THE EXPERIENCES OF UNDERGRADUATE NURSING STUDENTS ENROLLED IN A TEAM TEACHING CURRICULUM

by

Jonathan Mislang

B.S.N., The University of British Columbia, 2004

A THESIS SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN NURSING

in

The Faculty of Graduate Studies

(Nursing)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

October 2011

Abstract

Contemporary nursing education has seen a shift towards student-centred teaching and learning strategies. Team teaching is a student-centred strategy that involves the collaboration of multiple teachers to plan, deliver, and evaluate a course. Team teaching has been used in disciplines outside of nursing education, but there is little literature to support its use within the classroom in undergraduate nursing education. The purpose of this qualitative descriptive study is to examine the experiences of undergraduate nursing students enrolled in a newly revised curriculum at the University of British Columbia School of Nursing (UBC SON) that has adopted team teaching as its main pedagogical teaching and learning strategy. The aim of this research is to provide an evidence-based evaluation of the team teaching strategy with the intent of suggesting ways to improve its delivery. Constructivism and adult learning theory were used to guide this study. Non-randomized convenience sampling produced a study population of 49 third-term undergraduate nursing students enrolled in the UBC Bachelor of Science in Nursing (BSN) program starting in September 2009. Students completed a survey consisting of six open-ended questions designed to describe their experiences with team teaching. Content analysis methodology was used to analyze the data. Findings suggested that students supported the use of team teaching and viewed it as a positive influence on their learning experience. Four positive themes from team teaching emerged from the research: challenging student learning, increasing teacher credibility, teams acting as nursing role models, and promoting student learning. The implications of this research focused primarily on nursing education. Seven recommendations on how team teaching delivery can be improved within the UBC SON curriculum are suggested.

Preface

This research was completed with approval from the UBC's (University of British Columbia) Behavioural Research Ethics Board for Human Subjects

Researcher number: 42801

Additionally, funding for this research was provided by the University of British Columbia Teaching and Learning Fund.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

BSN: bachelors of science in nursing

CINAHL: cumulative index of nursing and allied health literature

MeSh: medical subject headings

MSN: masters of science in nursing

RN: registered nurse

RMN: registered mental nurse

UBC SON: University of British Columbia School of Nursing

Acknowledgements

I want to express a sincere thank you to a number of individuals for their work and commitment to make this research project possible. A special and heartfelt thank you to my thesis committee who have provided exceptional support and exhibited unwavering patience throughout this process. Your contributions have added depth to this research project and have enhanced its content - your experience and expertise helped me grow as a learner and facilitated the successful completion of my thesis. To Dr. Maura Macphee, my thesis supervisor, I express gratitude for your mentorship; your scholarly feedback, attention to detail, and professionalism has enlightened my view of research. You have taught me a great deal about how to be nurse leader and you have been an admirable role model throughout my graduate program. To Dr. J. Craig Phillips, I want to convey gratitude for your knowledge, encouragement, insight, and feedback; your comments added new dimensions to my thesis and I am grateful that I was able to draw on your experience as an accomplished researcher. To Mrs. Marion Clauson, I send appreciation for what you have taught me about nursing education; your contributions to this research and your teaching throughout my Masters program have allowed me to embrace the art of education which has helped me tremendously as a nurse educator.

Finally, I would like to thank my friends, family, colleagues, classmates, and loved ones. Your support, understanding, interest, and words of inspiration motivated me throughout this process. Without your help and backing, completing this research project would not have been possible.

Chapter 1: Background, Research Problem, Purpose of the Study

This chapter presents the study's background, research problem, purpose, and research questions. The chapter concludes with an outline of the thesis.

1.1 Background

Team teaching involves multiple teachers co-teaching a course. It is not a new concept in education, having been used in disciplines other than nursing for many years. Notably, business education has used a team teaching approach throughout undergraduate education. Team teaching assumes that the collective efforts of two or more teachers will exceed that of any one teacher. Advantages of this method include increased student learning from multiple faculty perspectives, deepened understanding for teachers of their delivery style, increased creativity with teaching methods, enhanced student support outside the classroom, and promotion of discussion within class (Yellowly & Farmer, 2006).

Traditional undergraduate nursing curriculum is tailored after the Tylerian model, which draws from behaviourist theory (Tyler, 1949). This model is considered teacher-centred, in that teachers are directly responsible for student learning. The Tylerian model contends that learning is a linear systematic process that involves teachers assessing learning needs, using objective formulation, delivering content, and evaluating student learning (Lewis, Rogers, & Naef, 2006). The behaviourist perspective assumes that it is possible to accurately predict the outcomes of instruction (Bevis & Watson, 2000). Teachers are seen as experts, while learners are passive, empty vessels waiting to be filled with information. Traditional nurse educators have adopted

and embraced behaviourist learning, since many of its assumptions, beliefs, and values have similarities to the biomedical model's Cartesian worldview (Lewis et al.).

There are several limitations to Tylerian learning. First, contemporary healthcare is so complex that one individual cannot have expertise in all of its aspects. Nurses are autonomous professionals and viewed as healthcare leaders. As leaders, nurses are required to make patient care decisions from knowledge about the different influences that affect health. The vast number of health-related influences makes contemporary healthcare difficult to understand. Influences can include social determinants of health, individual morality and ethics, professional practice standards, hospital policies, and administrative concerns. Second, in Tylerian learning the teacher determines what perspectives and ideas are most important. The problem with students only hearing one voice is that it offers only one possible explanation. Students assume that the explanation is truth, and learning is based on what the teacher's perspective is. However, constructivist theory informs us that multiple realities exist (Connolly & Begg, 2006). Hearing only one perspective prevents students from understanding situations from the points of view given by multiple individuals.

1.2 Team teaching pedagogy

Given the limitations identified in behaviourist learning, the contemporary nursing curriculum has shifted towards a humanistic theory of teaching and learning (Lewis, Rogers, & Naef, 2006). Nurse educators have abandoned the empty vessel idea and have adopted a view of learning that is based on partnership. Humanistic learning emphasizes collaboration and is seen as student-centred. Here, students are not seen as passive individuals but participants in their own learning. Contrasting the behaviourist model, humanistic learning focuses on the learning

process. This process encourages learning by stressing the importance of the interactions between students and teachers (Bevis & Watson, 2000). It is through student-teacher interactions that reflection, critical thinking, reconsideration, and decision-making merge into deep understanding. With this in mind, humanistic learning is facilitated in an environment that encourages openness and respect for individual differences.

With the nursing curriculum shifting to one that emphasizes humanistic learning theory, nurse educators are faced with the task of enacting a teaching strategy that corresponds to a curriculum that highlights collaboration and is student-centred. At the same time, this teaching strategy should avoid the limitations seen in behaviourist learning theory. Team teaching fulfills these criteria. Contemporary nursing curricula have seen a shift towards more student-centred strategies, and adopting a team teaching approach allows teachers to stay current with nursing education trends (Larue, 2008).

Team teaching involves multiple teachers involved in the planning and implementation of teaching and the evaluation of student learning. The scholarly literature on teaching supports the idea that team teaching provides student-centred learning and that educators are often encouraged by universities to adopt this educational approach (Benjamin, 2000). Student-centred learning is defined as a teaching strategy that encourages students to take an active role with their learning (DeYoung, 2009). Students in team teaching take an active role in constructing knowledge from the perceptions and realities of individuals (Goudreau, Pepin, Dubois, Boyer, Larue, & Legault, 2009). The learner learns by constructing new meanings or realities from new information and comparing them to the perceptions of others.

In addition to being student-centred, team teaching also encourages collaboration. Collaboration and supportive environments are key elements within any student-centred methodology (Iwasiw, Goldenberg, & Andrusyszyn, 2009). In team teaching, collaboration is seen on two fronts, 1) collaboration between teachers and 2) collaboration between teachers and students. Collaboration between teachers offers several benefits. Pragmatically, team teaching allows teachers to teach large numbers of students. Many schools of nursing face the contextual challenge of faculty members being asked to manage increased university enrollment and larger class sizes (Benjamin, 2000). Team teaching provides a creative strategy for educators to deliver information to large numbers of students. Professionally, the collaboration between teachers displays the importance of teamwork that is required for nurses. Teamwork is essential within nursing practice. Interdisciplinary teamwork has been shown to create more positive work environments and to improve the safety and quality of patient care (Zwarenstein & Reeves, 2006). Nursing students value teamwork because they realize that the ability to work and problem-solve in groups is expected of all practicing nurses (Feingold, Cobb, Givens, Arnold, Joslin, & Keller, 2008). Team teaching models the benefits of teamwork within the classroom setting. Students can take what they learn about teamwork and apply it to the practice setting.

The collaboration between teachers and students happens on the cognitive level. The discussion that happens with team teachers is a large influence on student learning. The dialogue between team teachers provides an opportunity for students to learn through the collective experiences of others (Game & Metcalfe, 2009). When students see teachers engaged in discussion, they get a deeper sense of understanding when seeing how teachers consider different viewpoints before forming conclusions. Subsequent learning occurs when individuals analyze the different viewpoints and integrate them into new knowledge.

Other benefits from team teaching strategy also can affect student learning. In contrast to behaviourist learning theory, team teaching uses the collective expertise of multiple teachers instead of one teacher. Teachers bring different gifts and handicaps to the table (Brookfield, 2006). Team teachers act in a complementary way, with the underlying assumption that the collective knowledge of a team supersedes that of any one individual. Students benefit by learning from the experience and knowledge of different professionals as they move through the content of a course.

1.3 Research problem

Change is slow moving and often met with resistance. Decisions to use alternative teaching strategies within a nursing curriculum are made by university administrators and nursing faculty. Nurse educators teaching in a humanistic student-centred curriculum face the daunting task of implementing team teaching as a new and innovative strategy to teaching nurses in classroom education. Team teaching deviates greatly from the one teacher behaviourist model of traditional classroom instruction. It is because of this unfamiliarity that students may not see the benefits of team teaching.

Revisions or changes in teaching practices should be informed by a comprehensive review of the literature and grounded in current research (Forbes & Hickey, 2009). Although some elements of team teaching have been explored in the nursing literature, it mainly has been reported in the form of case studies and not examined using rigourous research methodology. Additionally, the current team teaching literature has little focus on the learning experience of undergraduate nursing students within classroom settings.

Nonetheless, one nursing program has chosen to implement an innovative and collaborative approach to teaching and learning. The University of British Columbia's School of Nursing (UBC SON) has adopted a team teaching model as its main pedagogical strategy within its newly revised undergraduate curriculum. The team teaching strategy differs from the one teacher system that was seen in the UBC SON's previous curriculum. To this date, there has been little formal evaluation of team teaching strategy from the students' perspective. Cowman (1996) states that in university education the quality of teaching is best assessed from the learner's point of view. Therefore, student feedback will add an important perspective to our understanding of the impact that team teaching has on student learning in the newly revised nursing curriculum. A research study that focuses on the learning experiences of students enrolled in a curriculum adopting this type of teaching method is crucial in providing an evidence-based evaluation of team teaching.

1.4 Purpose

The lack of literature is problematic for the newly revised UBC SON undergraduate curriculum, which uses a team teaching approach as a key pedagogical strategy. Therefore, the purpose of this research study is to explore the learning experience of undergraduate nursing students currently enrolled in a team teaching curriculum. This was accomplished through survey data collected from students enrolled in a team-taught curriculum in the undergraduate program at the UBC SON. The survey data was analyzed using qualitative content analysis methodology. Results from this study may prove to be a valuable contribution to nursing education research and to curricular enhancement within the UBC SON undergraduate program.

1.5 Research questions

The study's research questions are as follows:

1) Do students support team teaching as the main pedagogical teaching strategy within the UBC SON undergraduate curriculum?
2) What are the learning experiences of undergraduate nursing students currently enrolled in a team teaching curriculum?
3) What strategies could enhance the delivery of team teaching in the newly revised UBC SON undergraduate curriculum?

1.6 Definition of team teaching

Several models of team teaching have been identified in the literature (Robinson & Schaible, 1995). These models follow one of two basic approaches: 1) two or more teachers teach the same class at the same time or 2) instructors work together but do not necessarily teach the same groups of students at the same time. Different teachers at the UBC SON have chosen to implement team teaching strategy in various applications. This research does not examine the different models of team teaching, but instead looks at the strategy as a whole. For the purposes of this research, team teaching is defined as "a group of two or more teachers working together to plan, conduct, and evaluate the learning activities for the same group of learners" (Wang, 2010, p. 47).

1.7 Thesis outline

This chapter has presented an introduction to team teaching, described its background, explained the study's research problem and purpose, and outlined the thesis. This thesis is divided into four remaining chapters. Chapter two introduces constructivism as the guiding framework for understanding team teaching and presents a literature review on team teaching. Chapter three presents the research methodology, sample, survey, data collection procedures, and analysis of the data using content analysis. Chapter four presents the results of the research. Chapter five discusses the findings and implications in the four domains of nursing: education, research, clinical practice, and administration.

Chapter 2: Theoretical Framework, Literature Review: Team Teaching, Critique of Team Teaching Literature

Chapter 2 is presented in two sections. The first section presents the theoretical framework of constructivism. It establishes a working definition of constructivism as a learning theory and discusses the relevance of constructivism to nursing education and team teaching. The second section explores the team teaching literature and constructs a review matrix as a tool to critically analyze the published literature. The second section includes the following: details on how the current literature search was completed; the criteria used to include studies in the matrix process; descriptions of the studies; criteria for scientific rigour; a review and critique of the team teaching literature; summary and implications; gaps in the literature; and a completed review matrix (Appendix E) that highlights categories within the studies used to formulate the critical analysis of the articles.

2.1 Theoretical framework: constructivism

Constructivism as a learning theory fits within a larger constructivist epistemology, or way of knowing, and contends that individuals construct multiple realities, perspectives, and truths (Richardson, 2003). Constructivism's methodology is comparative interpretation, which assumes that learning occurs when individuals analyze situations using formed meaning and values gained from past experiences. The main premise behind constructivism is that learning is experiential and that one must experience the world to truly understand it.

The ultimate goal of constructivism is metacognition, or the higher order process of learning and reflecting on the critical thinking and problem solving that went into the acquisition of knowledge (Connolly & Begg, 2006). Through the achievement of metacognition, learners

become aware of how they came to know what they know. If students are able to understand the process of learning, future learning situations may become more seamless and effective.

