditions affecting the connections* and *connections strategies* are represented by the horizontal bracket beneath the rest of the diagram. The horizontal bracket is thickened and darkened to represent the importance of the supports as indicated by the participants in the initial and follow up interviews.

This chapter has presented a description of the sample. Study findings have been

presented including the central category, subcategories and interrelationships between categories. The proposed model has also been pictorially represented and explained using a metaphorical diagram and sequential diagram.

Chapter Five - Discussion, Implication, and Limitations

Introduction

This chapter provides discussion of the findings in the context of the study purpose, objectives and theory base. Next, limitations of the study are discussed and implications for practice, education and research are identified. Finally, the implications of the study findings for the role of the advanced practice nurse (APN) are discussed.

Discussion of Results

The study purpose was to explore the use of health care research in nursing clinical teaching practice. The study objectives will provide the framework for discussion of results. Results will be compared with relevant literature and supported or refuted. The model demonstrates key themes that fulfill the study purpose.

Study Objective One- Current Practices

Throughout data collection and analysis, the complexity of use of health care research reported by the informants in their nursing clinical teaching practice was evident. Their descriptions provided the data represented by the subcategories of *valuing the connections, conditions affecting the connections, strategies for connecting and students seeing the connections*. Their descriptions also indicated the interaction between those same subcategories. I learned that all participants used health care research in their teaching despite barriers, including lack of environmental supports. Furthermore, the participants each valued using health care research in their teaching and did not view it as optional. Each of the participants were concerned with connecting research to practice through their teaching.

The reports of the complexity of clinical teaching practice are consistent with the description of clinical teaching as a boundary practice (Foulds, 2004). Nursing texts devoted to clinical teaching (Gaberson & Oermann 1999; Reilly & Oermann, 1992) also indicate the complexity of clinical teaching. However, those texts do not specifically relate nursing clinical practice to research use. Similarly, nursing texts devoted to research use and evidence-based practice (LoBiondo-Wood, Haber, Cameron & Singh, 2005; Melnyk & Fineout-Overholt, 2005) do not relate research use specifically to clinical teaching and contain only pages to education in general.

Research evidence is a key component of evidence-based practice (Estabrooks, 1999d; Sackett et al 1996; Stetler, 2001). The role of nurse educators to prepare students to search for, evaluate and apply evidence is recognized (Boland & Finke, 2005; Funk et al., 1995). The valuing of research as the foundation for practice needs to be communicated throughout nursing programs (Funk et al. 1995).

Study Objective Two - Concerns

The clinical teachers' concerns about using health care research in their teaching include; a) gaps in communication, b) the need for consistency and continuity of research use throughout the curriculum, c) their learning needs. The second objective was met primarily with data represented by the subcategories of *conditions affecting the conditions* and *strengthening the connections*. The gaps in communication identified as concerns were among clinical teachers, course coordinators, and classroom teachers within the educational institution. These concerns are reflected in the literature. The identified need for improved lines and patterns of communication is consistent with the literature (Corlett, 2000; Foulds, 2004; Higuchi et al., 2006; Oermann, 1998a; Patersen,

1997; Scanlan, 2001). Kelly (2006) surveyed clinical teaching faculty in 41 baccalaureate nursing programs in the United States. Kelly, notes part-time faculty participants identified “the need for improved opportunities for collegial dialogue and sharing in program development” (p.9).

Many of the participants were concerned because they did not know where and how research use was part of the curriculum. The participants were concerned about inconsistency and lack of continuity throughout the program. The literature supports a need for research use to be a curriculum thread woven through the program (Callister et al., 2005; Funk et al., 1991; Milner et al., 2005). Furthermore, findings in the Tiwari et al. (2005) study suggest the importance of research use must be communicated to the students by inclusion in the course objectives and evaluations. The participants identified a need of more education to assist them to use health care research in their teaching. A need for education of clinical teachers is found in the literature (Allison-Jones & Hirt, 2004; Finke, 2005; Morin & Romeo, 1994; Oermann, 2004; Oermann, 1998b; Scanlan, 2001). Allison-Jones and Hirt (2004) emphasized the importance of providing education and training for part-time clinical teachers to improve their teaching effectiveness. Study results from Kelly (2006), suggest continuing education can foster “engagement” of nursing clinical teaching faculty by contributing to a better understanding of their teaching role. Furthermore, adequate programs of orientation and continuing staff development are seen as helpful (Morin & Romeo, 1994). Higuchi et al. (2006) detected an increase (by self-report) of clinical teachers’ knowledge and use of RNAO Best Practice Guidelines (BPGs) in their teaching after participating in a workshop which included small group discussion related to integrating the BPGs in teaching. They also

found participants appreciated the opportunity to participate with faculty from all levels of the program. Higuchi et al. conclude interaction in small group sessions between classroom and clinical teachers allowed opportunities for participants to anticipate barriers and develop strategies.

Study Objective Three-Barriers and Facilitators

The third study objective was to explore factors that impede or facilitate clinical teachers' use of health care research in their teaching. Factors that facilitate or impede clinical teachers' use of health care research in their teaching include; a) valuing of health care research by the clinical teacher, b) interpersonal relationships with people in the educational institution and the clinical setting, c) time available to plan and prepare to bring research use into the students' clinical experience and d) the clinical environment for health care research use in practice. The third objective was met primarily with data represented in the subcategories *valuing the connections*, *conditions affecting the connections* and *strengthening the connections*.

High valuing of research was a facilitator of research use in clinical teaching. The clinical teachers' 'consistent high valuing of research use suggests an increased likelihood to develop strategies to include research and to persist despite less than favourable conditions. This possibility is supported by the literature (Estabrooks, Floyd et al., 2003) Each of the participants indicated valuing research in relation to the nursing practice, nursing education, and especially in relation to clinical teaching. However, it seems logical that clinical teachers who volunteered to participate in the study and were aware of its purpose are likely to value research in clinical teaching practice.

Estabrooks, Floyd et al., (2003), in a systematic review of the literature looking at individual determinants of research utilization by nurses, found attitude and beliefs toward research was the most frequently assessed and the only determinant with a consistent pattern of significant and positive effect to support a relationship between beliefs and attitudes and research utilization. Although the review is specific to nurses and not nurse educators, it seems reasonable to consider the possible influence of values on research use by clinical teachers and nursing students. Do clinical teachers value research before they teach or do they develop the value because it is a role expectation? Milner et al. (2005), in a study of clinical nurse educators, found attitude (as well as awareness of research and involvement in research) predictive of instrumental research utilization.

The participants described effective communication and relationships as a facilitator of their use of health care research in their teaching; whereas, poor relationships and lack of communication were a barrier. The importance of establishing relationships with colleagues in the educational institution is consistent with the literature (Foulds, 2004; O'Connor, 2001; Paterson, 1997; Scanlan, 2001). The need to establish mutually trusting and respectful relations with nursing staff, clinical nurse educators and nurse manager is also found in the literature (Corlett, 2000; Gaberson & Oermann, 1999; Milner, et al 2005; Paterson, 1997). Furthermore, the importance of a receptive environment for students is identified in the literature as key for a positive student experience (Paterson, 1997). Establishing closer cooperation between nursing education and nursing practice was suggested as a facilitator for research utilization (Kajermo, Nordstrom, Krusebrandt & Bjorvell, 2000).

Lack of time available to find the research, assess it and integrate it in their teaching was identified as a barrier consistently by the participants. Also, limited time with the students combined with many demands in the clinical practice setting was a barrier to research use in their clinical teaching. Lack of time to teach students during clinical placements is consistent in the literature although not specific to using research in clinical teaching (Corlett, 2000; Oermann, 1998a). In studies of barriers to research use by nurses, time was consistently found as a barrier (McCleary & Brown, 2003). Lack of time was also ranked highly as a barrier to research use by nurse teachers (Kajermo, et al., 2000). Raisler (2003) and Langan (2003) found lack of time a barrier in incorporating evidence- based care into clinical teaching.