Constructivist learning theory is based on two early perspectives that emphasize different aspects of learning. I will begin with an overview of the two prominent early theorists, Piaget and Vygotsky, and I will then discuss contemporary work that has informed what we know about constructivism. Piaget's (1972) theory on cognitive constructivism recognizes two distinct processes of cognitive learning, termed assimilation and accommodation. Both rely on how an individual's mental schema affects understanding. Assimilation refers to learning that involves fitting new knowledge into existing schemas. This happens when the individual uses pre-existing schemas to make sense of new information. Accommodation, unlike assimilation, is a process in which old schemas are adapted or changed in the presence of new information in order for the individual to comprehend the new information. The processes of assimilation and accommodation focus on the intellectual mechanisms involved when the learner attempts to establish meaning from ambiguous information. Both processes place strong emphasis on the reasoning ability of the individual (Powell & Kalina, 2009). Learning is therefore internalized, and knowledge is acquired as a result of the learner's own ability to analyze critically the importance and relevance of new information. Cognitive constructivism assumes that learning is both an active and a constructive process—active because learners compare new information to what they already know, and constructive because old information is constantly modified or changed.

The other perspective, social constructivism, views learning as complementary to cooperation. Rooted in sociological thinking, Vygotsky (1978) hypothesized that learning is socially constructed and influenced by the perspectives of others. Here, culture and social

interaction play an integral part in learning. Vygotsky used the cultural component of language as an approach to accelerate thinking and understanding. Language plays two critical roles in cognitive development: it is how people communicate with one another, and it is a powerful tool in intellectual development. Vygotsky hypothesized that language correlates to consciousness. Individuals learn when ideas in the form of language are exchanged and are then internalized as knowledge and deep understanding, in what Vygotsky called inner speech. In this regard, cognition and consciousness are products of socialization and social behaviour, and the construction of knowledge is formulated through cooperative learning.

Two main concepts emerged from Vygotsky's (1978) work on social constructivist theory. Vygotsky's concept of the more knowledgeable other refers to someone with better understanding and mastery of a subject than the learner. This person acts as a resource and a teacher and serves as a means for the learner to increase their knowledge base. The second concept, of the zone of proximal development, is integrally related to and complementary to the first concept. The zone of proximal development describes a learning stage in which the learner is initially unable to acquire knowledge independently but becomes capable after receiving help from a skilled partner. The zone of proximal development is an important principle in social constructivist learning because it identifies what an individual can achieve on their own and what they need help with. Vygotsky stated that the zone of proximal development is where the most guidance, encouragement, and teaching are needed by a learner.

Cognitive constructivism and social constructivism are not mutually exclusive categories but instead draw attention to the complexities of human learning. More recently, Illeris (2003) argued that all learning encompasses multiple dimensions involving the cognitive dimension of knowledge and skills and the social dimension of communication and cooperation. Illeris stated

that a learning perspective that fails to acknowledge either of the dimensions does not provide a comprehensive view of the learning process itself.

Contemporary constructivism maintains a comprehensive view of teaching and learning and adds an emphasis on the student's motivation to learn and the role of the teacher in informing current pedagogy. Drawing on cognitive and social constructivism, Duckworth (2006) developed a new approach to teaching and learning termed critical exploration. Critical exploration stresses that students need to be interested and engaged in the subject matter and that learning occurs when new ideas are connected with past knowledge. The role of the teacher plays an integral part in engaging and maintaining student interest. Teachers create environments that encourage students to explore what they know by challenging them to consider their own ideas from new perspectives. Deep understanding occurs when students struggle through the application of new perspectives to past ideas, which ultimately results in the construction of new knowledge. Contemporary constructivism illustrates that learning involves the cognitive engagement of the individual to learn as well as the social learning environment shaped by the teacher.

For the purposes of this research, the working definition of constructivism includes the comprehensive view on learning adopted by Illeris (2003). Constructivism is characterized as a learning theory that acknowledges learning as an active process in which individuals construct new knowledge from their own past knowledge or experiences and socially construct knowledge from the input of others. In teaching and learning research there is a connection between constructivism and adult learning theory.

2.2 Constructivism and adult learning theory

Constructivism and adult learning theory are closely related. Deriving from the work of Knowles (1984), adult learning theory adheres to four principles of teaching and learning that are particular to adult learners. First, adult learners are self-directed and autonomous. This includes being responsible for identifying and diagnosing their own learning objectives and using resources that will help them achieve these objectives. Thus the impetus for learning is active inquiry, which encourages learner independence. Second, adult learners have substantial life experience. In adult learning, as in constructivism, past knowledge and experience are crucial to the learner's ability to develop understanding. An adult learner constructs knowledge through interpersonal judgments and personal interpretations of new situations, supported by how the learner has dealt with similar situations in the past (Peters, 2000). Third, adult learners are ready to learn. Adult learners usually return to formal education voluntarily and are driven to learn by their own internal motivation (Huang, 2002). Fourth, adult learners are goal and relevancy motivated. They need to see that there is a reason behind their learning along with practical applications that will be beneficial to them in the future. Borrowing theoretical ideas from both constructivism and adult learning theory provides a framework consistent with contemporary nursing education.

2.3 Constructivism and contemporary nursing education

Constructivism has been used as a theoretical framework for education in disciplines outside of nursing. Its use has been documented in secondary school education (Singleton, 2009), information technology education (Connolly & Begg, 2006), interprofessional health education (Mann, McFetridge-Durdle, Martin-Misener, Clovis, Rowe, Beanlands, & Sarria, 2009), and medical education (Cohen & Dennick, 2009). Contemporary nursing education encourages students to become active participants in the learning process (Peters, 2000). Students are engaged in the learning process and are viewed as individuals with rich and diverse backgrounds that contribute greatly to their construction of knowledge. Learning in this way is defined as student-centred.

Recent undergraduate nursing curricula have combined student-centred principles with constructivism as their main teaching and learning strategy. The most notable is problem-based learning, where nursing students work collaboratively in small groups and use joint intellectual efforts to work through case scenario problems (Larue, 2008). Consistent with constructivist theory, learners construct new knowledge by reflecting on the applicability of their own knowledge and the knowledge of others in working through case scenarios. Hunter and Krantz (2010) indicated that integrating constructivism with student-centred learning principles increases the problem-solving abilities and critical thinking skills of nursing students. The professional demands of nursing, where multiple viewpoints from both interprofessional staff and patients need to be considered prior to any decision making, underlines the importance of producing graduate nurses with strong critical thinking abilities. Hence, constructivism is an appropriate theoretical framework within undergraduate nursing education because it allows future nurses to strengthen their competence in problem solving.

2.4 Constructivism and team teaching

Team teaching strategy is rooted in constructivist theory (Dumbrajs, 2007). From the educator's perspective, the collaboration seen between multiple teachers provides an opportunity for teachers to learn from one another. Sharing expertise, having mutual respect between teachers, and providing feedback is essential in any team teaching arrangement (Lowenbraun & Nolen, 1998). The educators assume the role of active learners by judging the relevance of old teaching practices within the team teaching methodology. From the student's point of view, having multiple teachers collaborating in the planning and delivery of course material is beneficial to learning (Puksa, 1999). Students learn by experiencing different perspectives and professional opinions that can help encourage decision-making skills. Lowenbraun and Nolen showed that active discussion and professional disagreement between teachers is an important part of team teaching. When students observe teachers expressing conflicting opinions, they are able to see the process of decision making and critical thinking. Decision making is accomplished through the reconsideration of viewpoints and negotiation between the teachers, a practice that is often associated with the social constructivist perspective. Teachers in this sense act as role models and encourage students to act similarly with their peers when learning conflicts or professional disagreements occur.

2.5 Literature review: team teaching

A literature review is a method used by health care professionals to critically analyze the scientific literature on a particular topic. The review matrix is the principal tool used for the systematic review and enables nurse researchers to make decisions that can ultimately influence nursing practice (Craig & Smyth, 2007). While the main purpose of a review matrix is to create structure and organize the range of evidence available in research studies, the goal of a literature review is to examine the themes across different studies (Garrard, 2007). As a result, a literature review helps nurse researchers to look for similarities and differences in findings across studies and more importantly emphasizes what is lacking in both content and methodology.

A systematic literature review was conducted using the following databases: PubMed, Web of Science, Embase, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Proquest (thesis dissertations), and EBSCO databases including Academic Search Complete, Education Research Complete, Medline, and Psych Articles. Key word and MeSH (Medical Subject Headings) term searches included "team teaching" or "collaborative teaching" and "nursing education." The initial search revealed 115 articles and abstracts. Nine articles were selected for review based on the following inclusion criteria: 1) primary research articles (both quantitative and qualitative), 2) articles published in peer-reviewed journals, 3) full-text articles, 4) English language articles, and 5) articles published between 1975 and December 2009. Articles that involved registered nursing (RN) undergraduate students and classroom teaching were preferred, but due to the limited number of articles fitting this criterion (3), team teaching articles that involved online and clinical teaching environments as well as trained RNs, diploma students, graduate students, and mental health nursing students were also included.

2.6 Selection of studies for review

Because this study explored students' experience, qualitative studies were favoured over quantitative ones. Well-developed qualitative studies can produce insights into the social world by "giving emphasis to the meanings, experiences, practices, and views of those involved" (Craig & Smyth, 2007, p. 154). Although examples were found of team teaching research articles that explored educational environments in other disciplinary contexts, such as the secondary school education literature (Dumbrajs, 2007) and the business education literature (Leon & Tai, 2004), these were not included in the literature review. The literature review was viewed as being of most relevance in informing this research if the literature pertaining only to team teaching and nursing was analyzed.

2.7 Description of studies

The articles used in the formulation of the matrix and literature review include four qualitative research studies (Floyd, 1975; Kerridge, Kyle, & Marks-Maran, 2009; Kruszewski, Brough, & Kileen, 2009; Shephard & Ashley, 1979), one quantitative study (Puksa, 1999), and four case-study articles (Dumas, 1999; McDonald and Walters, 2009; Minardi & Riley, 1991; Olivet, 1997). One of the qualitative research articles used an action research approach (Kerridge et al.). The four case-study journal articles all described and evaluated existing team teaching courses, albeit within different areas: in an online masters of science in nursing (MSN) course (McDonald & Walters), in clinical education (Dumas), in a Registered Mental Nurse (RMN) curriculum (Minardi & Riley), and in an interactive collaborative telecourse for MSN students from two different universities (Olivet). The articles were published in various countries, but all the research was done in western countries: two in the United Kingdom

(Kerridge et al.; Minardi & Riley), four in the United States (Floyd; Kruszewski et al.; McDonald & Walters; Olivet), and three in Canada (Dumas; Puksa; Shephard & Ashley).

2.7.1 Article similarities.

The articles were similar in planning and delivery of the team teaching approach, types of students, and data collection methods. Three of the articles indicated that team teaching was accomplished through the collaborative planning, delivery, and evaluation of the course (Kerridge, Kyle, & Marks-Maran, 2009; Kruszewski, Brough, & Kileen, 2009; Minardi & Riley, 1991). In four of the articles, the team teaching methodology involved a traditional classroom learning environment, where teachers used either lecturing or large group discussions (Kerridge et al.; Minardi & Riley; Puksa, 1999; Shephard & Ashley,1979). Four of the articles explored team teaching with undergraduate RN students (Dumas, 1999; Floyd, 1975; Kruszewski et al.; Shephard & Ashley). The study by Kruszewski et al. examined team teaching in an accelerated 12-month undergraduate RN curriculum. The data collection strategy used was predominantly student surveys using various types of questionnaires. Kerridge et al. used a four-question open-ended questionnaire exploring student perceptions of team teaching. Floyd(1975) used a 23-item questionnaire that asked students to characterize the team teaching items into major or minor disadvantages or advantages. Olivet (1999) used a five-point Likert-type scale where students ranked responses according to how strongly they felt about the team teaching items. Shephard and Ashley had a similar survey but used a four-point scale.

2.7.2 Article differences.

Differences were also seen regarding planning and delivery of team teaching, students involved, and data collection. Two of the studies stated that the teachers were flexible in how team teaching was used and either assigned content or teaching responsibilities to specific teachers or taught classes collaboratively (Dumas, 1999; McDonald & Walters, 2009). The delivery in two studies contrasted with traditional classroom teaching by using technology as a means to accomplish team teaching, one through an online course (McDonald & Walters) and one through an interactive telecourse where teachers were linked to different settings through cameras and microphones (Olivet, 1997). Additionally, the delivery of team teaching also differed in two studies that used the strategy in both the classroom and clinical settings (Dumas, 1999; Kruszewski, Brough, & Kileen, 2009). Rather than focusing on undergraduate RN students, two studies focused on graduate nursing students (McDonald & Walters; Olivet), one on undergraduate registered psychiatric nurses (Minardi & Riley, 1991), one on diploma nursing students (Puksa, 1999), and one on trained nurses (Kerridge, Kyle, & Marks-Maran, 2009). Data collection differed from survey responses in some of the studies. One of the journal articles explored student experiences by reviewing student discussion board postings from an online course (McDonald & Walters). These online conversations were examined by the teachers during and after the course as a way to get informal student feedback. Some studies also explored the experience of team teaching from the teacher's point of view (Dumas; McDonald & Walters; Minardi & Riley; Olivet; Puksa, 1999). Data collection among teachers was completed through teacher focus groups (Kruszewski et al.), teacher evaluations (Puksa), and post-course debriefing sessions (Dumas; McDonald & Walters; Minardi & Riley).

2.8 Scientific rigour

There are differences in how scientific rigour is critiqued in qualitative and quantitative research studies. The assessment of scientific rigour in qualitative research articles is based on how well the researchers attend to the credibility, dependability, transferability, and confirmability of the study (Craig & Smyth, 2007). Craig and Smyth defined the first criterion, credibility, as the study's ability to accurately represent the social phenomenon being investigated. The authors argued that credibility is how well the described phenomenon is recognized by those who have experienced it and by those outside of the experience. Creswell (1998) identified some major techniques that could strengthen credibility within qualitative research: triangulation, where researchers use multiple sources and methods to enrich the study's findings; peer review, to identify and clarify potential researcher bias; and member checking, where study participants are asked to corroborate the validity of the researchers' findings.

The second criterion, dependability, refers to how plausible or dependable the accounts from the research are (Craig & Smyth, 2007). Given the dynamic instability of the social world, it is impossible to perform research that does not have influence from factors outside of the study. Therefore, the concept of dependability refers to how well research can deal with this instability while still producing plausible results. Dempsey and Dempsey (2000) added to the criteria of dependability by identifying two specific concerns that must be addressed in dependable qualitative research. The first is the extent to which information gathered from subjects is accurate, and the second is the accuracy of the data-collecting instruments. The authors used multiple techniques to enhance dependability, including having sample variety, ensuring that ethical considerations were taken into account, providing a description of the data collection process, and ensuring that the instrumentation used was reliable and accurate.

The third criterion, transferability, refers to the ability of researchers to make informed decisions about the generalizability of the findings (Craig & Smyth 2007). Transferability requires the use of a detailed description, or a detailed account of the methodological strategies within the research study. This detailed account can include sampling strategies, data collection, and data analysis. Providing a detailed description of the research procedure allows readers to make decisions and judgments as to whether study findings will be applicable to other settings or populations.

The final criterion, confirmability, asks whether the study identifies how the researcher may have influenced study findings (Craig & Smyth, 2007). This is also referred to as researcher bias (Creswell, 1998). Researcher bias is important to acknowledge because it can influence the interpretation of the study results. All researchers begin their work with preconceived assumptions, perspectives, and orientations that have likely shaped their research. Reflexivity is a valuable technique for improving the confirmability of a study by allowing researchers to become aware of how they may have shaped study findings (Craig & Smyth).

In contrast to qualitative research, scientific rigour in quantitative research is dependent on the research design, validity, and reliability of the study (Loiselle & Profetto-McGrath, 2007). Loiselle and Profetto argued that a researcher uses research design to maximize control over tested variables by reducing the effects of extraneous factors. According to LoBiondo-Wood, Haber, Cameron, & Singh (2009), an effective research design includes unbiased sampling methods, consistency in data collection, control of the independent variable, and a description of how data are tested and interpreted. The validity of a study refers to both internal and external validity. Internal validity examines the strength of the association between the independent and dependent variables (LoBiondo et al.). It attempts to answer whether it is possible that the

independent variable causes a change in the dependent variable. Threats to internal validity include the following: history—events outside of the experiment that may influence study results; maturation—biological, physical, or psychological processes in an individual that develop over time; and mortality—the loss of subjects during a study (LoBiondo-Wood et al.). External validity, on the other hand, deals with the generalizability of study findings to other populations and settings (Loiselle & Profetto-McGrath). Assessing the external validity of a study focuses on the selection effects of the sample and answers whether the sample is an appropriate representation of the population being studied. Finally, reliability in quantitative research is concerned with how accurately the research instrument measures what is being studied (LoBiondo-Wood et al.). Reliability is concerned with precision and stability. Lobiondo-Wood et al. argued that a reliable instrument is one that shows less variance in repeated measurements and minimizes the chance of error in obtained scores.

2.9 Review and critique of the literature

The articles chosen from the literature search were critiqued using the scientific rigour criteria for qualitative and quantitative research. Eight qualitative studies and one quantitative article were included in the critique. The critique is divided into three sections and includes qualitative research articles, qualitative case studies, and one quantitative research article.

2.9.1 Qualitative research articles.

The study by Kruszewski, Brough, and Killeen (2009) evaluated the effect team teaching had on students achieving learning competencies in an evidence-based research course. The study took place in the US, and the sample was N=24 undergraduate nursing students enrolled in a second-degree accelerated nursing program in which students entered the program having already completed an undergraduate degree. The nursing program in the research by Kruszewski, et al. underwent a curriculum redesign to condense the time frame from 19 months to 12 months. The study's goal was to evaluate the use of team teaching as a new learning strategy to meet the needs of the adult learners in the program. The team teaching approach was described as having two teachers from two courses (Evidence Based Practice and Acute Care of Patients) working collaboratively to design, implement, and evaluate a clinical project assignment for students. Throughout the project the two teachers shared information about student progress, problems, and questions. The achievement of course learning competencies was measured using semi-structured questionnaires for teachers and the completion of an evidence-based practice performance scale by students at the completion of the course

Methodological strengths in the research included an emphasis on the data collection techniques and sampling methods. The use of multiple data collection techniques illustrated the use of data triangulation by the researchers and therefore increased and strengthened the credibility of the findings. Furthermore, the sample was seen as a methodological strength because it included a population of students similar to this study's population and included classroom teaching, therefore enhancing the transferability of the findings.

Although the credibility of the study findings was strengthened through data triangulation, the dependability of the evidence-based performance scale was a methodological weakness. The scale was developed by Killeen (2005) as part of a multi-site study that evaluated graduating nursing students' perception of their own evidence-based practice competency. The scale was based on the Conduct and Utilization of Research in Nursing model (Horsley, Crane, & Bingle, 1978) and consisted of 12 performance criteria in evidence-based practice. The authors did not provide details about the dependability of the evidence-based performance scale, and it was not possible to locate the original scale developed by Killeen. The lack of information about the dependability of the scale was a limitation in the study by Kruszewski, Brough, and Killeen (2009) and limits confidence in the study findings. Moreover, the study failed to comment on the ethical considerations of the sample, thus limiting the study's dependability. Including ethics in research involving human subjects is a legal responsibility and is crucial to the dependability of the study because it protects the human rights of the participants and ensures that subjects were not coerced into participating by the researchers, which could give inaccurate results.

Results from the study by Kruszewski, Brough, and Killeen (2009) suggested that team teaching enabled students to achieve high scores in their ability to think critically, acquire knowledge, collaborate, and become more engaged in their learning. Implications from this research support the use of team teaching as a strategy to educate second-degree adult nursing students in a classroom setting. The study provided moderate evidence that team teaching has cognitive benefits for students, but the low dependability of the data collection scale limits study findings.

The qualitative study by Kerridge, Kyle, and Marks-Maran (2009) was situated in the UK and was described as a pilot research study to evaluate the perceptions of nurses taught using a team teaching strategy. The delivery of the teaching was through a continuing professional development module for nurses who were being taught the ethics and ethical decision making process involved in the care of dying patients. The impetus for the research was to evaluate how a change in teaching the course from didactic instruction to collaborative teaching affected students. Kerridge et al. used an action research approach, which was determined to be the most appropriate to evaluate this new teaching practice. The action research method encompassed three stages: Look—defining and describing the problem of the previous practice; Think—interpreting and explaining; and Act—making a change to practice (p. 96). Adopting a team teaching strategy was a result of the researchers applying the Look and Think stages to the unsuccessful didactic teaching methods that were used previously, while the Act stage was the implementation and evaluation of the new team teaching method.

The sample for the study was N=19 trained nurses from two different cohorts at different practice sites. The team teaching approach included two teachers working collaboratively in the planning, delivery, and evaluation of the course. Data was collected using study surveys that included four open-ended questions. The surveys were then analyzed using the framework method of analysis, where responses were coded and then grouped into major themes.

The use of open-ended surveys was an appropriate method of data collection that was successful in exploring the perceptions of nurses learning from team teaching strategy, hence ensuring the credibility of the findings. Transferability was also high, as the authors provided a detailed description of the data analysis process by including coding examples. The use of team teaching in a classroom setting further strengthened transferability and is relevant to my research.

Other methodological strengths focused on research design. Two cohort sample groups from different sites were used, thereby increasing the generalizability of the results. Additionally, through self-reflexivity the authors mentioned that a potential threat to confirmability was through the wording of the survey, which may have positively skewed responses. Reflexivity was important in this study because it warned the reader to interpret the study results with caution, as having a positively skewed survey would greatly influence findings.

The small sample size and the use of trained nurses instead of undergraduate student nurses were methodological weaknesses. Furthermore, during the data analysis phase, the authors failed to use any investigator triangulation techniques that would have strengthened the credibility of the results. It would have been beneficial, especially during the coding of the survey responses, if multiple researchers had looked at the data to ensure that the derived themes were in fact present from the responses. The dependability of the survey was also in question, as the authors did not use a standardized survey or have the survey reviewed prior to distribution. This creates uncertainty as to whether the survey was accurate and appropriate in assessing nurses' experience of team teaching.

Key findings from the study were centred on the benefits of team teaching from the perspectives of the students and fell into three major themes: hearing multiple perspectives, enhancing group work, and enabling cognitive development skills. The implications from this research offer support for the use of the team teaching strategy in classroom nursing education, but the study's findings are of limited use in my research because trained nurses were used instead of undergraduate nursing students. Study findings should also be interpreted with caution because of the questions about the survey's dependability and the analysis of the results.

The article by Shephard and Ashley (1979) is a descriptive qualitative survey study conducted in Canada that explored the learning attitudes of undergraduate health sciences students. The authors conducted the research to evaluate current teaching methods in health science faculties and to identify improvements for future courses. The sample consisted of 464 undergraduate students from four health science faculties: medicine, pharmacy, nursing, and physical education. Forty-three participants were nursing students, with twenty-one in third year and twenty-two in diploma programs upgrading to degrees. Data was collected through student surveys. The survey consisted of statements about team teaching, with students indicating if they: (a) opposed greatly, (b) opposed, (c) favoured, or (d) favoured greatly these statements.

The use of a large sample size enhanced the transferability of study results and was a methodological strength. Additionally, the inclusion of undergraduate nursing students and classroom teaching is relevant to my research and increases transferability. The survey design of the study was an appropriate choice that enabled gathering of descriptive information about the attitudes of the students in relation to their views on team teaching courses, thereby increasing the study's credibility.

Although the researchers provided a detailed description of the survey results, they failed to mention any efforts taken to ensure the dependability of the survey instrument through use of a standardized survey or peer review. This oversight is a methodological weakness, as the dependability of the survey comes into question. The study was also conducted in 1979 and there are questions about the relevance of the findings to contemporary nursing education.

The results of the research suggested that nursing students strongly favoured the use of team teaching methodology within a classroom setting. However, because the survey just addressed whether students favoured team teaching, the results offer no insight or rationale as to what specific aspects of team teaching are important within classroom learning. The applicability of the findings to contemporary nursing education is also in question as the research was conducted over 30 years ago. Therefore the findings from Shepard and Ashley's (1979) study have limited implications to my research.

The study by Floyd (1975) was a qualitative descriptive research study based in the US that aimed to understand the advantages and disadvantages of team teaching for baccalaureate nursing students. As a way to improve the quality of teaching within undergraduate nursing education, team teaching was adopted by two colleges as a classroom teaching and learning strategy. The study aimed to evaluate the effects of team teaching from the perspective of students and to identify potential advantages and disadvantages. The sample was N=87 undergraduate nursing students from two colleges. The students from the two colleges were given a 23-item questionnaire containing statements about team teaching. Students were asked to respond to the statements by indicating whether they thought various aspects of team teaching were: (a) major advantage, (b) minor advantage, (c) minor disadvantage, or (d) major disadvantage. The results of the questionnaire were analyzed using frequency counts and simple descriptive statistics.

The study's emphasis on the dependability of the questionnaire was a methodological strength because it gives confidence in the accuracy of the data collected, thus increasing its credibility. The questionnaire was developed by the investigator. During the development stage, two pilot studies were conducted to ensure the dependability of the survey. In the first pilot

study, participants identified advantages and disadvantages of team teaching. These statements were reviewed by the investigator and included in the questionnaire. In the second pilot study, the questionnaire was given to five students, who commented on the clarity and appropriateness of the statements. Methodological strengths were also found in the research design. The large sample size and collecting data from two different colleges increased the study's credibility. Transferability to my current research was also high as undergraduate nursing students and classroom teaching were included in this study.

Floyd (1975) failed to comment on ethical considerations or to state researcher bias, and this was determined to be a methodological weakness. In the discussion section, the researcher mentioned that a potential weakness of the study was the wording in the questionnaire that may have introduced a bias. However, Floyd failed to describe how this potential bias may have influenced the study. This creates uncertainty for the reader about the impact of researcher bias on results, thus limiting the study's confirmability. Additionally, Floyd's study was conducted in 1975 and has limited relevance to contemporary nursing education. Contemporary nursing education has shifted away from traditional teacher centred learning to active student learning (Brandon & All, 2010).

Floyd's (1975) study emphasized advantages and disadvantages of team teaching from the students' perspective. The results indicated four major advantages: (a) exposure to different values, (b) exposure to different philosophies, (c) exposure to varied experience, and (d) greater teacher competency. The major disadvantages identified were: (a) repetitive overlapping of material, (b) students' feelings of having no security, and (c) teacher contradiction.

The results from Floyd's (1975) study offer insights about the potential advantages and disadvantages of team teaching from students' perspective. The research identified major advantages and disadvantages of team teaching that would be either supported or rejected by my research. Although Floyd's (1975) study had strong scientific rigour and included undergraduate nursing students and classroom teaching, the implications from this research are limited due to changes in contemporary nursing education.

2.9.2 Qualitative case studies.

The case study by McDonald and Walters (2009) described the use of team teaching in an online course within an interdisciplinary model. The case study was conducted in the US, and the course was designed to promote interdisciplinary teaching. Collaboratively, teachers from the College of Liberal Arts and Education planned and implemented an online course in the nurse educator track of the MSN program. Although both teachers contributed independently to the course through online discussion postings, their teaching responsibilities differed, as one teacher was responsible for the grading while the other was a resource for the students. The evaluation of the team teaching strategy by the teachers was completed through post-course teacher debriefing.

Incorporating reflective evaluation was a methodological strength in this case study because it allowed the researchers to collect data pertinent to their experiences with team teaching and therefore added credibility to the findings. A methodological weakness was that there was no mention of any rigourous data collection methods used or of how data was analyzed within this case study. An additional weakness was that the online delivery of the course is different from the classroom delivery method in my research thus limiting transferability.

Study findings argued that team teaching created an environment for teachers that encouraged peer support and constructive feedback. Although the results of this study describe a potential benefit of team teaching for teachers, the lack of rigour in the data collection methods and data analysis means that this evidence is weak. Moreover, as the study did not focus on the perspectives of students, the results are not useful to my research purposes.

The qualitative article by Dumas (1999) was a case study that described the experiences of two teachers using team teaching to teach undergraduate nursing students in a theoretical course with a clinical practicum. This Canadian study described the implementation of team teaching in a perinatal course as a way to improve the level of teaching in nursing education to meet the professional developmental learning needs of students. This study was initiated because there was a literature gap regarding the use of team teaching in a course that consisted of both classroom and clinical teaching. Dumas described the team teaching approach as one that involved collaboration at all stages of the course—that is, the two teachers planned, delivered, and evaluated students equally. Additionally, the researcher added that interactive teaching methods such as role playing, analyzing case histories, and class discussions were used as teaching strategies to complement the team teaching philosophy. Data from the experience of the teachers was obtained through teacher debriefing.

Results from the study illustrated that team teaching has advantages and disadvantages for students from the teacher's perspective. An advantage was that students were able to witness teachers managing professional arguments, while a disadvantage was the confusion students experienced when hearing conflicting information. Dumas attributed the advantages of team teaching to the commitment, mutual respect, and open communication that teachers had with each other.

The use of teacher debriefing was an appropriate data collection method to capture the insights of the teachers and a methodological strength. This increases the strength and credibility of the study findings. Findings are also transferable to my current research because undergraduate nursing students and classroom teaching were used. On the other hand, methodological weaknesses were the absence of rigourous data collection and data analysis methods which decreased the dependability of the findings.

Implications from the case study offer insight into the student advantages and disadvantages of team teaching from the teacher's point of view. These advantages and disadvantages will either by supported or rejected by my research. However, because this case study lacked strong scientific rigour, confident findings were not produced.