The participants provided examples where the clinical environment provided either barriers or supports to their use of health care research in their teaching. Regardless of the presence or lack of supports from the environment, clinical teachers still used health care research. However, supports in the clinical environment made it easier for the participants to use research in their teaching. The clinical environment for health care research use in practice can be reflected in many ways. For example Estabrooks et al., (2003) suggest 24 hour access to computers in the clinical setting would support evidence- based practice. Also, students identified lack of use of research use by nurses in the clinical setting as a barrier to research use by students (Kajermo et al. 2000). The characteristics of the setting have been identified as barriers to research use by nurses (Funk et al 1991; Funk et al 1995; Kajermo et al. 2001; McCleary & Brown, 2003). The role of the clinical setting in clinical teachers' use of health care research is consistent

with the emphasis on context found in research use models (Graham & Logan, 2004; Kitson, 1999; Kitson et al., 1998; Logan & Graham, 1998).

Study Objective Four- Strategies to Promote Student Use

The strategies used by clinical teachers to promote use of health care research by students include; a) finding the research, b) forming and maintaining relationships and c) using teaching learning techniques. Finding the research includes how the teachers located the research and which types of sources they used. Forming and maintaining relationships as a strategy involved relationships with nursing staff, nursing faculty and other clinical teachers. The teaching learning techniques included knowledge brokering, role modeling, asking questions to stimulate thinking and using course components to promote students' use of health care research. The fourth objective was met primarily with data represented by the subcategories of *connections strategies* and *students seeing the connections* represent the data.

The participants found research from a variety of sources using a variety of methods. Online data searches and retrieval of research articles were not used by some of the participants. Not having access to or not being able to find appropriate research is a barrier to research use by nurses (Estabrooks, 2003; Funk et al 1991; Funk et al 1995; Kajermo et al. 2001; McCleary & Brown, 2003). Finding and evaluating research has also been identified as a barrier for midwifery educators (Erickson-Owens & Kennedy 2001). Morrissey and DeBourgh (2001) provide suggestions for refining search skills to assist advanced practice nurses to find research evidence.

The importance of clinical teachers establishing relationships is found in the literature (Morin & Romeo, 1994; Paterson 1997; Scanlan, 2001). No literature was

found indicating the importance of establishing relationships specific to research by clinical teachers.

The participants described the strategies they used to incorporate research use into their teaching. These techniques included linking the student to the research in some way (knowledge brokering), role modeling, using questions to stimulate critical thinking and using course components to help the student begin to see the links among classroom learning, research and clinical practice experience. These strategies are found in the literature although not always specific to research use in clinical teaching practice. The goal of the teaching learning techniques participants used was to facilitate the students seeing the connections between and among classroom learning, clinical experience and research findings. The role of the clinical teacher to help students link classroom learning to the clinical experience is found consistently in the literature either in books about clinical teaching (Gaberson & Oermann, 1999; O'Connor, 2001) or in research articles (Oermann, 1998b). Participants in Foulds (2004) study used the terms “mentor, supporter, facilitator, model and advocate” to describe their teaching practice. Corlett (2000) asserts educators are “pivotal” to linking of theory and practice by students. Furthermore, Corlett sees as crucial, the use of techniques to encourage students to see relevance and to help them apply theoretical knowledge in a more structured basis in the clinical area. The importance of clinical teachers modeling behaviours to students as a way of facilitating learning is consistently found in books about clinical teaching (Gaberson & Oermann, 1999; O'Connor, 2001; Reilly & Oermann, 1992). Kessenich et al. (1997), identify the importance of role modelling in teaching nursing students evidence-based nursing.

Use of questioning as a strategy to enhance students' learning is consistently found in the literature. While student recall of information is part of the questioning, facilitating the student to connect the facts with concepts, and to apply these to situations encountered in the clinical placement is an important function of questioning (Erickson-Owens & Kennedy, 2001; Gaberson & Oerman, 1999; O'Connor, 2001).

Participants often mentioned using the course components, assignments for example, as strategies to help the student see the connections between classroom learning, research and clinical experiences in the clinical practice setting. The use of course components, for example, nursing care plans and course assignments is also found in the literature (Foulds, 2004). Kessenich et al.(1997) briefly mention their experience using research literature for clinical assignments as a successful strategy in teaching evidence- based nursing

Discussion of Results in Relation to Theory Base

The study purpose is to explore the use of health care research in nursing clinical teaching practice. I was interested in how clinical teachers used health care research in their teaching. The Ottawa Model of Research Use (Graham and Logan, 2004; Logan & Graham, 1998) provided a useful starting framework to understand the factors that interact and affect the use of health care research in clinical teaching practice. In the OMRU, the potential adopters are described as "those whose behaviour or practice are targeted for change" (Graham & Logan, 2004, p.93). Within the context of my research, the innovation is incorporation of health care research in teaching practice therefore the teachers are the primary adopters. However if clinical teachers are successful, students will incorporate research into their own practice and therefore are secondary adopters.

Clinical Teachers as Potential Adopters

Using the Ottawa Model of Research Use (OMRU) framework, viewing the clinical teacher as potential adopter proved a suitable way to explore the research topic. Specifically, the concepts identified for assessment included the clinical teachers' current practices and concerns about using health care practices. Also, the barriers and supports clinical teachers had encountered and the strategies they used to incorporate research into their teaching were assessed during data collection and analysis. The data provided by the participants in these four areas provided the basis for the analysis.

When the clinical teacher is considered as the potential adopter, as contexts the clinical setting and educational institution include facilitators to develop strategies supporting teachers' use of health care research. Participants provided data, represented by the subcategory *strengthening the connections*, which specifically points to the educational institution to support teachers' use of health care research in their clinical teaching by improving lines of communication, providing staff development opportunities, and integrating research use throughout the curriculum. Using the OMRU, after assessing the potential adopter including current practices and concerns and considering the context of the practice environment, the next step would be to develop and implement strategies to support, encourage, strengthen, facilitate health care research adopters (Graham & Logan, 2004). Similarly, the results of this study suggest implications for nursing practice, nursing education and nursing research as well as implications for the advanced nursing practice which will be described in the implications section

Student as Potential Adopter

Although, I assessed the clinical teachers as potential adopters by assessing their current practices, concerns, factors affecting and strategies used in relation to research use in their teaching practice, there is in this research, another potential adopter- the student. When the student is considered as the potential adopter, clinical teachers can be considered as facilitators to develop strategies supporting the students' use of health care research. However, since the data collection was from the clinical teachers' perspective of their use of health care research in their teaching no direct implications for students were detected.

In summary, the OMRU was a useful framework to inform my study objectives and formulate open- ended interview questions. Consequently, the study findings are relevant within the context of the OMRU. However, analysis of the data has produced a model (figure 1) in which connections and interrelationships between the potential adopters, practice environment and strategies have more emphasis than is evident in the OMRU.

The description of clinical teaching as a boundary practice indicated the need to consider the interaction of the clinical teacher with the clinical practice and educational practice settings during data collection (Foulds, 2004). The importance the clinical teachers placed on forming and maintaining interpersonal relationships in both the clinical and educational settings supports Foulds' (2004) model and findings.

Study Limitations

Transferability (Miles & Huberman, 1994) may be limited by having drawn all participants from one educational program. However, the characteristics of the sample are adequately described to allow a reader to assess the transferability to another context..

The absence of teachers having between 6 and 15 years clinical teaching experience may be considered a study limitation. The gap in the sample may be because of restricted hiring between 1993- 1998 (Dr. Betty Cragg, personal communication, December 1, 2005). However, when responses from clinical teachers with 6 years or less experience were compared to those of the participants with fifteen or more years experience, no appreciable differences were noted.

Participant bias is a study limitation. All of the participants indicated that they valued use of research in relation to the nursing profession, nursing practice, nursing education clinical teaching. The participants also valued linking classroom and clinical learning. It could be inferred that only those who did value research in clinical education would volunteer for this study. Ideally, it would have been useful to interview clinical teachers who did not value research as highly because a clinical teacher who did not value research might have different priorities than the participants and might easily be discouraged from using research in clinical teaching. Since research use is valued highly in nursing education several possibilities arise (Miller et al., 1994; Mulhall, 1994). Either, a) only those clinical teachers who value research volunteer for research on the topic, b) only nurses who value research use in nursing are likely to become clinical teachers, or c) clinical teachers identify valuing research use because it is expected of educators. The results of the study indicate the factors that impede or facilitate use of

health care research in nursing clinical teaching practice with teachers who value research. One would assume these factors would also affect teachers who valued research use less or teachers who had other priorities. Consideration of factors affecting research use by clinical teachers in this study could be used to develop strategies to develop supports and weaken barriers to promote use of health care research by clinical teachers who do not value research as highly as the participants. Suggestions for strategies are discussed in the implications section of this chapter

The study is based on the perspective of clinical teachers. Certainly, the perspectives of course coordinators and students might add to the understanding of use of health care research in nursing clinical teaching practice and is an area for future study. However, since there is a little research in the area of research use in nursing clinical teaching practice, it was reasonable to start with interviewing clinical teachers for their perspective.

Implications of the Study

Based on study findings, implications and recommendations will be presented for practice, education and research. Next, the implications of the study findings for the role of the advanced practice nurse in a clinical setting will be discussed. Lastly, the study implications for the clinical teacher as advanced practice nurse will be presented.

Implications for Nurses Teaching Clinical Practice

The study results and the model developed can be useful for clinical teachers. Clinical teachers often begin as experts in the practice setting but have little knowledge of teaching theory and strategies (Scanlan 2001; Oermann, 1998a). Clinical teachers may use the proposed model to identify and assess their learning needs. They then could use

the model for reflection on their experiences with using research in their teaching. Also clinical teachers may use the *conditions affecting the connections* to assess barriers and supports in their teaching and practice environments and develop their own strategies to weaken barriers and strengthen supports to promote use of health care research by their students. In fact, some participants mentioned during the initial interview that it was helpful as an opportunity to reflect on this particular part of their practice. In follow up interviews some of the participants commented that the model would help them to reflect on their practice and assess where they needed to seek more support.

Clinical teachers need to establish relationships with and seek support from nurses in the educational institution including other clinical teachers, classroom teachers and course coordinators. Because clinical teachers are in an isolated role as they teach students in clinical setting, they need support and input from those who share their responsibilities and experience. Clinical teachers should actively seek support from other clinical teachers, course coordinators and classroom teachers. The importance of establishing and maintaining interpersonal relationships with people in the educational institution emerged as important strategy from the participant interviews. The participants who shared with each other and received help from others felt more prepared to use research in their clinical teaching. These participants also stated more interaction with colleagues would be a further support. Foulds' (2004) study supports the importance of establishing relationships between clinical teachers and classroom teachers. The forming of clinical teaching teams is an example of community of practice (Foulds).

Clinical teachers need to actively establish relationships with and seek support from people in the clinical practice setting including nurses, clinical educators and nurse

managers. The participants also identified the importance of forming and maintaining relationships with nurses in the clinical setting. In cases where relations were poor, participants found clinical teaching and student learning was difficult. Clinical teachers should actively establish relationships with clinical educators, managers and staff. The importance of communication between teachers and nurses in the clinical environment was supported in the literature (Foulds, 2004; Patersen, 1997). Establishing regular communication of goals, changes in practice and use of research in practice would promote a positive environment for teaching/ learning of research use.

Implications for Nurses in Full-time Faculty or Administrative Roles in Education

The participants suggested ways of *strengthening the connections* by improving lines of communication, providing staff development opportunities and integrating research use throughout the curriculum. There is a need to develop and promote regular communication among clinical teachers, classroom teachers and course coordinators. There is a need for provision of orientation and staff development opportunities for clinical teachers where they can interact with one another and with classroom teachers and course coordinators. This need was reflected by people who had experience teaching the concurrent classroom course. They reported they had a better sense of the connection among classroom learning, research and student clinical experiences and were better able to help the student to see the connections than they had when they were teaching the clinical course only. Possible topics for continuing education include on-line search strategies, how to assess the appropriateness of the research for the students and the clinical area, and how research use fits throughout the curriculum. Panel discussion and small group discussion could be used to promote exchange of strategies and problem

solving. Also clinical teachers need to be provided with information on resources available to them to support them in using research in their teaching.

Clinical teachers need to be informed about how research use fits throughout the curriculum. As many participants stated, they were concerned that clinical teachers' use of health care research needed to be consistent and coordinated. Research use being integrated throughout the curriculum communicates that it is valued in the nursing program and encourages the valuing of research use by clinical teachers. The more a topic is imbedded in curriculum the more likely it is to become part of the culture (Fineout-Overholt, Cox, Robbins, & Gray, 2005). If the placement of research use is not explicit in the curriculum, a review of the curriculum would be useful (Harrison & Graham, 2003). Use of concept mapping, similar to (Van Neste-Kenny, Cragg & Foulds, 1998) could be used to envision where and how research use fits within the curriculum, would be helpful. The importance of research use should be also be explicit in course objectives, assignments and evaluations.

Establishing regular patterns of communication among clinical teachers, course coordinators and classroom teachers would promote use of health care research by clinical teachers. Increasing the number of nursing faculty who teach in both classroom and clinical settings is suggested. This may promote more communication and sharing of relevant information among classroom teachers, clinical teachers and course coordinators.

Implications for Research

In the follow up interviews, the model appeared to resonate with the participants. Each participant confirmed her experience using health care research in clinical teaching was represented in the model. Future research could clarify concepts and result in refinement of the model. The model would be further developed by presentation of the findings to other groups of clinical teachers to see if findings hold true in other settings/contexts. Seeking other contexts to apply the model is consistent with view of Elliott and Lazenbatt (2005). This study is a first step to explore clinical teaching practice in relation to use of health care research. The results of this study could be the basis for development of a quantitative data collection tool. The tool could provide for larger sampling within and across different baccalaureate nursing programs and be used to confirm or revise the study model. Future research would include qualitative sampling from other collaborative baccalaureate nursing programs to confirm or further develop the model.

Each of the participants valued research. A possible hypothesis, resulting from the findings of the study, is the valuing of research in the nursing profession and nursing education contributed to the participant's development and use of strategies. A future study would examine the correlation between values and the integration of health care research in clinical teaching. The effect of the strength or weaknesses of those values on research use in clinical teaching practice is beyond the scope of this study and indicates an area of future research. Also future investigation of other values held by the clinical teachers and their influence on content and teaching strategies used would be useful.

Investigation of the effectiveness of strategies clinical teachers use in general and specifically to promote the students seeing the connections between classroom learning, clinical experience and research would be useful. Furthermore, including the perspectives of students, classroom teachers and clinical teachers would provide insight into the perceived effectiveness of the strategies.

Although the model was developed to represent how clinical teachers used health care research in their teaching, the model may be relevant when considering how clinical teachers integrate other innovations in nursing into their teaching. Potentially the model could be used as a tool to consider how clinical teachers use other concepts in their teaching practice. The connections the participants described may be just as relevant to another new concept. Further research is suggested.

Another area of future research suggested is exploration of the use of health care research by nursing students. The research would provide insights into student use and perhaps indicate teaching strategies that would promote research use by students.

The Role of the Advanced Practice Nurse (APN)

Advanced practice nurses (APNs) are aware of the need for nurses to use research as part of their practice. The role of the APN employed in the clinical setting will first be considered followed by the clinical teacher's role as an APN.

APN Employed in the Clinical Setting

The APN employed in the clinical setting is well situated to promote research use by nurses, clinical teachers, and students in the practice setting. The APN could modify conditions in the clinical setting that affect research use by clinical teachers. The model could be used by an APN within the placement setting to assess the conditions that affect

use of health care research in nursing clinical teaching practice. One modification, for example, establishing regular sharing between nurse managers or clinical nurse educators and clinical teachers and nursing staff of how research is being used by nurses in the clinical setting and by nursing students would promote awareness, cohesiveness, and strengthen relationships. This suggestion is consistent with Paterson (1997). Also, the APN could act as a liaison between the educational institution and the clinical setting and clarify the expectations of staff, clinical teachers and nursing students

Another modification to the conditions would be to develop and promote a research friendly environment for both nursing staff and nursing students. The APN could act in a consultant role by providing research relevant to student experiences in the practice setting. Udod and Care (2004) sees the role of nurse leaders in establishing a climate in which evidence based nursing practice can flourish. Also an APN could demonstrate how research has contributed to the nursing practice in the placement area by using strategies such as care maps, and policies and procedures. The APN's encouragement and promotion of an atmosphere where the nursing staff are aware of the relevance of research to practice and comfortable with the concept would be a support to clinical teachers and students in using research. As an expert in practice, the APN could share with the clinical teachers and students how research contributes to planning care with patients. Students seeing research being used in practice would reinforce their learning and facilitate *students seeing the connections*. In a leadership role, the APN could advocate for convenient online access to research sources to support the use of research in the practice setting by nursing staff and students. By promoting an environment where use of research becomes a norm, the APN would be providing a

supportive environment where students would see how research findings are integrated into practice and see working nurses using and valuing research use.