Olivet (1997), a qualitative case-study, described a graduate course on nursing theory taught between two schools of nursing in the US. The course was developed as a result of a collective outreach arrangement between the schools that served to increase the availability of graduate nursing courses throughout the state of Alabama. The sample included 22 MSN students from two different sites. The teachers had no experience with team teaching, although prior to the course, planning was done collaboratively. The implementation of the course involved the teachers teaching specific classes with the two schools linked via tele-conferencing.

The course was evaluated using teacher reflection along with student surveys that used a Likert rating scale. Although the study states that the survey used was based on a valid and reliable instrument, details about the dependability of the survey were not given, and this was a methodological weakness. According to Olivet (1997), the survey was developed after a tool used in the evaluation of a previous tele-conference course (Bryant, Copeland, Rockwell, Love,

Maxwell, Owens, & Wood,1990). The report by Bryant et al. does not provide validation data and thus decreases the dependability of the survey implemented by Olivet. Additionally, a major weakness in the survey by Olivet was that it failed to assess any elements of team teaching even though the collaboration between teachers between the two schools was one of the most distinguishing elements of the course. Students did however offer general support for team teaching through written feedback in the "general comments" section of the survey, but specific data was not obtained, limiting the credibility of this finding.

Implications from this study give preliminary support for the use of team teaching for graduate nursing students. However the support for team teaching was accompanied with weak evidence due to the omission of an assessment of team teaching within the student surveys. Additionally, because the study included graduate nursing students instead of undergraduate nursing students, the findings regarding student perspectives are of limited use for my research purposes.

The final qualitative article was a case study by Minardi and Riley (1991) in the UK that described the experiences of teachers using team teaching strategy in a communication skills course for an undergraduate psychiatric nursing curriculum. Team teaching was adopted by the teachers as a way to experiment with alternative teaching styles. Two teachers were involved in the collaborative planning of the course, and the teaching responsibilities varied as the teachers taught either collaboratively or independently. Through post-course teacher debriefing and informal student feedback, the researchers collected data to evaluate the impact of team teaching on teachers and students.

Credibility was established by using multiple methods of data collection and eliciting feedback from two groups involved in team teaching. This was determined to be a methodological strength. However, a significant methodological weakness was the use of a less rigourous data collection instrument, thus decreasing the study's dependability. Transferability is also limited as undergraduate psychiatric nursing students were used instead of undergraduate registered nursing students.

Results from the study support advantages and disadvantages of team teaching from the student perspective. From the point of view of the students, team teaching involved more engaging lectures, and the multiple teachers served as professional role models. On the other hand, hearing multiple and conflicting perspectives often confused the students and was a major disadvantage.

Implications from the study add to the body of knowledge regarding team teaching's advantages and disadvantages for students. Findings from this case study have limited relevance to my research because undergraduate registered nursing students were not included in the sample. Furthermore, the case study by Minardi and Riley (1991) lacked rigourous data collection and analysis methods and therefore did not produce confident findings.

2.9.3 Quantitative research article.

The sole example of quantitative research was conducted in Canada by Puksa (1999) and was part of an MSN student's thesis work. The study was a quantitative correlational descriptive survey study and included a comparison of two diploma nursing colleges in Ontario that held different perspectives on learning theory. One college's nursing curriculum was designed according to a traditional teacher-centred philosophy, while the other's curriculum emphasized a

collaborative teaching and learning environment. The study's aim was to discover whether the team teaching approach had an impact on students' self-efficacy scores compared to those of students in the traditional nursing curriculum. Self-efficacy was defined as the ability to analyze and execute required behaviours. Additionally, the research examined the perceptions of first-year and second-year diploma students of their teachers' collaborative teaching style and also the teachers' own perceptions. The sample was done through non-randomized convenience sampling from the two diploma nursing colleges (College A: n=157, College B: n=240). Data was collected through two standardized scales (Principle of Adult Learning scale and Collaborative Behaviour Scale) that aimed to assess students' self-efficacy, students' views on teacher collaboration, and teachers' self-evaluation of their collaborative teaching.

Methodological strengths of the study included the emphasis on research design, sample size, and validity and the reliability of the scales used. The research design was appropriate for testing the effects of team teaching on the students' self-efficacy through a comparison of an intervention group (contemporary nursing college) and a control group (traditional nursing college). This allowed the researcher to analyze the differences in self-efficacy based on the use of team teaching as an independent variable, thereby strengthening the study's internal validity. The use of teacher self-evaluations and student evaluations further solidified the strength of the research design, because it allowed for the collection of multiple perspectives about how team teaching was experienced.

The use of multiple sites and a large sample size increased the external validity of the study. The researcher completed a power calculation at 80% and r=0.05 to determine the sample number needed to show a medium effect size from the independent variable (team teaching in the contemporary curriculum). The sample number of n=157 in college A was well above the

power calculation number of n=46 and thus had strong internal validity. Data analysis was also performed with the SPSS/PC+ computer program, which contributed to confidence in the study findings.

Another methodological strength was the validity and reliability of the two scales used in data collection, which gives confidence to study findings. The Principle of Adult Learning Scale was used to measure the congruency between the teachers' perceived and actual collaborative teaching behaviour. The scale was developed by Conti (1979) and consisted of a 44-item summative Likert rating scale. Construct validity was established through two focus groups of adult educators who commented on the validity of the items. Content validity was established by field-testing educational practitioners at three different sites. Pearson product-moment correlations were calculated to evaluate the relationship between each individual item and indicated that 25 items were significant at the .001 level, eight items at the .01 level, seven items at the .05 level, and four items at the .1 level. A factor analysis of the items also lent support for the construct validity of the scale. Criterion-related validity was ensured through the comparison of the Principle of Adult Learning scale with the Flanders Interaction Analysis Categories scale. Both instruments measure initiating and responsive action. Pearson product-moment correlations showed positive correlation ratios of .85, .79, and .82 for teacher response ratio, teacher question ratio, and pupil initiation ratio. The reliability of the Principle of Adult Learning scale was determined through the test-retest method and yielded a reliability coefficient of .92. The validity and reliability of the Collaborative Behaviour Scale was also strong. The scale was developed by Stichler (1989) and was used to measure the respondents' perception of collaborative relationships. The scale consisted of a four-point Likert rating with response options ranging from (1) rarely to (4) nearly always. The Weiss and Davis Collaborative

Practice Scale was used to test the convergent validity of the Collaborative Behaviour Scale. Cronbach's alpha coefficient for internal consistency was .80 and for test-retest reliability was .79. The content validity of the instrument was reported as .91.

Methodological weaknesses in the Puksa study were in relation to external and internal validity. Because my research focuses on undergraduate nursing students instead of diploma students, the results from Puksa's study had less applicability for my research purposes. Moreover, it would have been preferable if the researcher had had the students complete pre-test self-efficacy questionnaires and had compared these results to the self-efficacy scores post-course. This would have offered further support for the effects of collaborative teaching on self-efficacy and would have increased the internal validity of the study's findings.

Study findings showed a significant positive relationship between student self-efficacy scores and collaborative teaching. Implications from this result offer strong correlational evidence for the use of collaborative teaching as a strategy to encourage students to improve their self-efficacy and consequently may enhance classroom performance. Additional findings indicate that collaborative teaching serves to encourage collaboration among students and that teachers often believed that they were more collaborative than what was perceived by the students. These findings contribute strong supporting evidence for the potential advantages of collaborative teaching and also signify that teachers need to be self-reflective of their own teaching behaviours.

2.10 Summary of review, critique of the literature, and implications

Critique of the selected literature showed preliminary support for the use of team teaching within nursing education. Because there were few primary research articles published, strong conclusive support for team teaching cannot be established. Additionally, the five primary research articles varied in quality, with some studies having weak dependability criteria related to data collection and data analysis methodology. Case-study examples did provide valuable insights about the positive effects team teaching had on students, but because these case studies did not contain strong rigourous methodology, conclusive evidence cannot be established. There were also questions regarding the transferability of study findings, as study samples did not always include undergraduate nursing students or involve teaching in a classroom setting.

The two primary research articles with the strongest scientific rigour, Puksa (1999) and Kruszewski, Brough, and Kileen (2009), supported the position that team teaching had cognitive benefits for students. Because these were the only two research articles to suggest this, further research is needed to support and confirm these findings. The team teaching literature also provided descriptive information about the team teaching strategy. This descriptive information was similar throughout the studies and focused mostly on the advantages and disadvantages of team teaching from the perspectives of students. For students, advantages included exposure to different perspectives, a view of teachers as professional role models, and encouragement of collaborative learning; the major disadvantage was experiencing confusion from hearing information from multiple teachers.

2.11 Gaps in the team teaching literature

What is lacking in the team teaching literature is a clear model outlining how team teaching should be implemented in classroom teaching. The literature review illustrated that the approach to team teaching varied across studies, as some involved collaborative teaching while others favoured specific teaching responsibilities for each teacher. One implication from the literature review for my research was that my research should examine whether students prefer any of the specific uses of team teaching. Additional implications for my research were that it should confirm the potential advantages or disadvantages of team teaching identified by the literature review.

There is limited literature published on team teaching within undergraduate nursing education. Notably, there were few primary research articles, either qualitative or quantitative, that provided strong evidence showing what effects team teaching has on learning by undergraduate nursing students. The dates of the existing team teaching articles showed that the majority of the articles were published during the 1970s and the 2000s. The 30-year gap in the literature signifies a time period where team teaching was not emphasized as a teaching and learning strategy within nursing education. In my review of the literature, the reason for this gap is not evident. However, more recent articles in the literature indicate a renewed interest in the topic of team teaching. This may be due to a shift in nursing curricula towards a more student-centred learning that values collaboration and teamwork between faculty and students (Larue, 2008).

2.12 Limitations of the literature review

The literature review has several limitations. Only journal articles that were available electronically were accessed, and thus some key hard-copy journals were not included in the review. Additionally, the literature search focused strictly on English language journals, with the result that some research from non–English-speaking countries that used a team teaching approach was not reviewed. The decision to limit the literature review to nursing articles was intended to focus on the applicability of nursing research literature to nursing education. Although it can be argued that undergraduate students from multiple disciplines share common characteristics, I focused on nursing education literature due to my research focus on nursing students and team teaching in the nursing curriculum.

2.13 Summary of chapter 2

This chapter introduced the theoretical framework of constructivism in relation to how this perspective might inform team teaching strategy. It presented a review of the team teaching literature and a review matrix (Appendix E) as a tool for organizing the articles. The chapter concluded with a review and critique of the team teaching literature along with implications for the current research study. The study methodology, research question, expected outcomes, and a description of the data collection method will be discussed in chapter 3.

Chapter 3: Methodology

This chapter presents the study's methodology, including the study sample, student survey, data collection procedures, data analysis, and ethical considerations. A figure illustrating the content analysis process is also included. The chapter concludes with an outline of researcher assumptions and expected study outcomes.

3.1 Research methodology

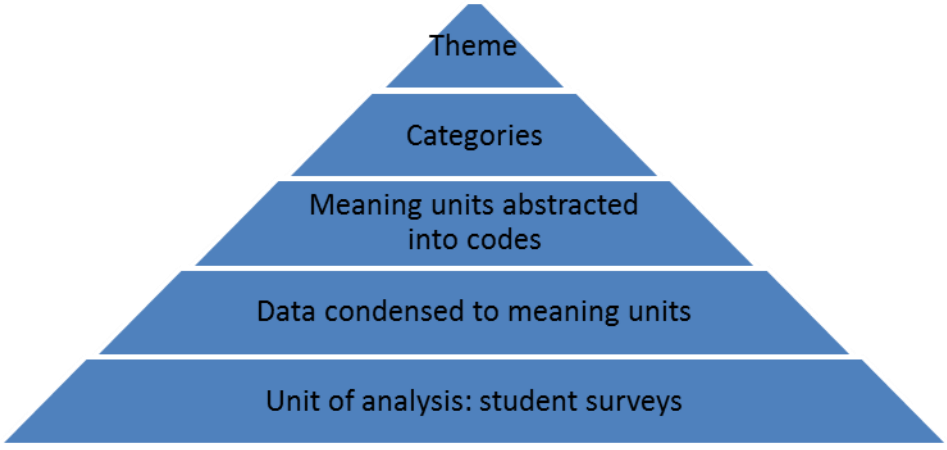
In this study, qualitative content analysis methodology was used to describe the experiences of undergraduate nursing students enrolled in a team-teaching curriculum. Content analysis as a research method is a systematic way to describe phenomena and make replicable and valid inferences from data to their context (Krippendorff, 2004). The aim is to condense text into broad categories that can describe or provide new insights about particular topics.

Within nursing research, Graneheim and Lundman (2004) identified central concepts related to the process involved in content analysis: manifest and latent content, unit of analysis, meaning unit, condensing, abstracting, code, category, and theme (Figure 1). The obvious components of the text are considered the manifest content, and the underlying meaning of the text represents latent content. The unit of analysis refers to what is being analyzed. The authors stated that the unit of analysis needs to be large enough to be considered a whole and small enough to be considered a stand-alone or unique meaning unit. The unit of analysis for this study was student surveys. The survey was chosen as an appropriate unit of analysis because it provides a way to gather student feedback. Marsh and Roche (1993) argued that having students complete feedback questionnaires is a valid and reliable means to gain insight into the

effectiveness of teaching and learning. The extensive body of research reviewed by Marsh and Roche suggested that student feedback improves the quality of teaching by outlining the strengths and weaknesses of the teachers and their teaching methods. More recently, student feedback has grown to be the major form of evaluating teaching and learning in university education (King & Fraser, 2005). Barth (2008) adds that student feedback is valuable in assessing the quality of teaching and supports its use as an evaluative tool of teaching.

During content analysis, large text is shortened in a process called condensation. This breaks smaller text into meaning units, which are words, sentences, or paragraphs containing related content. These meaning units are then interpreted at a higher logical level through abstraction and made into labeled meaning units called codes. Next, codes are grouped into categories that contain content that shares commonality. Creating categories is the core feature of qualitative content analysis (Graneheim &Lundman, 2004). The authors stated that categories answer the question "What?" and can be shown to be a thread throughout the codes. Finally, creating themes is a way to connect meaning across categories. A theme represents the underlying meaning that is common through condensed meaning units, codes, and categories.

Figure 1: content analysis



3.2 Process

Students completed a survey consisting of six open-ended questions designed to describe their experiences with team teaching. Prior to the data analysis process, I read through the student surveys multiple times to get a sense of the data. Sandelowski (1995) argued that this pre-analysis stage is essential in qualitative research analysis because it allows the researcher to become familiar with the data's essential features. Elo and Kyngäs (2008) added that getting a sense of the data is also a crucial step in current content analysis methodology. Only when a researcher obtains a sense of the whole can insights and themes emerge from the data.