Clinical Teacher as APN

A clinical teacher is an educator and as such is in an APN role. Although not all clinical teachers may be prepared to function as an APN, those clinical teachers with graduate preparation are adequately prepared to take an APN role. Furthermore, the clinical teacher fulfills the roles of an APN in practice, research and education within the teaching context.

As an expert in teaching practice, clinical teachers develop skills, knowledge and resources to be shared with others. The experienced clinical instructor as APN can play a role as a mentor for new clinical teachers. In a survey of faculty needs for orientation, Morin and Romeo (1994) found subjects mentioning the importance of having a mentor. The use of mentors to support clinical teachers was also suggested by (Oermann, 1998a).

As an APN role, the clinical teacher could develop research that builds knowledge and evidence about nursing clinical teaching practice in general. Furthermore, research into clinical teaching strategies that promote use of health care research by nursing students would build a body of knowledge and evidence useful for clinical teaching.

In summary, the study findings have been discussed in relation to study purpose and objectives and theory base. Also, limitations of the study have been identified. Furthermore, implications for practice, education and research have been discussed. Although, the implications of this study relate specifically to health care research in

nursing clinical teaching practice, they are also relevant to other areas of clinical teaching practice.

Conclusions

This qualitative study used a grounded theory approach to explore the use of health care research in nursing clinical teaching practice. A review of the literature found no research specific to how clinical teachers use research in their teaching practice with nursing students. Analysis of data from 15 clinical teachers resulted in the emergence of the central category *making the connections* and the subcategories *valuing the connections*, *conditions affecting the connection*, *connections strategies*, *students seeing the connections* and *strengthening the connections*.

The results of this study offer insight into the challenges of using health care research in nursing clinical teaching practice and provide a framework facilitate discussion and research and to develop strategies for improvement.

Developing strategies to support clinical teachers is a challenge given pressures of limited resources within the clinical practice settings and educational settings. Given the limitation of resources in the teaching learning environments, finding and sharing and supporting these strategies requires creativity and determination.

Dissemination of results of this study is planned with presentations at future conferences and publications. Critique of the results will help to build the model further and encourage further research in this area.

Although the subcategories and model represent the participants' use of health care research in their nursing clinical teaching practice, I feel it is only an approximation of the complexity of the participants practice. I feel the whole *Making the connections*;

Use of health care research in nursing clinical teaching practice, is greater than the sum of its parts represented by the subcategories.

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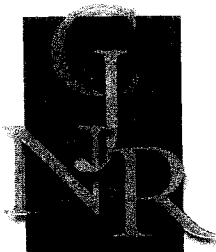
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Appendix A

Permission Letter from Canadian Journal of Nursing Research

CJNR
School of Nursing
McGill University



CJNR
École des sciences infirmières
Université McGill

May 3, 2006

Nancy Lada

Dear Ms. Lada,

Please let this letter serve to confirm that *CJNR* hereby grants you permission to use the OMRU Model figure from the following article in your Master's thesis:

figure 1 on p. 94 of
Graham, I & Logan, J. (2004). Innovations in knowledge transfer and continuity of care. *CJNR*, 36 (2), p. 89-103.

Sincerely,

Morgan Charles
CJNR

Appendix B

Permission Letter from Dr. Barbara Foulds

May 10, 2006

To Whom It May Concern:

This letter provides permission for Nancy Lada to include my doctoral thesis materials in her thesis entitled: Health Care Research in Nursing Clinical Teaching Practice.

Sincerely,

Barbara J. Foulds Ph. D.
Chair, Nursing Studies
Algonquin College
1385 Woodroffe Ave
Ottawa, ON

Appendix C

Letter of Support Algonquin College

SCHOOL OF HEALTH AND COMMUNITY STUDIES

Catherine Lesage
Protocol Officer for Ethics in Research
Office of Vice-Rector (Research)
30 Steward St, Room 301

Re: Proposal from Nancy Lada

Nancy Lada, a Masters of Nursing candidate from the University of Ottawa has requested access to clinical teaching faculty in the Nursing Studies division of the School of Health and Community Studies at Algonquin College. As Chair of the Nursing division, I am in agreement with allowing her to contact teachers in nursing programs and am willing to provide her with the means to communicate with the faculty I have assigned to clinical teaching in 2004-2005.

Sincerely,

Barbara J. Foulds Ph.D.
Chair, Nursing Studies

BF/ws

Appendix D

Letter of Support University of Ottawa



Université d'Ottawa • University of Ottawa

Faculté des sciences de la santé
École des sciences infirmières

Faculty of Health Sciences
School of Nursing

February 21, 2005

Ms. Nancy Lada, M.Sc.N Student
School of Nursing
Faculty of Health Sciences
University of Ottawa
INTRA

Dear Ms. Lada:

It is with great pleasure that I am writing this letter to support your research project entitled « Use of Health Care Research In Nursing Clinical Teaching Practice » that you are planning to conduct as a part of your Master in Nursing Science Program at the University of Ottawa School of Nursing.

During the data collection period, I will allow you access to the premises of the School of Nursing at the University of Ottawa to conduct interviews. I am also authorizing staff at the administrative secretariat to send out your recruitment e-mail with the introduction letter as an attachment using the list of part-time professors who have taught as clinical instructors in our programs during the past 12 months. However, I must stress that their decision to participate remains at the discretion of each individual person.

I wish you success in your research and the continuation of your program.

Best regards,

Sylvie Lauzon, RN, PhD
Director and Associate Dean

Appendix E

Research Ethics Board Approval Algonquin College

Applied Research Ethics Approval Board

Certification of Ethical Approval

This is to certify that Algonquin College Research Ethics Board (REB) has examined the application for ethical approval for the research project **Health Care Research in Nursing Clinical Teaching Practice (file H 03-05-04)**. The members of the REB found that the research project met the appropriate ethical standards. The certification is valid for one year from the date indicated below.


Barbara J. Foulds
Chair, REB
Algonquin College


Date

Appendix F

Research Ethics Board Approval University of Ottawa



Université d'Ottawa - University of Ottawa

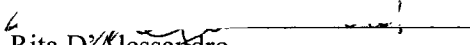
Cabinet du vice-recteur
à la recherche

Office of the Vice-Rector,
Research

HEALTH SCIENCES AND SCIENCE RESEARCH ETHICS BOARD

CERTIFICATE OF ETHICAL APPROVAL

This is to certify that the University of Ottawa Health Sciences and Science Research Ethics Board has examined the application for ethical approval of the research project entitled **Use of Health Care Research in Nursing Clinical Teaching Practice (file H 03-05-04)** submitted by Nancy Lada who is supervised by Dr. Betty Cragg, both of the School of Nursing, Faculty of Health Sciences. The Board found that this research project met appropriate ethical standards as outlined in the Tri-Council Policy Statement and in the Procedures of the University of Ottawa Research Ethics Boards, and accordingly gave it a Category 1a (approval). This certification is valid for one year from the date indicated below.


Rita D'Alessandro
Protocol Officer for Ethics in Research
For Dr. Daniel Lagarec, Chair of the
Health Sciences and Science REB

April 4, 2005
Date

Appendix G

Letter of Information



Université d'Ottawa • University of Ottawa

Faculté des sciences de la santé
École des sciences infirmières

Faculty of Health Sciences
School of Nursing

Letter of Information

I am a graduate student in nursing at the University of Ottawa. As a requirement for my Masters in Nursing, I would like to explore the use of health care research in nursing clinical teaching practice for my thesis. I am interested in clinical teachers' use of health care research in their teaching, their concerns about using health care research in their teaching practice, the factors that impede or facilitate use of health care research in teaching, strategies used to promote use of health care research by students and concerns related to use of health care research in clinical teaching practice. Dr. Betty Cragg, Professor of Nursing, University of Ottawa is the supervisor of the study.

As a participant in the study, you will be asked to take part in an initial interview composed of demographic and semi-structured interview questions. The interview will be tape-recorded and last approximately 60 to 90 minutes. If you agree to participate, the interview will be arranged at a time and location convenient to you and may be conducted in- person or by telephone as you prefer. In the case of an in-person interview, an informed consent form will be signed by you prior to the interview. In the case of telephone interview, the consent form will be returned by email, and confirmed at the beginning of the interview. You are under no obligation to participate in this study. An optional second interview may be requested by the researcher to elaborate or confirm analysis. You may refuse to answer any questions or may withdraw from the study at any time, for any reason without any impact on your employment status.

Anyone who has taught in a clinical setting in the collaborative BScN nursing program in the last 12 months is eligible to participate. Since I only understand English, all participants need to be able to read, speak and understand English.

Confidentiality of all participants will be protected. Tapes, paper copies of transcripts and files and back up computer files will be kept in a locked container in the investigator's office. Electronic transcripts and computer files will be password protected in the investigator's computer. This study has been approved by the Health Sciences and Science Research Ethics Board of the University of Ottawa. If you are quoted in the results of the research, your name and any identifying characteristics will not be used. No names or identifying information will appear on the transcripts or any other document that is produced based on this study. The demographic information will be grouped to describe the characteristics of the participants.

451, ch. Smyth
Ottawa (Ontario) K1H 8M5 Canada

451 Smyth Rd.
Ottawa, Ontario K1H 8M5 Canada

(613) 562-5473 • Téléc./Fax (613) 562-5443



Université d'Ottawa · University of Ottawa

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École des sciences infirmières

Faculty of Health Sciences
School of Nursing

If you are interested in volunteering to participate in the study or would like to hear more about it please fill in the information below, cut and paste it into an email, and send it to Nancy Lada at nancy.lada@rogers.com or leave a telephone message with your contact information at (613) 562-5800 ext 8348

_____ Yes, I am interested in the study, Use of Health Care Research in Nursing Clinical Teaching Practice. *(please mark the blank space if you agree)*

Please complete the following information

_____ Yes, I am interested in the study, Use of Health Care Research in Nursing Clinical Teaching Practice. *(please mark the blank space if you agree)*

My name is: _____ Institution: _____

Email address: _____ Phone number: _____

I prefer to be contacted by : _____ (email or telephone)

A convenient time to contact me is _____

I prefer a (n) _____ (in-person or telephone) interview.

If you have any questions or concerns, contact Nancy Lada at nancy.lada@rogers.com or Dr. Betty Cragg (thesis supervisor) at bcragg@ottawa.ca, or leave a message at (613) 562-5800 ext 8348. If you have any questions with regards to the ethical conduct of this study, you may contact the Protocol Officer for Ethics in Research, University of Ottawa, 550 Cumberland Street, Tabaret Hall, room 159, Ottawa, Ontario, K1N 6N5, telephone: (613) 562-5841, email: ethics@uottawa.ca

I thank you for your assistance with this study.

Sincerely,

Nancy Lada, RN, BScN
MScN Student
University of Ottawa

451, ch. Smyth
Ottawa (Ontario) K1H 8M5 Canada

451 Smyth Rd.
Ottawa, Ontario K1H 8M5 Canada

(613) 562-5473 • Téléc./Fax (613) 562-5443

Appendix H

Recruitment Email Algonquin College

Appendix B
Recruitment Email for Algonquin College
ALGONQUIN COLLEGE

SCHOOL OF HEALTH AND COMMUNITY STUDIES

Nancy Lada, a Master of Science in Nursing Student at the University of Ottawa, is conducting a research study for her thesis entitled **Use of Health Care Research in Nursing Clinical Teaching Practice**. Dr. Betty Cragg, Professor of the School of Nursing is her supervisor. Nancy is looking for clinical teachers in the collaborative BScN program at University of Ottawa and Algonquin College to volunteer to participate in her research . Participation would consist of a 60-90 minute interview about your experiences with using health care research in your clinical teaching. The interview will be scheduled at a time convenient to you. For more information on the study please see the Letter of information attached to this email or contact Nancy at nancy.lada@rogers.com or Dr. Betty Cragg (supervisor) at bcragg@uottawa.ca, or (613) 562-5800 ext 8348.

If you are interested in participating in the study please complete the information below, cut and paste it into an email and send it to Nancy at nancy.lada@rogers.com

_____ Yes, I am interested in the study, Use of Health Care Research in Nursing Clinical Teaching Practice. (please mark or highlight the blank space if you agree)

My name is:_____ Institution:_____

Email address:_____ Phone number:_____

I prefer to be contacted by _____ (email or telephone)

A convenient time to contact me is _____

I prefer a (n) _____(in-person or telephone) interview

Appendix I

Recruitment Email University of Ottawa

Appendix A
Recruitment Email
For University of Ottawa School of Nursing

University of Ottawa School of Nursing Faculty of Health Sciences

Nancy Lada, a Master of Science in Nursing Student at the University of Ottawa, is conducting a research study for her thesis entitled **Use of Health Care Research in Nursing Clinical Teaching Practice**. Dr. Betty Cragg, Professor of the School of Nursing is her supervisor. Nancy is looking for clinical teachers in the collaborative BScN program at University of Ottawa and Algonquin College to volunteer to participate in her research . Participation would consist of a 60-90 minute interview about your experiences with using health care research in your clinical teaching. The interview will be scheduled at a time convenient to you. For more information on the study please see the Letter of information attached to this email or contact Nancy at nancy.lada@rogers.com or Dr. Betty Cragg (supervisor) at bcragg@uottawa.ca, or (613) 562-5800 ext 8348.

If you are interested in participating in the study please complete the information below, cut and paste it into an email and send it to Nancy at nancy.lada@rogers.com

_____Yes, I am interested in the study, Use of Health Care Research in Nursing Clinical Teaching Practice. (please mark or highlight the blank space if you agree)

My name is:_____ Institution:_____

Email address:_____ Phone number:_____

I prefer to be contacted by _____ (email or telephone)

A convenient time to contact me is _____

I prefer a (n)_____ (in-person or telephone) interview

Appendix J
Interview Guide

In- person Interview Text

Good morning/ afternoon. My name is Nancy Lada. As part of my thesis In the Master of Science in Nursing program at the University of Ottawa, I am conducting a study on the use of health care research in nursing clinical teaching practice. Thank you for agreeing to participate in this interview for the study. Before I ask you any interview questions, I ask you to read and sign this consent form for the study. (Discuss and have participant read and sign consent).

I will be audiotaping this interview. The tape can be turned off at any time if you wish and you are free not to answer any question I ask. Your name will not be used in connection with any of your comments from today's conversation..

The information I collect today will contribute to a better understanding of use of health care research in nursing clinical teaching practice. This interview will last approximately 60 to 90 minutes.

Telephone Interview Text

Hello, My name is Nancy Lada. We had arranged to have an interview at this time. It should take 60 to 90 minutes. Are you able to answer the interview questions over the phone at this time? (*if yes, continue, If no ask to reschedule interview*)

As you know, I am conducting a study on the use of health care research in nursing clinical teaching practice. Thank you for agreeing to participate in this study. I have received your consent information via email. Before we begin I need to confirm that you agree to participate. Have you read the consent. Have you read the consent? Do you have any questions or concerns? Do you consent to participate in the study?

As stated in the consent form, I will be audio-taping this interview. The tape can be turned off at any time if you wish and you are free not to answer any question I ask. Your name will not be used in connection with any of your comments from today's conversation..

The information I collect today will contribute to a better understanding of use of health care research in nursing clinical teaching practice.

Demographic Questions

How would you describe your position at the University/College?

How many years have you been a clinical teacher in nursing?

For which institution(s) do you teach?

What course (s) do you do teach?

In what year of the program are the students you teach?

Which setting do you teach in ? community, acute care, chronic care

Are you employed as a nurse elsewhere? If yes, in what clinical setting do you practice?

Do you teach classes as well as a clinical course?

Please tell me your age.

When did you first graduate as a nurse?

Was your basic nursing education a diploma or degree?

What level of education do you have? (Baccalaureate, Master's, PhD)

And when did you receive your most recent degree?

When did you last take a research methods/research utilization course?

Have you had any continuing education on research use in practice? If yes, what?

Semi structured Interview Questions

a) **When I say use of Health care research what does that mean to you?** (added between 2nd and 3rd interview)

b) **How do you see using HCR fitting with clinical teaching?** (added between 2nd and 3rd interview)

1. **What has your experience been with using health care research in clinical teaching?**
2. **Do you currently use health care research in your clinical teaching?**

If yes- what strategies do you use?

If no, what strategies might you use?