After the pre-analysis stage, data was analyzed using the content analysis method outlined by Graneheim and Lundman (2004). The computer program NVivo (QSR International, 2010) was used during the analysis process to increase study validity. Themes and categories derived from the content analysis process were also reviewed by the researcher's thesis committee members for internal consistency.

3.3 Sample

This research used non-randomized convenience sampling. The study population included 50 out of a possible 90 (56% response rate) third-term undergraduate nursing students enrolled in the UBC Bachelor of Science in Nursing (BSN) program starting in September 2009. This specific cohort of students was of particular interest to the researcher because starting in September 2009 UBC SON initiated a revised undergraduate nursing curriculum that used team teaching as its main pedagogical teaching strategy. Therefore, these nursing students would have had experience with team teaching throughout the different courses within the curriculum. Other

UBC SON undergraduate students who were not in the September 2009 cohort were excluded from this study.

Demographic information about the BSN students admitted in September 2009 was gathered from the undergraduate records office. This cohort of students had an age range of 19 to 49 years, with a mean age of 28. Eighty of the students were female (89.9%) while 9 were male (10.1%). Because the academic requirements for the UBC SON include advance completion of a minimum of 48 university credits in any discipline, students who entered the nursing program had various educational backgrounds. These educational backgrounds included 42 with advance completion of 48 credits with no degree, 19 Bachelor of Science, 15 Bachelor of Arts, 5 Bachelor of Human Kinetics, 2 Bachelor of Commerce, 2 Bachelor of Social Work, 1 Bachelor of English, 1 Bachelor of Science of Food and Nutrition, 1 Master of Science, and 1 Master of Health Administration. No personal identifiers were collected from the sample survey population. An assumption, therefore, is that they are representative of the entire 2009 BSN cohort.

3.4 University of British Columbia School of Nursing description

UBC SON is a leading centre for nursing education, scholarship, and practice (UBC SON Website, 2010). Since its beginning in 1919, UBC SON has been preparing baccalaureate nurses within the Faculty of Applied Sciences. The school's mission is

> To prepare outstanding nurses who are committed to excellence and innovation, [and] to develop and transmit knowledge regarding nursing practice and the human experience of health, illness and healing. (UBC SON Website, 2010)

As a result of the school's strong commitment to producing high calibre nursing graduates, UBC SON emphasizes the development of positive learning environments for faculty and students and scholarly research within the realm of education. These two areas are identified as two of the four goals within the School of Nursing's Academic Plan (2010): enhanced capacity for excellence in learning environment education, sustainable capacity for research and scholarly excellence, sustainable health system capacity for service delivery and practice education, and expanded community engagement. Team teaching specifically creates a positive environment of collaboration between faculty and an innovative educational strategy to promote collaborative student learning. These aspects of team teaching coincide with the overall academic direction that UBC SON aims to take in the future.

3.5 University of British Columbia School of Nursing curriculum description

UBC SON curriculum is an upper division advanced standing nursing program that spans an intensive 20 consecutive months (UBC SON Website, 2010). Students enter the program in their third year and complete the baccalaureate program in five academic terms.

The curriculum is organized into four levels with specific outcomes for each level (Appendix D). Level 1 spans the first term and includes the following courses: Foundations for Professional Nursing Practice; Introduction to Professional Practice with Adults, Older Adults and their Families; Introduction to Relational Practice; Introduction to Critical Inquiry; and Introduction to Leadership in Health Care. Levels 2 and 3 (spanning the next three terms) provide the Professional Practice courses related to maternity, pediatrics, mental health, and community populations as well as a second course with adults and older adults. During these three terms, the second and third levels of the core threads of Professional Practice, Relational

Practice, Critical Inquiry, and Leadership are taught concurrently and are integrated into the theory/practice courses using a variety of learning strategies. This research study involves students enrolled in term three out of five terms.

3.6 Survey

The survey (Appendix A) was developed by the researcher and designed to assess student perspectives regarding team teaching. Because there was an identified gap in literature that explored student perspectives of team teaching within undergraduate nursing education, the goal of the survey was to allow students to freely express their thoughts. The survey included six open-ended questions that gave the students flexibility in their answers. The questions were structured to gather descriptive data related to students' experience with team teaching, how team teaching influenced their learning, the positives and negatives of team teaching, the applicability of using a team teaching approach within undergraduate nursing education, and suggestions for improving team teaching in the future.

To increase the face validity and appropriateness of the survey questions, the survey was reviewed prior to distribution by the researcher's thesis committee members. LoBiondo-Wood. Haber, Caneron, & Singh (2009) defined face validity as the ability of an instrument to measure the concept the researcher intends to investigate. The concept in my research was to investigate the experiences of undergraduate nursing with team teaching. The survey was developed with the assistance of committee members to ensure face validity due to the lack of a validated tool to question students about their team teaching perspectives.

3.7 Data collection procedures

Permission was requested by the researcher to collect survey data from the students during class time and was verbally granted by the course leader of the Leadership and Management course taken by the September 2009 UBC BSN students. The Leadership and Management course was determined to be an appropriate time to collect student responses because all of the September 2009 cohort members were enrolled in the course, thus making it convenient to distribute and collect the surveys. The researcher visited one of the classes and spoke to the students to explain the purpose of the study. A written information sheet that explained study details was handed out to the students (Appendix G), and they were given the opportunity to ask questions regarding the research. Student participation was requested by the researcher, and the students were assured of confidentiality and anonymity. They were reminded that participation was voluntary and that those who did not wish to complete the survey faced no academic penalty.

The survey was handed out during the researcher's visit to the class and additionally posted on the course website by the course leader for students who were absent. The researcher's contact information was given to the students, and they were instructed to contact the researcher if they had any questions about the study. Students were also told that they would be notified of any publications or presentations that resulted from this research. The expected completion time of the survey was 20 minutes. To maintain anonymity, students were asked not to write their names on the survey when handing them in. The researcher requested that the students comment on any aspect of team teaching they experienced within the UBC SON undergraduate curriculum. They were reminded that survey responses were not restricted to team teaching activities in the Leadership and Management course that they were attending. One

week after distribution of the survey, a reminder memo was posted on the course website by the course leaders. The students were given two weeks to complete the survey, and surveys were collected by the researcher at the beginning of class. Completed surveys were gathered by the researcher and placed in a sealed envelope. Consent to participate was indicated by the return of the survey. A small number of students asked to return the surveys outside of class time. The researcher instructed these students to place the surveys in a sealed envelope and place them in a box that was set up at the UBC SON office. Funding for the research study was through the University of British Columbia Teaching and Learning Fund. As a thank-you for participating, students were given a $5 Starbucks coupon after surveys were returned. As a way to record the number of coupons that were distributed, students were asked to sign a separate sheet to verify that they had received their coupon. Students' signatures were not connected in any way with their returned surveys.

The survey data were entered into a password-protected computer. The data will be stored for five years before deletion as per UBC's research protocol. Hard copies of the surveys will be kept in a locked storage cabinet at UBC SON and will be shredded at the end of five years. Only the researcher and thesis committee had access to the raw survey data during data analysis.

3.8 Data analysis procedures

The data were analyzed using the computer software NVivo 9 (QSR International, 2010). NVivo 9 is a qualitative data analysis computer software program used to analyze rich text-based information where deep levels of analysis on small or large volumes of data are required. Survey data were entered into the program and text was tallied according to the frequency of similar

responses. Under the headings of each of the six questions on the survey, the content analysis method according to Graneheim and Lundman (2004) was applied and data was organized into meaning units, condensed meaning units, and codes. This text was then grouped into conceptually similar categories, and a count of the number of times the categories appeared within the data was performed. Similar categories were then clustered under similar themes. Simple descriptive statistics about data responses were also produced by the program. Themes and categories were analyzed by the researcher for conceptual similarity and differences and reviewed by the thesis committee to increase validity.

The six open-ended questions within the survey produced unstructured responses and gave students flexibility in how they answered questions. Some student responses provided multiple answers to questions, while some provided none, and thus the total number of responses for each question does not always equal the total number of students.

3.9 Ethical considerations

Ethics approval was granted by UBC's Behavioural Research Ethics Board for Human Subjects. Permission was also granted by the appropriate authorities of the nursing program to gather student response data. There were no known risks to subjects. A potential benefit was course and curriculum changes based on analysis of student feedback. Students were informed both verbally and in writing about study descriptions and given appropriate amounts of time to ask questions and to complete the survey. They were also assured that participation in the study was voluntary and that faculty would have no knowledge of their participation status. Students were asked not to write their names on the survey responses to ensure anonymity. Students also

had the option to refuse to answer any of the six survey questions, and researcher contact information was given for students to ask any questions about the research.

3.10 Assumptions

The research was carried out under the following assumptions:

- Survey responses will reflect students' perceptions of team teaching.
- Students will perceive advantages and disadvantages associated with team teaching strategies.
- Team teaching strategies will positively influence students' perceptions of learning experiences within the undergraduate nursing education program.

3.11 Expected outcomes

The expected outcomes of the study were influenced by the findings from the literature review. The first prediction was that students would favour team teaching in undergraduate nursing courses. The collaboration between teachers would improve the students' learning experience through hearing multiple faculty perspectives. This would engage students with the classroom content and promote an environment that supported student learning. The team teaching strategy might also cause negative experiences for students who were unfamiliar with it as a teaching and learning strategy. Because team teaching differs from traditional teaching methods, students might experience feelings of frustration or doubt when learning how to deal with it as a new method of teaching. The second prediction was that students would initially struggle with understanding the benefits of using a team teaching strategy.

3.12 Summary

This chapter included a description of the research methodology, sample, student survey, data collection procedures, and data analysis procedures. It also presented researcher assumptions associated with the study and outlined expected outcomes based on a review of the literature. Results of this research will be presented in chapter 4.

Chapter 4: Results

This chapter discusses the results of the survey and describes the analysis process and the organization of the data. The survey data is presented in tables and described in text with supporting quotations. The chapter concludes by describing the major themes from the data.

4.1 Analysis

Fifty surveys were completed by students and returned to the researcher. There was a response rate of 56% with 50 out of a possible 90 students returning the survey. Three surveys were omitted from analysis because names were written on the surveys. Therefore, 47 surveys were analysed.

The surveys constituted the unit of analysis and were analysed by means of content analysis as outlined by Graneheim and Lundman (2004). The content analysis phase involved several steps. First, surveys were read over by the researcher multiple times to get a sense of the whole. Second, the handwritten survey responses were transcribed into a word document and then entered into the NVivo 8 computer program. In the NVivo 8 program, data was organized according to the six survey questions. Each of the six survey questions was analyzed separately. Because there were no restrictions or limitations placed on the survey responses, some survey questions contained multiple answers or were not answered. Third, answers to the six survey questions were read and organized into meaning units. A meaning unit is text of several words or phrases that are similar in content and context. The meaning units were read over and condensed into codes. A code is a label of the meaning unit that captures the content of the meaning unit into a limited number of words. Fourth, the codes were read over multiple times

and compared for similarities and differences. Similar codes were then grouped into categories. Fifth, under each question, similar categories were grouped into themes. Sixth, the themes obtained from the six survey questions were analysed and compared for similarities and differences. Recurring themes were then grouped together. To ensure data content validity, the codes, categories, and themes were reviewed by the researcher's thesis supervisor.

4.2 Survey questions

The six survey questions were designed to answer the research questions and primary goal of the research. The first research question examined experiences of undergraduate nursing students' learning from a team teaching strategy, and the first survey question asked "What was your experience with team teaching this term?" The second research question also sought to find the influence team teaching had on learning, and the second survey question asked "In what way did team teaching influence your learning?"

In addition to the two research questions of the study, the goal of the current research was to identify strategies to improve the delivery of team teaching in the newly revised UBC SON undergraduate curriculum. With this in mind, the final four survey questions attempted to address the positive and negative aspects of team teaching and to identify recommendations to improve team teaching delivery in the future. These questions were as follows: 3) "What positive aspects of team teaching did you experience this term?" 4) "What negative aspects of team teaching did you experience this term?" 5) "Would you welcome additional courses to adopt a team teaching model? Why?" 6) "What suggestions do you have to improve team teaching in the future?"

4.3 Organization of results

Results from the study were organized according to the survey responses for each of the six survey questions. Twenty-nine tables were constructed during the analysis process. These tables are in Appendix B. They include examples of the meaning units, codes, categories, and themes that were determined in the analysis process. Similarly, the operational definitions used to determine the themes and categories are listed within the tables. Frequency counts were tabulated for the number of similar codes and categories found within each question. In total, 560 codes, 69 categories, 7 sub-categories, and 27 themes were derived from the six survey questions. A summary of the data can be found in Appendix C. The themes from the data were organized into three major themes: positive experiences, negative experiences, and teaching recommendations. Tables 1, 2, and 3 outline the major themes from the data along with the frequency of the codes that appeared for each theme.

4.4 Results

Table 4.1 Summary of major positive themes

Positive Themes	**Codes**	**Indicators**
Challenging student learning	99	Hearing different perspectives and viewpoints, learning from different teaching, promotion of alternative thinking
Increasing teacher credibility	107	Learning from expert nurses, provided resources, connecting with teachers
Teams acting as nursing roles models	28	Expert nurses who inspired and got students excited about nursing, promoted teamwork
Promotion of student learning	49	Engaged learner, enhanced learning, promoted interest

4.4.1 Positive experience.

Major themes that consistently appeared throughout the data were organized into positive or negative experiences. There were 283 meaning units corresponding to positive codes. Four major positive themes were determined from the survey responses. The students described the positive aspects of team teaching as challenging learning (n=99), increasing the credibility of teachers (n=107), teams acting as nursing role models (n=28), and the promotion of thinking (n=49). The findings are presented below and illuminated with quotations from the surveys.

4.4.1.1 Challenging student learning

There were 99 codes allocated to the theme challenging student learning. Challenging student learning involved being exposed to different perspectives and learning from different teaching styles. Students indicated that being exposed to different perspectives allowed them to access valuable information from teachers. One student stated "I think that team teaching gave me a variety of different perspectives/areas of knowledge from the instructors that I would not have had otherwise" (Survey #15). The students valued the diversity of nursing opinions and embraced knowledge that came from teachers in various areas of nursing. One student added that "we can appreciate different perspectives from different instructors who come from different backgrounds" (Survey #40).

The students also mentioned that hearing different perspectives allowed them to analyze and develop alternative thinking. This enabled students to consider both the academic and the practical implications of course content. One student elaborated that "I think it's great to have different experts come in to teach, otherwise the course ends up in 'PhD land' where we only see one side of the story" (Survey #34). Alternative thinking was determined to be a positive aspect

of team teaching because it allowed students to think in a broad perspective and consider multiple possibilities before formulating their own opinions. Finally, the students shared their positive view of team teaching by emphasizing that it encouraged class discussions that enriched learning. This was summarized by one student as "it was great when the prof lecturing would defer to other profs in the room to add more richness to the material being presented" (Survey #44).

Along with hearing different perspectives, students' learning was also challenged by the various teaching styles of the teachers. Students viewed multiple teaching styles as a positive aspect of team teaching. They indicated that multiple teaching styles allowed students to connect their learning needs with the teaching style that best suited them. This was illustrated by one student: "I also find it more interesting to have a team of instructors teaching rather than one single lecturer, so if one teaching style doesn't work well for you, you still can learn from other teaching methods that fit you" (Survey #32). Similarly, another student said that multiple teaching styles were a benefit to learning by adding variety to the classroom. This student described team teaching as "helpful if/when you don't particularly like one professor's teaching style, provides the opportunity for variety" (Survey #45). A number of the other responses also asserted that even though students' learning needs were not always met by all of the teachers' teaching styles, the variety forced students to adapt to various ways content was presented to them. This enabled students to become more comfortable with different teaching styles. One student said that team teaching "made me more flexible towards different teaching styles and different ways information was presented" (Survey #24).

4.4.1.2 Increasing teacher credibility

There were 107 codes for the theme increasing teacher credibility. Increasing teacher credibility was described as learning from expert nurses, having access to learning resources, and connecting with teachers. Many students highlighted that learning from expert nurses was a strong positive aspect of team teaching. Team teaching enabled students to learn from specialized nurses with expert knowledge. The students valued knowledge that was coming from a teacher with comprehensive knowledge about a topic. One student stated, "I found we were able to learn a lot about each topic due to the individual expertise that the teachers brought" (Survey #13). This expert knowledge "helped facilitate learning" (Survey #14) and "enhance[d] the learning experience" (Survey #39). Similarly, another student identified that they would rather learn from a teacher who had expert practical knowledge than from someone who did not: "[I] value learning from an expert rather than a faculty member who doesn't have background in the area (i.e., faculty not in practice any more teaching about fractures who can't answer questions because doesn't have knowledge)" (Survey #7).

Aside from the increased knowledge from the teachers, other aspects of student learning were affected when students were taught by expert nurses. Having expert knowledge gave the team teachers more credibility, which made their teaching more powerful and reinforced course content. One student commented, "since every teacher taught their field of expertise, the message came across stronger and I would connect the lectures easier to the readings" (Survey #41). Additionally, the expert "teachers were better able to communicate their understanding of the topics" (Survey #2), which enhanced student understanding. Furthermore, students indicated that they appreciated being taught by teachers who were passionate about the content. They felt

that the teachers' passion got them interested in the subject matter and helped solidify their own learning. One student explained as follows:

> I did enjoy team teaching. It was nice to have a few different teachers because they all have different expertise—being in this team of teachers enabled them to shine and teach us what they were passionate about, which enabled a better experience. (Survey #47)

Along with learning from experts, teacher credibility was increased through the additional resources provided by multiple teachers. Specifically, the students said that having more teachers helped get questions and concerns addressed. One student indicated that it was "good to have another instructor available for difficult questions and problems" (Survey #35). The students also described feelings of being "more supported with 2-3 [team teaching] members" (Survey #23). One student characterized this support as having more access to help and a feeling that marks were justified. The student said that teachers "seemed more accessible being on a team, instead of just going to 1 of them, there were multiple ones, which made me feel more secure in my marks' justification and if I had a problem" (Survey #47). Another student added that teaching teams provided more opportunity for the students to receive current nursing information. One student said that a positive aspect of team teaching was "being able to ask questions to a person that had up to date experience and knowledge in a subject area" (Survey #18).

Furthermore, team teaching promoted student-teacher connections that enhanced the credibility of the teachers. Students said that the team setting encouraged a classroom environment centred on communication. This was expressed as "team teaching promotes good communication, open discussion with different viewpoints" (Survey # 46). The open

communication helped the students "relate to different instructors on different levels" (Survey #31) and allowed them "to know as many of the faculty as possible" (Survey #44).

4.4.1.3 Teams acting as nursing role models

There were 28 codes for the theme teams acting as nursing role models. Team teaching provided students with an opportunity to interact with positive nursing role models. Nursing role models were termed expert nurses who inspired and excited students about the nursing profession. Many students wrote that hearing nurses talk about their own nursing interests strengthened their desire to become nurses. One student said that team teaching "helped me to realize that everyone has a different passion and that to follow your passion and become an expert in whatever drives your interest is okay to do" (Survey #47). Another student mentioned that hearing nurses talk about their own nursing passions had a positive influence on their learning. This was because the passionate message delivered by the teachers became more convincing to the students. One student explained that teachers were "able to participate according to their strength and expertise, e.g. [an instructor's] part on ethics was very convincing because she is so passionate about it" (Survey #41).

Moreover, the teaching teams acted as nursing role models because they displayed the benefits of teamwork. The students commented on the positive aspects of teamwork within nursing. They appreciated the fact that teaching was done collaboratively and that teamwork was made more apparent to them because they saw it first-hand. One student wrote that team teaching "allowed me to discover that a team dedicated to doing a good job is much stronger that a single individual" (Survey #46).

4.4.1.4 Promotion of student learning

The student responses produced 49 codes for the theme promotion of student learning. Team teaching encouraged student learning. The students mentioned that the dynamic nature of team teaching kept them engaged and interested in what the teachers were saying. Lectures were "more vibrant" (Survey #11), and students "enjoyed the class engagement that team teaching brings" (Survey #39). Consistently the students described how they appreciated the teachers expressing their own perspectives and ideas. This engagement and enrichment promoted a positive learning environment. One student wrote that team teaching "enriched and brought different perspectives, opinions to the forefront" (Survey #1).

Table 4.2 Summary of major negative themes

Negative Themes	Codes	Indicators
Ineffective teaching	46	Lack of teaching integration between team teachers, ineffective delivery of content
Confusion	36	Students unable to get help, unclear expectations
Ineffective teams	19	Ineffective communication between teachers, lack of organization

4.4.2 Negative experience.

Although the survey responses favoured the positive aspects of team teaching, some negative themes were also apparent. There were 101 meaning units attached to negative codes. The students described how the team teaching strategy negatively impacted their own learning and how it shaped their perceptions of teamwork. Three major negative themes were determined

from the results: ineffective teaching (n=46), student confusion (n=36), and the ineffective functioning of the teaching teams (n=19).

4.4.2.1 Ineffective teaching

There were 46 codes for the theme ineffective teaching. Ineffective teaching was described as a lack of teaching integration between team members and the inability of teachers to deliver course content that encouraged student learning. The lack of teaching integration between team members challenged the students' ability to connect content presented from multiple teachers. This negatively impacted student learning. The students described classes as feeling "disjointed" (Survey #38), "fragmented" (Survey #42), and "less cohesive" (Survey #38). One student wrote that team teaching made it "difficult to integrate information because different instructors taught different lectures" (Survey #24). Students called for more consistency and continuity between teaching. The lack of continuity was apparent when some students mentioned that the teachers lacked knowledge about what information was covered by other teachers. This was a major concern as the students felt they either missed key content or received redundant information. One student wrote, "without having all the lecturers present sometimes material we 'should' know is missed because they each thought the other taught it. Conversely, sometimes info is repeated" (Survey #37).

Along with the lack of continuity, students also said that team teaching affected how the teachers delivered content. Particularly, students pointed to differences in teaching ability within the team. One student noted that "there was a wide range of skill level in lecturers—some were excellent, others were not" (Survey #30). Another student described this as "not everyone is able to teach effectively without some teaching training, so some guest speakers had difficulty

presenting information" (Survey #18). Some students felt that the difficulties teachers had in delivering content reflected the teachers' knowledge base and that "some professors were not as knowledgeable in lectures as they [thought]" (Survey #4).

4.4.2.2 Confusion

There were 36 codes allocated to the theme confusion. Confusion was defined as students being unable to get help when needed and teachers not establishing clear expectations. Students said that team teaching contributed to feelings of confusion and negatively influenced their learning. Many indicated that multiple teachers made it difficult to keep track of content that was taught. Some students described their team teaching experience as "confusing" (Survey #10), "hectic" (Survey #17), and "chaotic" (Survey #9).

One student attributed the confusion to the number of teachers involved in teaching a course and said that "it felt like we had 10 teachers for 1 class and it was really difficult to keep each class straight as a result!" (Survey #14). Other students pointed to the dynamics between the teachers as a reason for the confusion. This was expressed as "if there appears to be any disagreement between team members, this can be confusing for students" (Survey #17). Moreover, students described difficulties when trying to contact teachers with questions or concerns. A frustrated student wrote that "when I had a question or issue to bring up, I was not sure whom to address it to, and I was referred back and forth a couple of times" (Survey #20).

Along with the inability to get help when needed, team teaching promoted confusion when teachers did not establish clear expectations. The students wrote that teachers' expectations lacked consistency. This created a classroom environment where students felt unsure and lost. One student said that "sometimes expectations have been unclear or there

seemed to be more disorganization than the traditional 1 person system" (Survey #9). Specifically, students connected their feelings of confusion to unclear expectations surrounding exams and assignments. Many of the students expressed concern about how their marks would be affected by not having a clear understanding of the teachers' expectations. This was exemplified by one student's response: "I never really knew what to expect and the different expectation of all the different teachers and how they marked was hard. I never got a feel for who expected what and how a certain teacher liked things to be done" (Survey #47). Another student added that conflicting directions were given for assignments and exams: "at times conflicting instructions came from members of the 'teams' making it difficult to understand what was expected" (Survey #12).

4.4.2.3 Ineffective teams

The student responses revealed 19 codes for the negative theme of ineffective teams. Ineffective teams involved members not communicating effectively and teams lacking organizational structure. The students felt that communication was an essential component of successful team teaching but that it did not always happen. The students stressed the point that all team teachers should be present during all classes. One reason was to promote a teaching environment where information delivered to the students was not left out or repeated. One student explained that "without having all the lecturers present sometimes material we 'should' know is missed because they each thought the other taught it" (Survey #37). Another reason for having all team members present was for teachers to show support for the team teaching strategy. One student wrote, "I don't like when a member of the team comes in for a class or two and doesn't attend all the classes. I believe all members should be in class to participate in discussion, provide feedback to other team members and to show support" (Survey #46).

The teams' ineffectiveness was also attributed to the lack of team structure. Students commented that they felt team teaching was disorganized. They cited the lack of continuity and flow of teaching between teachers as evidence for the disorganization. The teams also appeared to lack leadership. This created an atmosphere where teachers were unsure of their roles and responsibilities. One student said that the team

> felt disorganized, and I felt there was no one person leading the class. As the course leader did not attend other presenters' lectures there were often gaps in our knowledge or overlap in lecture content and this was especially frustrating for exams (Survey #38).

Table 4.3 Summary of recommendations to improve team teaching

Team Teaching Recommendations	**Codes**	**Indicators**
Enhance team unity	25	Increasing communication between team members, delivering clear message to students
Mitigate the unexpected	19	Consistent learning objectives, consistent expectations for assignments and exams
Emphasize teacher credibility	10	Teachers teaching in area of expertise, small group learning

4.4.3 Students' recommendations for improving team teaching.

The survey responses also produced student recommendations on how to improve the delivery of team teaching in the future. There were 54 meaning units corresponding to recommendations for team teaching. Three major recommendation themes were identified from the data: enhance team unity (n=25), mitigate the unexpected (n=19), and emphasize teacher credibility (n=10).

4.4.3.1 Enhance team unity

There were 25 codes for the theme enhance team unity. The students felt that enhancing team unity would strengthen the team teaching strategy. Team unity was defined as effective communication between members to deliver a consistent and unified message to students. From the students' perspective, better communication could be facilitated by limiting the number of teachers and having all teachers present for all classes. Some of the students indicated that two teachers per class was the optimal number of teachers for team teaching. Additionally, having all of the teachers present in class would be a feasible way to limit the degree of repetition and knowledge gaps that the students experienced. One student said "I think the idea of team teaching works best when multiple members of the team are present in a single class at the same time (avoids repetition and facilitates conversations)" (Survey #11).

4.4.3.2 Mitigate the unexpected

The student responses produced 19 codes for the theme of mitigate the unexpected. Mitigating the unexpected refers to students' desire to have a sense of familiarity with the teaching they receive and to have a clear understanding of teacher expectations. Notably the students wanted to see an established teaching structure where the learning objectives would be similar for each teacher. Similar learning objectives would ensure that teaching between team members was complementary. Furthermore, the students wanted to see clear and consistent expectations for assignments, responses to questions, and class goals. This was exemplified in one student's recommendation: "make sure that each member of the team knows what the expectation is (i.e., in terms of assignments, course content, etc.)" (Survey #20).

4.4.3.3 Emphasize teacher credibility

There were 10 codes attributed to the theme of emphasize teacher credibility. Emphasizing teacher credibility was said to be a positive aspect of team teaching strategy, and emphasizing it was an additional student recommendation. Emphasizing teacher credibility involves incorporating teaching strategies that promote the expertise of the teachers. Specifically, the students wanted to continue to see teachers teaching in their areas of interests and strengths. This was summed up by one student as follows: "professors should be experts in lectures they teach" (Survey #4). Additionally, students wanted to see team teaching use small group learning as a complementary teaching strategy. Small group learning allows teachers to interact with students at a more personal level, thus improving the learning experience. This was suggested by one student: "maybe having more opportunities for the larger group breaking into smaller groups with interaction with instructors to get more face time/strengthen relationship with profs" (Survey #16).

4.5 Summary

This chapter described the research findings. Content analysis methodology was used to analyze the research data. Four positive themes and three negative themes regarding team teaching strategy were made apparent from the survey responses. Additionally, three student recommendations were identified to help improve team teaching in the future. A discussion of the findings is presented in chapter 5.

Chapter 5: Discussion

This chapter discusses the study's findings. The chapter presents the methodological considerations, the findings, and the implications of the research in the four domains of nursing: education, research, clinical practice, and administration. The chapter concludes with a summary of the research.