*If have used or do use health care research in teaching ask question 3
if answered no to question 2, skip question 3 and go on to question 4*

3. **How have you used health care research in your clinical teaching?**

Probe -describe what went well

-describe what didn't go well

can you give an example ?

4. **What concerns do you have about using health care research in your clinical teaching?**

Probe- How prepared do you feel to use health care research in your teaching practice?
Why do you feel prepared/ not prepared?

5. **How does using health care research fit into your priorities as a clinical teacher?**

Probe- what other priorities do you have?

6. **What factors support your use of health care research in teaching?**

Probe- personal factors?,
organizational?,
communication/ access to the research?,
research itself?

7. **What factors impede/ prevent your use of health care research in teaching?**

Probe- personal factors?,
organizational?,
communication/ access to the research?,
research itself?

Add on – Do you see any relationship between theory and clinical in terms of using HCR? Tell me more about that (added between interview 8 & 9)

8. What are your expectations of students related to using health care research in practice?

Probe- what indicators do you look for ?

Probe-How would you evaluate student use of health care research)

Probe-What sources of health care research would you feel appropriate for students to use (journal article, systematic review, clinical practice guidelines, Best Practice Guidelines)

9. Is there anything else you would like to say?

Thank you for participating in the study and sharing your experience and thoughts during the interview.

Appendix K

In-person Interview Consent



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Faculté des sciences
de la santé

École des sciences
infirmières

University of Ottawa
Faculty of Health
Sciences

School of Nursing

In-Person Interview Consent

Study Title - Use of Health Care Research in Nursing Clinical Teaching Practice

Principle investigator- Nancy Lada, RN, BScN
Master of Science in Nursing student
University of Ottawa
(613) 836-2391

Thesis supervisor- Dr. Betty Cragg, RN, EdD
Professor
School of Nursing
University of Ottawa,
(613) 562-5800 ext 8348
Fax (613) 562-5443

INVITATION TO PARTICIPATE

I am invited to participate in the abovementioned research study conducted by Ms Nancy Lada, Master of Science in Nursing Student, who is being supervised by Dr. Betty Cragg, both of the School of Nursing, Faculty of Health Sciences, Department of Graduate Studies.

PURPOSE OF THE STUDY

I understand that the purpose of this study is to explore the use of health care research in nursing clinical teaching practice. From this study, the researcher wishes to explore use of health care research by clinical teachers, their concerns about using health care research in their teaching practice, the factors that impede or facilitate use of health care research in teaching, strategies used to promote use of health care research by students and concerns related to use of health care research in clinical teaching practice.

ELIGIBILITY

To be able to participate in this study, I must have been employed as a clinical teacher in the collaborative nursing program at University of Ottawa or Algonquin College Woodroffe or Pembroke campus within the last 12 months and be able to understand, read and speak English.

PARTICIPATION

I understand that I will be asked to participate in a face-to face audiotape – recorded interview lasting 60-90 minutes and conducted by Nancy Lada. The interview will be arranged at a time and location convenient to me. My participation will consist essentially of being

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School of Nursing

interviewed for approximately one hour to one and one half hours. The audio tape can be turned off at anytime I wish and I am free not to answer any question. I may withdraw at anytime without affecting my employment. I understand that I have the option to be contacted by the researcher to participate in a second interview to elaborate or confirm analysis. The second interview will be approximately 30- 45 minutes in length.

RISKS

I may be inconvenienced by time taken from other responsibilities or by travel costs.

BENEFITS

I will not benefit directly from my participation in this study. However this research may provide data useful to clinical teachers in their practice.

CONFIDENTIALITY AND CONSERVATION OF DATA

I have received assurance from the researchers that the information gathered from me will be used solely for the purposes of this research. Code lists, tapes and paper files and transcripts and back-up computer files will be kept in a locked container in the investigator's office. Electronic transcripts and computer files will be password protected in the investigator's computer. The only people who will have access to the data are the transcriber of the data, the thesis committee members (Dr. Betty Cragg, Dr. Barbara Foulds and Dr. Jo Logan) and the principal investigator (Nancy Lada). The members of the thesis committee may listen to tapes or read transcriptions to assist the researcher during the data analysis. Tapes, transcripts, paper and computer files will be kept until five years after date of publication and then destroyed.

ANONYMITY

No one at the School of Nursing will know if I have participated. My choice to participate or not will not have any effect on my employment status.

I may be quoted, provided I give permission hereinbelow (option below), If I consent to be quoted, all personally identifying information shall be removed or altered and the contents of the quote shall not be revelatory of my identity.

COMPENSATION

I will be reimbursed for my out-of-pocket parking or bus fare expenses.

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If I have any questions with regards to the ethical conduct of this study, I may contact the **Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 159, (613) 562-5841** or ethics@uottawa.ca

There are two copies of the consent form, one of which I may keep.

If I have any questions about the conduct of the research project, I may contact the researcher Nancy Lada at nancy.lada@rogers.com or (613) 836-2391 or her supervisor Dr. Betty Cragg at bcragg@uottawa.ca or (613) 562-5800 ext 8348.

I, _____, agree to participate in this research study.

____ Yes, in addition to the initial interview, I consent to be contacted for a follow up interview (*please mark the blank space if you agree*)

Please choose one of the following options:

____ I agree to be quoted but all personally identifying information shall be removed or altered and contents of the quote shall not be revelatory of my identity.

____ I do not wish to be quoted at all.

Date:

Research subject's signature

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📠 613 562-5443

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Appendix L

Telephone Interview Consent



Université d'Ottawa
Faculté des sciences
de la santé

École des sciences
infirmières

University of Ottawa
Faculty of Health
Sciences

School of Nursing

Telephone Interview Consent

Study Title - Use of Health Care Research in Nursing Clinical Teaching Practice

Principle investigator- Nancy Lada, RN, BScN
Master of Science in Nursing student
University of Ottawa
(613) 836-2391

Thesis supervisor - Dr. Betty Cragg, RN, EdD
Professor
School of Nursing
University of Ottawa,
(613) 562-5800 ext 8348
Fax (613) 562-5443

INVITATION TO PARTICIPATE

I am invited to participate in the abovementioned research study conducted by Ms Nancy Lada, Master of Science in Nursing Student, who is being supervised by Dr. Betty Cragg, both of the School of Nursing, Faculty of Health Sciences, Department of Graduate Studies.

PURPOSE OF THE STUDY

I understand that the purpose of this study is to explore the use of health care research in nursing clinical teaching practice. From this study, the researcher wishes to explore use of health care research by clinical teachers, their concerns about using health care research in their teaching practice, the factors that impede or facilitate use of health care research in teaching, strategies used to promote use of health care research by students and concerns related to use of health care research in clinical teaching practice.

ELIGIBILITY

To be able to participate in this study, I must have been employed as a clinical teacher in the collaborative nursing program at University of Ottawa or Algonquin College Woodroffe or Pembroke campus within the last 12 months and be able to understand, read and speak English.

PARTICIPATION

I understand that I will be asked to participate in a tape – recorded interview over the telephone lasting 60-90 minutes and conducted by Nancy Lada. The interview will be arranged at a time convenient to me. My participation will consist essentially of being interviewed for approximately one hour to one and one half hours. The audio tape can be turned off at anytime I wish and I am free not to answer any question. I

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☎ 613 562-5443

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may withdraw at anytime without affecting my employment. I understand that I have the option to be contacted by the researcher to participate in a second interview to elaborate or confirm analysis. The second interview will be approximately 30- 45 minutes in length.

RISKS

I may be inconvenienced by time taken from other responsibilities or by having my telephone used for the interview.

BENEFITS

I will not benefit directly from my participation in this study. However this research may provide data useful to clinical teachers in their practice.

CONFIDENTIALITY AND CONSERVATION OF DATA

I have received assurance from the researchers that the information gathered from me will be used solely for the purposes of this research. Code lists, tapes, paper files, transcripts and back up computer files will be kept in a locked container in the investigator's office. Electronic transcripts and computer files will be password protected in the investigator's computer. The only people who will have access to the data are the transcriber of the data, the thesis committee members (Dr. Betty Cragg, Dr. Barbara Foulds and Dr. Jo Logan) and the principal investigator (Nancy Lada). The members of the thesis committee may listen to tapes or read transcriptions to assist the researcher during the data analysis. Tapes, transcripts, paper and computer files will be kept until five years after date of publication and then destroyed.

ANONYMITY

No one at the School of Nursing will know if I have participated. My choice to participate or not will not have any effect on my employment status. I may be quoted, provided I give permission herein below (option below). If I consent to be quoted, all personally identifying information shall be removed or altered and the contents of the quote shall not be revelatory of my identity.

COMPENSATION

The investigator will assume long distance telephone fees by placing the interview telephone call to me.

If I have any questions with regards to the ethical conduct of the study, I may contact the **Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 159, (613) 562-5841 or ethics@uottawa.ca**

I may keep a copy of the consent form.

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📠 613 562-5443

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University of Ottawa
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Sciences

School of Nursing

If I have any questions about the conduct of the research project I may contact the researcher Nancy Lada at nancy.lada@rogers.com or (613) 836-2391 or her supervisor Dr. Betty Cragg at bcragg@uottawa.ca, or (613) 562-5800 ext 8348.

If you agree to this consent for the study please fill out the information below, cut and paste into an email and return to nancy.lada@rogers.com

_____ **Yes, I consent to participate in the study: Use of Health Care Research in Nursing Clinical Teaching Practice** (*Please highlight "yes" or mark the blank space if you agree*)

_____ **Yes, I consent to be contacted for a follow-up interview** (*Please highlight "yes" or mark the blank space if you agree*)

Please choose one of the following options:

_____ I agree to be quoted but all personally identifying information shall be removed or altered and contents of the quote shall not be revelatory of my identity.

_____ I do not wish to be quoted at all.

Consent given by email Yes

Date: _____ **Name:** _____

Institution: _____

E-mail address: _____ **Telephone Number** _____

Please send this consent form to nancy.lada@rogers.com as an attachment, or cut and paste into an e-mail message. Retain a copy for your files.

Appendix M

Follow- up Interview Email

Follow up Recruitment Email

From: Nancy Lada
To:
Sent: Friday, October 14, 2005 10:06 AM
Subject: follow up interview for research study

Hello _____

Earlier this year, you were interviewed as part of my thesis research study "Use of Health Care Research in Nursing Clinical Teaching Practice" At that time, you consented to be contacted for a second interview to elaborate or confirm analysis.

I would like to meet with you to present the findings and ask for your feedback. Your feedback will help to ensure that the conclusions I have drawn from the interviews reflect your experience. I would like to arrange to meet with you for approximately 30 to 45 minutes between October 20th and November 3rd. The interview will be scheduled at a time and location convenient to you. An in- person interview is preferable but a telephone interview is possible.

Please contact me by email as soon as possible before October 20th to arrange the follow- up interview or if you have any questions or concerns. If you prefer, you may contact me by telephone between 8:30 and 14:30 Monday to Friday at (613) 836-2391. Your participation in this second interview is optional. The interview will be audio-taped and the conditions of the original consent apply (including confidentiality). For your convenience, I have attached a copy of the original consent and letter of introduction.

Thank you,
Nancy Lada

Nancy Lada
MScN student
University of Ottawa
613 836-2391
nancy.lada@rogers.com

Appendix N

Follow-up Interview Guide

Nov 5,2005

Follow-up interview guide

Interview date and time _____

Location _____

Participant identifier _____

Thank you for agreeing to participate. Collected interviews form 15 clinical teachers in the collaborative program at Algonquin College and University of Ottawa.

Interviews were transcribed and analysed. During the analysis the theme of making the connections developed. The clinical instructors described many connections they made related to using HCR in their teaching

Present model

show outline, figure, paper pieces

What are your first impressions of the model?

Does this represent your experience?

If so , why?

I f not, why not?

Can you see your experience?

Do you see it as a reasonable explanation of what is going on even if not every detail fits their experience?

If yes why- if not why not?

**In the interviews the three main participant suggestions I found were
Providing staff development opportunities, improving lines of communication and**

I would like to ask you about things that you would suggest would strengthen the connections? What would you suggest would make it easier for you to use HCR with your students

Do you see the figure in 2 or 3 dimensions? (added after 1st interview).

In the interviews sometimes word research used in different ways

Use of research “read the research” vs getting them to research (“ look things up”)

**Use of the word “ Theory” as in “something they learn in theory” meaning
classroom learning or theoretical knowledge**

Post interview comments:

Appendix O

Model figure used in Follow- up Interview

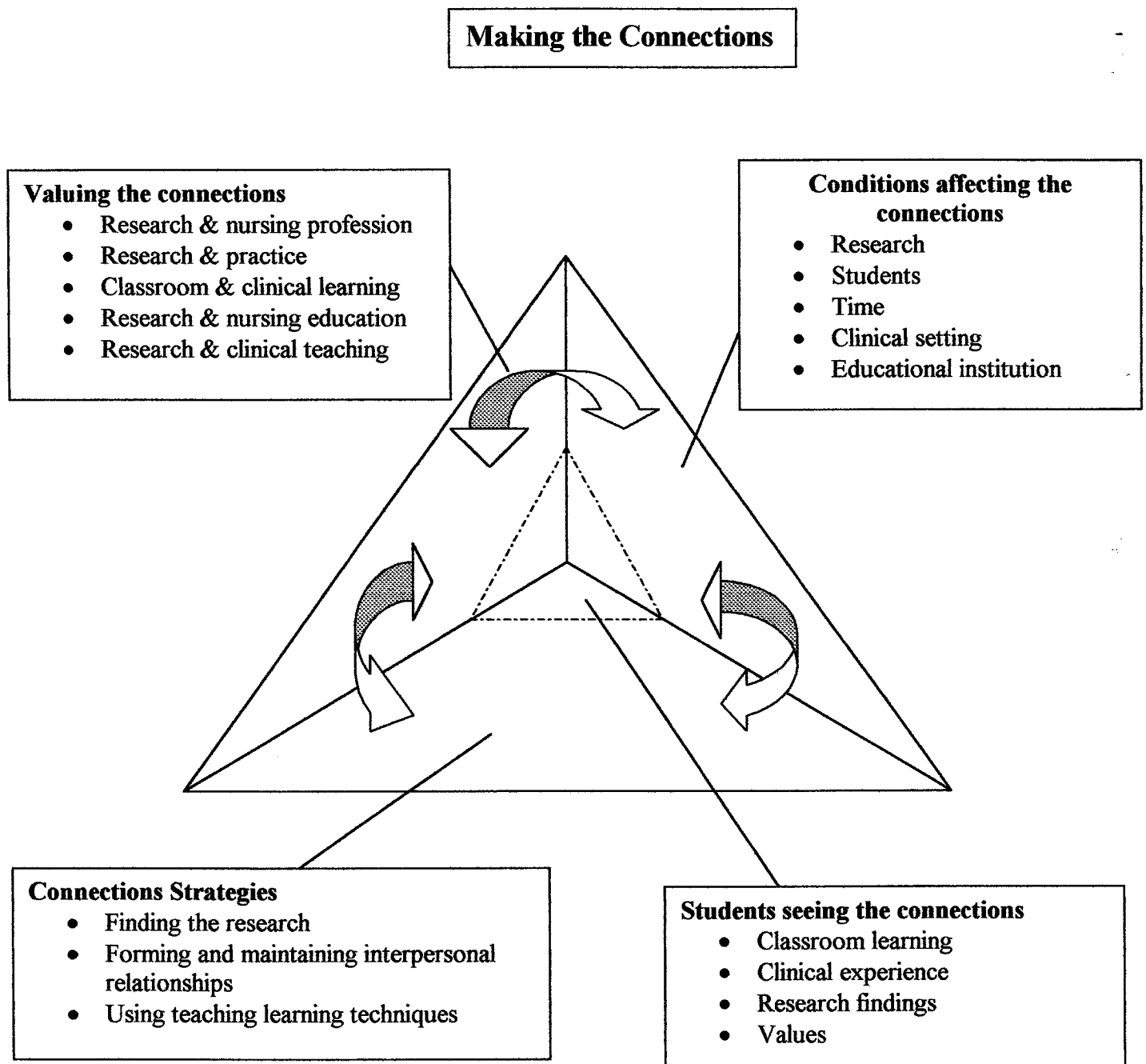


Figure 1 Proposed Model- Use Of Health Care Research in Nursing Clinical Teaching Practice