5.1 Methodological considerations

One study limitation was the imprecise wording of the survey questions. The goal of the first survey question was to capture the learning experiences of students enrolled in a team teaching curriculum. However, because the word "learning" was omitted from Q1, some of the students commented on team teaching organization instead of describing their learning experiences. This produced some data that was irrelevant to the research question. Q1, Q3, and Q4 also included imprecise wording. Because I was interested in the experiences of students throughout the nursing curriculum, it was intended that students comment on their team teaching experiences in any of the nursing courses taken in previous terms. However, Q1, Q3, and Q4 wrongly prompted the students to comment on their team teaching experiences "during the term." I feel that the wording may have caused students to comment only on their team teaching experiences in the term they were currently enrolled in, thus producing incomplete data. I chose to combat this omission from the surveys by verbally instructing the students that the research involved the collective team teaching experiences from the entire UBC SON curriculum. Most students who completed the survey were present during the verbal instruction, and I also fielded questions from students that clarified the wording of the survey. However, a small number of the students who completed the survey were not present during the talk and completed the survey

without this crucial information. This may have produced incomplete data and was deemed a study limitation.

Along with the imprecise wording in the survey questions, another limitation involved the analysis process. A text never implies one singular meaning but instead one possible meaning derived by an individual (Krippendorf, 2004). Hence, my findings should be viewed as my interpretation of the students' responses. To ensure credibility, during the analysis process coding data was reviewed by my thesis committee until consensus about the interpretation was achieved. However, a potential limitation in the analysis process was that the researcher and members of the thesis committee were educators at UBC SON and our own biases may have influenced us towards a more positive interpretation of the findings. Researcher biases threaten study confirmabilty and may influence findings. A great deal of reflection was done during the analysis process to minimize the influence of researcher biases, but completely eliminating our own biases as educators would be impossible, and therefore this is considered a study limitation.

5.2 Findings

Findings from the research offer new insights about team teaching and support current team teaching literature. The participants were third-term undergraduate nursing students with various educational backgrounds and demographic characteristics enrolled in an accelerated RN program at a large university. Because the program spans five terms, the students had experienced two terms of team teaching. The findings from the research should be interpreted as specific to the September 2009 UBC SON undergraduate class.

The research suggests three major findings. First, students supported team teaching as the main pedagogical teaching strategy in the UBC SON. Second, students viewed team

teaching as a positive influence on their learning. Third, students offered recommendations to improve the current delivery of team teaching within the UBC SON curriculum. The first two findings will be discussed below, and student recommendations will be discussed in the section "Implications for Nursing Education."

5.2.1 Students supported team teaching strategy.

The results from the study suggest that students generally supported the use of team teaching as the main pedagogical teaching strategy in the UBC SON. Responses to Q5—"Would you welcome additional courses to adopt a team teaching model? Why?"—overwhelmingly supported the use of team teaching. Of the 47 surveys returned, 37 indicated that "Yes" they would welcome team teaching, 6 indicated "No," 6 indicated "Not all courses," and 6 selected "Neutral" (Appendix C). The higher proportion of "Yes" responses leads me to believe that students supported the use of team teaching strategy and felt that the strategy had benefits for them as learners. Students supported the use of team teaching because they perceived it had a positive influence on their learning.

5.2.2 Students viewed team teaching positively.

The results from the research showed that students viewed team teaching positively. There were 283 positive codes from the data compared to 101 negative codes (Appendix C). The four positive themes that emerged were increasing teacher credibility, challenging student thinking, promoting student learning, and teams acting as nursing role models. Indicators that were used to describe the four positive themes consisted of the following: hearing different perspectives and viewpoints, promoting alternative thinking, learning from expert nurses, being provided with resources, inspiration and excitement about nursing, engaging learners, and

promoting interest. These positive themes and their descriptions were similar to findings from a descriptive research study by Wolf, Bender, Beitz, Wieland, and Vito (2004) that looked at the teaching qualities needed in strong teachers from the perspective of undergraduate nursing students. The study by Wolf et al. found that strong teaching attributes identified by nursing students were as follows: knowledgeable, strategic, professional, supportive, having scholarly traits, and creating positive learning environments. Thus, the team teaching strategy allowed the teachers to emphasize these strong teaching attributes which enhanced the learning experience of the students.

Understanding the findings in this research requires examination of several learning theories already mentioned in this paper; specifically, cognitive constructivism, social constructivism, and adult learning theory. These three learning theories are discussed below. Findings are explained in relation to the learning theories and are supported with current team teaching literature.

5.2.2.1 Challenging student learning

The students indicated that team teaching allowed them to challenge their thinking and enabled them to learn in different ways from the ways they were used to. The theme challenging student learning was described by the students as an area of team teaching that allowed them to hear different perspectives and viewpoints, learn from different teaching styles, and promote alternative thinking. These indicators are closely related to student learning through an emphasis on developing critical thinking and decision making skills. Critical thinking in nursing is described as encompassing both the affective and cognitive aspects of thinking that Scheffer and Rubenfeld (2000) referred to as the habits of mind and practising of cognitive skills. The habits

of mind included confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection, and the cognitive skills associated were analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting, and transforming information. Scheffer and Rubenfeld contend that critical thinking is a complex process. Elements of both the affective and the cognitive aspects of critical thinking are highlighted in the indicators derived from the challenging student thinking theme. Listening to the team teachers voice their different perspectives required the students to analyze the various viewpoints while keeping an open-minded attitude. Learning from new teaching styles meant that the students needed to be flexible with their learning and reflective on how alternative teaching affected their overall comprehension of the content presented. Finally, alternative thinking forced the students to incorporate the cognitive skills of predicting, transforming, and analyzing with the affective aspects of considering contextual perspective and relying on intuition when forming new knowledge.

Another explanation of why students embraced having their learning challenged is the emphasis on critical thinking within the nursing profession. The importance of critical thinking in nursing has been shown to be an essential component to professional accountability and quality nursing care (Scheffer & Rubenfeld, 2000). As a result, team teaching allowed the students to practice the process of developing complex thought that will prove to be a beneficial tool in the nursing profession. In practice, advanced cognitive skills are needed by nurses to navigate through the most difficult and complex clinical problems. Some of the qualities associated with the ability to think critically include reflective thinking, use of metacognitive strategies, and the application of the nursing process (Daly, 2001). Nursing students are aware of the importance of the development of cognitive skills needed to be a competent nurse, and they

expect nursing programs and teachers to challenge their thinking to increase their understanding and their confidence in their judgment skills (D'Antonio, Beal, Underwood, Ward, Mckelvey, Guthrie, & Lindell, 2010). The dialogue that occurred with having multiple teachers present in team teaching helped students reflect on their own understanding, thus improving the students' ability to think critically and to process information more comprehensively (Zygmont & Schaefer, 2006).

The relation between the advancement of critical thinking skills and the team teaching strategy was similar in other team teaching studies (Kruszewski, Brough, & Killeen, 2009; Kerridge, Kyle, & Marks-Maraan, 2009). Research by Kruszewski et al. found that team teaching enabled students to improve their abilities to acquire knowledge and to enhance their decision-making and critical thinking skills. This emphasis on the development of cognitive skills was perceived by the students to be a positive aspect of team teaching. Additionally, the team teaching literature supported the findings that the strategy promoted students hearing different teachers' perspectives (Kerridge, Kyle, & Marks-Maraan; Yellowly & Farmer, 2006; Anderson & Speck, 1998; Helms, Alvis, & Willis, 2005), learning from different teaching styles (Helms, Alvis, & Willis), and having more challenging lectures (Shepard & Ashley, 1979).

Understanding the various critical thinking indicators embedded within the theme challenging student learning is best accomplished with relevant teaching and learning theories. Findings show that students favoured listening to the multiple perspectives presented by the team teachers. Learning was accomplished in a complementary process of individual reflection and social interaction. Constructivist theory is applicable here. The process of learning described in constructivism helps with the education of nurses by improving critical thinking skills and encouraging rapid adaptation to changes in evidence-based practice (Brandon & All, 2010).

When the students heard new information presented by the team teachers, cognitive constructivism informs us that they underwent an internal process of analysis to make sense of the information (Piaget, 1972). The analysis process entails comparing new information to previously held knowledge organized into mental schemas. Either the new information is assimilated into what is already known or the schemas are accommodated or modified to fit the new information. Moreover, learning was also supplemented through the dialogue that occurred between the teachers and between the teachers and students. Social constructivism contends that social interaction is the basis for learning (Vygotsky, 1978). The zone of proximal development refers to the stage in learning where a learner is unable to learn independently but instead relies on the help of others to enhance their own understanding (Vygotsky, 1978). It is in this stage where learners determine what is known and not known. The team teachers challenged the students to practice out-of-the-box thinking and to consider alternative explanations of the concepts discussed in class.

The complementary process of learning that encompasses cognitive and social constructivism is best described with an analysis of contemporary constructivist views. While cognitive constructivism emphasizes the individual's ability to reason and diagnose their learning needs, social constructivism uses group interaction to accomplish the same task. However, the two processes of learning work hand in hand and cannot be viewed in isolation. Contemporary constructivism argues that learning involves the cognitive abilities of the individual supplemented by support from the individual's surroundings (Illeris, 2003). In other words, learning is a product of the individual's capacity to learn and is also shaped by their learning environment. In the case of team teaching, hearing multiple perspectives elicits critical reflection in which the learner looks back on past decisions and considers past experiences to

establish meaning. Critical reflection has been shown to be an important component of constructivist learning (Gordon, 2009). If the information heard fits with past schemas, it is then seamlessly assimilated into the learner's understanding. However, if the information is new or contradicts what is already known, the learner is provoked to consider alternative explanations. The promotion of alternative thinking was prompted by the varied knowledge, viewpoints, and opinions of the team teachers and added richness to lectures by encouraging a broader perspective. With this logic, the information cannot be assimilated or accommodated into the previous schemas and the zone of proximal development from social constructivism grows larger, meaning the learner requires additional help from others to establish understanding. Vygotsky (1978) argued that teaching, guidance, and encouragement are crucial for learners when they are in the zone of proximal development and that an active exchange of ideas through language is a way that learning happens. The role of the teacher in the team teaching arrangement is twofold: 1) to confirm previous understanding and 2) to facilitate deeper understanding by challenging students to think.

In addition to hearing multiple perspectives that promoted alternative thinking, the students enjoyed learning from the different teaching styles of the team teachers. Adult learning theory informs us that adult learners need to be active in the learning process, which entails deciding what teaching style works for them (Huang, 2002). There is an added impetus for adult learners to find a teaching style that suits their learning because adult learners enter formal learning environments with individual learning skills that can impede the learning process. Adult learners not only have academic knowledge from formal education but also practical knowledge learned in the workplace (Kenner & Weinerman, 2011). In addition, there may be a large gap in time from when an adult learner was previously enrolled in formal education, and

the practical skills learnt may not be helpful or consistent with teaching and learning principles in the academic setting. Kenner and Weinerman argued that adult learners need to be provided with new learning strategies that challenge ineffective learning habits. It is through this exposure to various learning strategies that learners begin to adapt or abandon ineffective strategies they used in the past. Team teaching allows learners to sample different ways information is presented, thus enhancing their ability to comprehend the content taught.

5.2.2.2 Increasing teacher credibility

The findings show that from the students' perspective the team teachers were more credible. The theme increasing teacher credibility was determined to include indicators such as students learning from expert nurses, teachers providing additional resources, and students connecting with the teachers. The students also mentioned that the teachers came across as more knowledgeable and that the content they delivered was received more favourably. The added depth of knowledge shown by the team teachers and extra student resources were similar in previous team teaching studies (Floyd, 1975). Further, another team teaching study supported current findings that students were able to learn from the teacher's expertise and experiences (Leon & Tai, 2004).

Why the findings show that students viewed the team teachers as having added credibility is best analyzed using current teaching and learning theories. The students showed a great deal of interest in learning from the expertise of the teachers. That is, the students used the practical experience and expert knowledge of the teachers to gain an in-depth understanding of the content presented. Cognitive constructivism describes this process as accommodation, in which deep understanding was formed through the expansion of the students' own knowledge base. Here,

team teaching allowed students to access information from nurses with specialized knowledge. Concurrently, social constructivism also tells us that learning from a skilled individual is needed in any learning environment. Vygotsky (1978) referred to this principle as the more knowledgeable other, where a more expert and competent individual teaches and guides the learner to establish comprehension.

Both cognitive and social constructivism theory assume that expert and knowledgeable educators are crucial in transferring knowledge from teacher to student. The teachers in team teaching acted as a primary source of information, which allowed the students to increase their cognitive learning. The students viewed the teaching teams as a means to grow their own knowledge base, and they valued having a teaching team that encompassed knowledge experts. Having credible teachers was a predominant positive theme identified by the students where they felt information was delivered from a reliable and reputable source.

Social constructivism also explains how the students felt connected with the team teachers. The basis of social constructivism is communication and connection with others (Vygotsky, 1978), which entails individuals using language and discussion to exchange information. Vygotsky argued that in any cooperative learning environment connecting and forming relationships is paramount. Having supportive relationships between teachers opens opportunities for the students to join in as teachers (Game & Metcalfe, 2009). Adult learners have been shown to have a strong desire for cooperation in the student-teacher relationship (Kenner & Weinerman, 2011). This assumes that individuals involved in group learning need to establish mutual trust and respect for the other people involved. Team teaching provided students with an environment that encouraged cooperation between both the team teachers and the teachers and learners. Here, the teachers used cooperation as a way to share their own

insights, perspectives, and thoughts, while the students were active participants in discussions. This created a safe learning space that promoted a dialogue community where individuals were able to voice opinions free from self-protection and self-consciousness (Game & Metcalfe).

In addition to the students learning from experts and connecting with teachers, the theme increasing teacher credibility shows that team teaching enhanced the availability of learning resources. The students shared that having multiple teachers within a course allowed them to access more people to help in their learning. The predominant areas in which students needed help were answering questions during class, issues regarding exams or papers, and questions about specific content. Adult learning theory points out that the ability of teachers to respond to student concerns shapes how well adult learners learn. As one of Knowles's (1984) four principles concerning adult learning asserts, adult learners are self-directed and autonomous. This includes adult learners identifying resources to help them achieve their own learning objectives. The additional teachers in team teaching provided an outlet for the adult learners to be self-directed and autonomous. Team teaching gave the students more opportunity to get issues resolved and gave them the flexibility to choose which teacher would be most helpful with their problems.

5.2.2.3 Teams acting as nursing role models

The nursing role models theme shows the motivational aspect of team teaching. Motivation is described as an individual's driving force to achieve a goal in order to satisfy a need or an expectation (Murphy, 2006). Motivation is essential in any learning environment. Indicators for the theme involved the team teachers' ability to inspire and excite the students about nursing and provide a means for the teachers to model teamwork within nursing. The

benefit of teamwork and collaboration were also found in previous team teaching literature (Olivet, 1997; Mc Donald & Walters, 2009; Puksa, 1999; Helms, Alvis, & Willis, 2005). Additionally, another study similarly noted the positive effect of professional role modeling in the team teaching strategy (Minardi & Riley, 1991).