Appendix P

Model Outline used in Follow- up Interview

Use of Health Care Research in Nursing Clinical Teaching Practice

Central theme- **Making the connections**

Categories

1) Valuing the connections

- research and nursing profession
- research and practice
- classroom learning and clinical learning
- research and nursing education
- research and clinical teaching

2) Conditions affecting the connections

- research
availability, accessibility, appropriateness
- student
year level, experience level, interest level
- time as resource
amount of time in the clinical setting, time available to plan and prepare for teaching
- clinical setting
availability of research sources, staff use of research in practice, supports for research use (policies, educator, librarian)
- educational institution
supports for research use (level of integration with course, staff development, patterns of communication with faculty and other clinical teachers)

3) Strategies for connecting

- Finding the research
Locating research, sources used
- Forming and maintaining interpersonal relationships
Nursing staff
Nursing faculty
Other clinical teachers
- Using teaching learning techniques
Knowledge brokering
Role modelling
Stimulating critical thinking
Using course component

- 4) Students seeing the connections- *“putting the pieces together”*
- Classroom learning (theoretical knowledge),
 - Clinical experience
 - Research findings
 - Values

Strengthening the connections

- Improve line of communication
- Providing staff development opportunities
- Integrate research use throughout the curriculum

Appendix Q

Model description used in Follow- up Interview

Description of Conceptual Model (figure 1)

The study purpose is to explore the use of health care research in nursing clinical teaching practice. The fifteen clinical teachers, who volunteered and were interviewed for this study, contributed a wealth of data. During analysis of the data, the theme *making connections* became evident. Connections were on cognitive, attitudinal and environmental levels and reflected interactions on interpersonal, intra personal and extra personal levels. These connections or complex relationships and interactions are represented in the proposed conceptual model (figure 1). The connections the teacher makes are represented by the larger triangle made up of three sub- triangles. Those connections are mirrored in the connections the students make represented by the innermost triangle.

The largest triangle represents the connections clinical teachers described in interviews. The three smaller triangles, represent the values, conditions and actions described by the clinical teachers. A central triangle is outlined with intermittent dashes. This triangle is formed by portions of the other triangles and represents the *student seeing the connections* or “putting the pieces together”. Each of the sub-triangles are juxtaposed and as depicted are of equal size. The interrelationships of the sub-triangles are indicated by double headed arrows.

Valuing the connections, the first sub- triangle, represents the participants’ valuing the relationships between research and the nursing profession, practice, education and clinical teaching. Many participants also expressed valuing the relationship between classroom learning with clinical learning.. The study sample described strongly valuing the research relationships and identified the relationships consistently.

Conditions affecting the connections, the second sub- triangle, represents the factors that may strengthen or weaken the clinical teachers use of HCR in their teaching. Many of the clinical teachers described factors related to the research and the student as well as factors within the clinical setting and the educational institution. The research characteristics including availability and accessibility were conditions which affected the use of the research by clinical teachers. Also, the appropriateness of the research to the student and clinical setting affected the participant’s use of research in their teaching. Teachers considered student characteristics; year level, interest level and experience when they incorporated research into their teaching. The resource of time was also a consistent concern affecting how CTs used HCR in their teaching. Participants noted time available to plan and prepare and time available to teach in the clinical setting as affecting the use of health care research in their teaching. Lack of available time for finding, analyzing and

evaluating research suitable for use in their clinical teaching was described as an issue by participants .

Conditions in the clinical setting affected the use of health care research by clinical teachers. Availability of sources of research on the clinical unit and use of research by staff in their practice contributed to the clinical teachers use of research in teaching. Similarly, presence of research based policies and staff educators supportive of research use in practice affected the use of research by clinical teachers. The educational institution supported research use by the level of integration in the course components. Some clinical teachers benefited from learning opportunities provided by the educational institution. Resources provided by the institution include support from other clinical teachers, faculty and librarians. All of the conditions are likely to be changing and interacting among each other and in combination with the CT values and strategies for using HCR in their teaching represented by the other sub-triangles

Connection strategies, the third sub- triangle, represents actions or types of strategies described by the clinical teachers to bring HCR to their teaching. The first connection strategy was finding the research. The clinical teachers described how they located research and what sources of research they used. The second connection strategy was forming and maintaining interpersonal connections. The interpersonal connections or relationships described by the clinical teachers were with nursing staff, nursing faculty and other clinical teachers. The clinical teachers mentioned these connections first in a general sense and then more specifically relative to research use. Forming these interpersonal connections facilitated the teacher's use of HCR in their teaching. The third connection strategy the clinical teachers described was using teaching learning techniques with the students. The teaching learning strategies described by the clinical teachers included knowledge brokering, role modeling, using course components and stimulating critical thinking.

Students seeing the connections-“putting the pieces together” the central triangle, represents the point, described by the clinical teachers, where the students realize the connections between classroom learning (theoretical knowledge or “theory”), clinical experience and research findings. The students also value these connections. Participants often described students seeing the classroom learning, clinical experience and research findings as separate and distinct. Participants described cases where the students were able to “put the pieces together”, seeing connections between the parts and in some cases seeing the parts as integrated. A participant used the image of “putting the pieces together”. Another participant described how she would spend “time weaving things together so they [the students] get the whole picture”. Other participants mentioned “joining”, “pulling” “or “bringing” the parts together. *Students seeing the connection* is facilitated by the clinical teacher and is influenced by the three sub-triangles- values, conditions and strategies.

Relationships between the triangles

Each of the sub-triangles is linked to another by a double-headed arrow. Each arrow represents an inter-relationship. The arrows indicate the dynamic motion and flow between the sub-triangles of values, conditions and strategies.

Relationship between values and conditions

The arrow linking the values triangle and the conditions triangle represents the interrelationship between the two. If the educational institution or the clinical setting values research use in practice it may support the teacher in their teaching. A study participant teaching in a clinical environment valuing research in practice had her values reinforced or strengthened. The teacher described a situation where the students had learned a skill in lab (sponge bathing a newborn). In the clinical setting the manager provided a research article supporting the agency practice of tub bathing newborns for their initial bath. In this case the clinical teacher integrated the research-based practice into the students learning and felt supported in her use of research in teaching.

Similarly, the more the clinical teachers felt the educational institution supported research use in teaching by integrating research use into the course components (objectives, assignments and evaluations) the more it may effect the teachers valuing of research. Although all of the participants indicated they valued the research in nursing and nursing education, the figure represents the possibility that conditions supporting research use could strengthen those values.

Furthermore, characteristics of the student may support the clinical teachers use of research in their teaching. For example, the clinical teachers described having different expectations of the students based on their year level in the program. Although the teachers valued using HCR in their teaching they recognized other priorities for learning based on the year level of the student. Clinical teachers reported that a student in first year has many learning objectives which may have more importance at that time for example basic care and communication skills. In contrast, clinical teachers expected fourth year students to be able to integrate research with their nursing practice.

Relationship between values and strategies

All of the participants valued research. Valuing the relationship between research and the nursing profession and nursing education contributed to the participant's development and use of strategies. The participants identified their valuing research use

strengthened their strategies to incorporate health care research into their teaching. Also, the clinical teachers discussed priorities in their teaching aside from using research. For example, they mentioned emphasizing communication skills and professional behaviour.

Relationship between conditions and strategies

Forming and maintaining relationships between the staff and the clinical teacher was described by some of the clinical teachers as essential to establish an environment firstly for a positive clinical experience and secondly for incorporating use of research in their clinical teaching. Clinical teachers establishing credibility with staff created more positive conditions for use of health care research.

The conditions existing influence the strategies. For example, in cases when the participant was able to find research articles, appropriate to the students and the clinical setting, she would use the research with the students. Participants were more challenged in using health care research in their teaching if relevant research was difficult to find. Furthermore, teachers reported that when there was good fit between the research and the clinical setting it was easier for the students to bring “the pieces together”.

If the use of research was integrated into the course components by the educational institution, many participants reported it was easier to use research in their teaching. In cases where it wasn't seen as integrated into the course, clinical instructors found it challenging to use health care research in their teaching.

The conceptual model described above and shown in Figure 1 attempts to represent complex interrelationships clinical teachers described during their interviews.

Strengthening the connections is not included in the figure of the model. Often, the clinical teachers described activities to improve the use of HCR in their teaching and the connections made. Improving lines of communication, providing staff development activities and integrating research use throughout the curriculum would support each sub-triangle_ values, conditions and strategies and the central triangle_ students making the connections.