Adult learning theory provides a framework for explaining how the students were inspired and excited about the nursing profession. The students spoke of the benefits of hearing the practical experiences and diverse areas of nursing that the team teachers brought into the classroom. This gave the students an opportunity to see the practical benefits associated with their learning. Adult learners are goal oriented and need to see relevance in what they are learning (Knowles, 1984). Specifically, education needs to be shown to enhance their professional career (Kenner & Weinerman, 2011) and give them the skills to acquire knowledge to solve relevant problems that they may encounter in the workplace (Huang, 2002). The team teachers supplemented content with experience from their own practice and provided examples of how information learnt in the classroom can translate to practical knowledge in the work setting. This made the information presented more powerful and kept the students interested in what they were learning.

The benefit of teamwork exhibited by the team teachers was also an indicator in the nursing role model theme. Teamwork in nursing is defined as a dynamic process with two or more health professionals with complementary backgrounds and skills that exert physical and mental effort to succeed in achieving a common goal (Xyrichis & Ream, 2008). The teachers collaboratively delivered content where teachers would comment specifically on their areas of expertise, which served as a positive aspect of team teaching. This complementary approach to teaching enhanced student understanding because it provided more detailed information about

the content being delivered. The teaching team would refer to one another on topics they were unfamiliar with, thus limiting situations where student questions could not be answered and providing a comprehensive view on the lecture topics. Social constructivism argues that cooperation and collaboration are essential components to learning (Vygotsky, 1978). The team teachers in this case used collaboration as a way to supplement their own teaching abilities, which enabled students to enhance their learning experience. Students took the collaborative approach to teaching as an opportunity to expand their own knowledge base by seeing content delivered with expert insight from multiple nursing professionals.

As well as enhancing learning, team teaching collaboration provided an example of teamwork as a core value in nursing. Nurses learn early in their careers the importance of teamwork and internalize it as a main value of the profession (Hall, 2005). Rafferty, Ball, and Aiken (2001) argued that teamwork within nursing directly correlates to increased job satisfaction, lower burnout rates, higher quality of patient care, and more confidence with decision making. Previous studies have documented that nursing students have been able to see the benefits of teamwork within the profession and have made the connection that teamwork will be expected in their future jobs (Feingold, Cobb, Givens, Arnold, Joslin, & Keller, 2008).

Learning the culture of a group refers to the socialization process (Ousey, 2009). During socialization, an individual assimilates cultural values, beliefs, principles, and skills of a particular cultural group (Fetzer, 2003). Specifically, professional socialization in nursing encompasses future nurses learning the skills, knowledge, and behaviours of the professional role they will soon enter, thus forming an occupational identity (Kelly & Ahern, 2009). Developing a self-concept as a professional nurse is a critical outcome of nursing programs and a responsibility of nurse educators (Ware, 2008). Following social constructivist theory, learning should be

regarded as a social process of interaction (Vygotsky, 1978). Raz and Fadlon (2005) add that professional learning should shift away from viewing leaners as cognitive models of information processing to an image of learners as social actors within specific socio-cultural settings. These authors go on to argue that a group's culture is best understood from the perspective of the group members. The team teachers helped in this socialization process of nursing by establishing and maintaining nursing culture and embracing teamwork as a core nursing value. Teachers acted as a source of cultural knowledge and shaped students' perceptions of nursing teamwork through their collaboration in the classroom setting.

5.2.2.4 Promotion of student learning

The theme promotion of student learning outlined the positive effect team teaching had on enhancing the students' understanding of the material covered in lectures. The indicators for the theme centre on the ability of the team teachers to engage and promote interest in the learners, which translated to greater understanding of the content taught. Previous team teaching studies similarly found that student engagement and interest were enhanced (Williams, Evans, & Metcalf, 2010; Minardi & Riley, 1991; Yellowly & Farmer, 2006; Anderson & Speck, 1998), and one study found that student understanding and self-efficacy were also strengthened after team teaching was implemented (Puksa, 1999).

The indicators of student engagement are best described in relation to constructivism and adult learning theory. Constructivism in its broad sense is an active process of learning where individuals construct meaning and transform understanding (Chikotas, 2008). Learning is enhanced when students are engaged in the process and information presented has personal relevance and interest to them (Connolly & Begg, 2006). Similar to constructivism, adult

learning theory argues that student interest is related to how an adult perceives a learning situation. Adult learners who are not motivated will not readily accept learning environments, and thus teaching should focus on the interest of the students (Huang, 2002). Likewise, adult learners learn best when material is presented to them in a real-life context. The dynamic nature of team teaching created a learning environment that encouraged student engagement and interest. As mentioned in the theme increasing teacher credibility, the basis for the interest and engagement the intrigued students showed was the expert body of knowledge the team teachers presented. The students viewed the experience and knowledge shared by the team teachers as being relevant and practical to their profession and therefore were engaged and interested in what the teachers had to say. Additionally, interest and engagement also centred on hearing multiple perspectives and viewpoints mentioned in the theme challenging student learning. This created a learning environment that contained variety and diversity and kept the students intrigued with what was occurring in the classroom.

Actively engaging and drawing student interest is the hallmark of student-centred learning (Schaefer & Zygmont, 2003). The newly devised UBC SON curriculum along with its team teaching strategy emphasized student-centred learning with the role of the teachers to motivate and actively engage students (Candella, Dalley, & Benzel-Lindley, 2006). The findings suggest that team teaching, as a student-centred learning strategy, was successful in actively involving students in their own learning.

5.3 Implications

5.3.1 Nursing education.

How is team teaching best used within classroom undergraduate nursing education? The research findings support the use of team teaching within undergraduate classroom nursing education and suggest that it has a positive influence on student learning. However, the implementation of team teaching does require care when planning to minimize potential negative aspects.

What is learned from this research is that team teaching works best when teachers have a high level of communication and cooperation. Keys to an effective and functioning team include having mutual respect, agreed and defined goals, and effective communication (Wilson, 2005). Team teaching specifically requires a high level of teamwork and communication, which entails team members being willing to compromise and to expose their strengths and weaknesses in an open forum (Yellowly & Farmer, 2006). Putting emphasis on communication ensures that teachers deliver a clear and consistent message to students to prevent confusion. When there is a lack of communication, team teaching fails. Students are left feeling helpless and confused when they receive conflicting messages from different teachers. Additionally, teacher cooperation plays a vital role in ensuring the most efficient utilization of team teaching. In other words, the teaching of one teacher affects the teaching of another. Students said a lack of continuity and integration between teachers corresponded to the students thinking that team teaching was ineffective. Finally, the motivation of the team is also an important factor in developing a teaching team. Benjamin (2000) found that the intension of a team plays an integral role in team dynamics and that voluntary teams worked more effectively than teams that were imposed. This

means that when teams of teachers are formed, a concerted effort should be made to find teachers who are committed to working in a team dynamic.

Three themes emerged from student recommendations to improve the delivery of team teaching in the UBC SON curriculum: increasing team unity, mitigating the unexpected, and emphasizing teacher credibility. The first two themes emphasize the need to have well-functioning teams that communicate regularly and deliver clear and unified messages to the students, while the last theme draws attention to the unique expertise of each individual team member and embraces the expansive knowledge that can be delivered to students with teachers from different backgrounds.

The following specific recommendations for enhancing the delivery of the team teaching model in the undergraduate UBC SON curriculum emerge from the findings:

1. Limit the number of team teachers to two or at most three
2. Appoint a lead teacher
3. Ensure that the teachers provide clear learner expectations when grading assignments and exams
4. Provide clear contact information for the teachers and designate which teacher to contact for what content
5. Include teachers with various expertise
6. Ensure continuity between teachers with the content that is delivered
7. Require all team teachers to be present for all classes

5.3.2 Research.

Findings from this study are restricted to a specific population of undergraduate nursing students enrolled in the September 2009 class at the UBC SON. Therefore, findings cannot be generalized to other populations. Further research would be needed that included a larger sample size and various settings before general conclusions about team teaching and the effect it has on student learning could be made.

Furthermore, the sample used in this research study included nursing students who were entering the third term in a five-term program. To gain a better understanding of the students' perceptions of team teaching, additional research would be needed to examine the students' experience with team teaching at different stages of their education. Research by Salamonson, Halcomb, Andrew, Peters, and Jackson (2010) showed that students' expectations of teachers differ as they progress through their nursing program.

5.3.3 Clinical practice.

In the clinical setting, the implications of research on team teaching could influence how clinical teaching is carried out. An exhaustive search of the literature showed no current research that examined the use of team teaching in the clinical education of nursing students, hence prompting a need to further investigate its effects. With the clinical setting becoming more complex and specialized, team teaching could prove to be an effective way to educate nursing students in clinical practice. Compared to the traditional one-teacher system that is seen in most clinical settings, employing multiple clinical instructors using a team-teaching strategy would provide students with a broader clinical experience and would thus promote the benefits to student learning mentioned in this research. In an exploratory study of first-year undergraduate

nursing students learning in the clinical workplace, it was found that supportive clinical teaching involved providing the students with opportunities to work with various nurses (Grealish & Ranse, 2009). The variety of nurses allowed the students to see examples of professionals who embodied the values of nursing and prompted the students to view these nurses as role models. This role modelling was shown to assist with learning as it helped the students align values and professional practice standards that were learnt in the classroom. Subsequently, team teaching could provide a connection between the theoretical knowledge taught in the classroom and the practical knowledge used in the clinical setting.

In addition to giving students a broader perspective of clinical nursing practice, team teaching can also enhance interdisciplinary collaboration. Interdisciplinary collaboration has been regarded as key to improving patient care (Reeves, 2008). While interdisciplinary team teaching has been shown to help health care students think with an interdisciplinary lens (Brooks, Fox, Okagbue-Reeves, & Lukomski, 2009) and to enhance interdisciplinary scholarship (Helms, Alvis, & Willis, 2005), there has been little written about the effects of team teaching on collaboration in the practice setting.

Similarly, there is a lack of evidence that characterizes the effect team teaching has on clinical performance. Preliminary findings on the effect team teaching has on the ability of nursing students to perform within the clinical setting have been found in laboratory teaching. In a study that looked at a collaborative teaching approach between medical and nursing students where students learnt how to perform clinical skills, it was found that the multi-professional teaching approach increased the self-reported confidence the students had in performing the skills (Tucker, Wakefield, Boggis, Lawson, Roberts, & Gooch, 2003). These findings suggest that there could be added benefit to applying team teaching strategies to clinical nursing

education, but further research would be needed that specifically examined the ramifications of using collaborative teaching strategy within the practice setting.

5.3.4 Administration.

The administrative implications from this research focus on the challenges of implementing team teaching strategy within the university setting. The findings suggested that students view team teaching as positive with an influential impact on student learning. However, this research examined only the students' perspective and not that of the teachers. Previous team teaching studies have pointed out the disadvantages for teachers, including additional planning, implementing, and meeting hours needed to coordinate a course (Leon & Tai, 2004; Minardi & Riley, 1991; Dumas, 1999). Furthermore, with the increased time demands placed on teachers there is little evidence to show whether the strategy is an economically efficient way to use teacher resources. McDaniel and Colarulli (1997) argued that any team teaching arrangement needs to consider the level of collaboration within the teaching team and the costs to the university associated with implementation. McDaniel and Colarulli proposed a theoretical model encompassing both interdisciplinary teamwork and financial responsibility, termed the dispersal team model. The dispersal team model incorporated a mixture of large group learning (where all team teachers are present) and small group learning (where only one teacher is present) that sought to control costs by limiting teacher participation during course delivery. However, this recommendation contradicts current research findings that students wished that all team teachers were present for lectures. Disagreements within the current team teaching literature regarding the preferred team teaching model coupled with little research that examines the cost effectiveness of the strategy signals an area that requires further observation. Having multiple teachers for courses may be an additional expense for the university, and therefore any decision

to implement team teaching within a nursing program needs to examine both the costs and the benefits of employing such a strategy.

5.4 Summary of research

The purpose of this research was to investigate the learning experiences of students enrolled in a team teaching curriculum. The results from this research are aimed to inform current team teaching literature and offer suggestions to improve the delivery of team teaching strategy within the newly revised undergraduate nursing program at the UBC SON. Constructivist learning theory was used as a framework to guide the study.

Sampling was done through non-randomized convenience sampling and included 49 undergraduate nursing students enrolled in term three out of five of an accelerated program. The UBC SON curriculum has currently adopted team teaching as its main pedagogical teaching strategy in its newly revised curriculum. Students completed a six-question survey that examined the students' learning experience, positive and negative perceptions of team teaching, and recommendations for future delivery in the UBC SON curriculum.

This study provided support to current team teaching literature and offered new insights for nursing education. Content analysis was used to analyze the data. Findings suggest that students endorsed the use of team teaching and found positive benefits to its implementation in classroom learning. There were 283 positive codes and 101 negative codes associated with team teaching. The positive themes identified include increasing teacher credibility (n=107), challenging student thinking (n=99), promotion of student learning (n=49), and teachers acting as nursing role models (n=28). Negative themes were described as ineffective teaching (n=46), student confusion (n=36), and ineffective teams (n=19). Additionally, three student

recommendations from 54 codes were found that could improve the future delivery of team teaching within the UBC SON curriculum. These recommendations were described as enhance team unity (n=25), mitigate the unexpected (n=19), and emphasize teacher credibility (n=10).

Although generalizations of the findings cannot be made due to the small convenience sample, implications from this research have an impact on nursing education. Understanding the positive experiences of students enrolled in a team teaching curriculum is best understood with relevant teaching and learning theory; specifically, cognitive and social constructivism and adult learning theory. The positive benefits and student recommendations produced seven recommendations to improve the future delivery of team teaching within the UBC SON curriculum. The recommendations focus on improving communication between the team teachers and between the teachers and students. Moreover, students also wished to see consistent learning objectives and teaching between the teachers. Future research should replicate the study in multiple settings with a larger sample size before conclusions about team teaching can be made. Additionally, it is recommended that student experience with team teaching should be examined at different stages of their nursing programs. Other implications from this research focus on the remaining domains of nursing: research, clinical practice, and administration.

References

Anderson, R. S., & Speck, B. W. (1998). "Oh what a difference a team makes": Why team teaching makes a difference. *Teaching and Teacher Education, 14*(7), 671-686.

Barth, M. M. (2008). Deciphering student evaluations of teaching: A factor analysis approach. *Journal of Education for Business, September/October*, 40-45.

Bevis, E. O., & Watson, J. (2000). *Toward a caring curriculum: A new pedagogy for nursing.* Boston: Jones & Bartlett.

Benjamin, J. (2000). The scholarship of teaching in teams: What does it look like in practice? *Higher Education Research & Development, 19*(2), 191-202.

Brandon, A. F., & All, A. C. (2010). Constructivism theory analysis and application to curricula. *Nursing Education Perspectives, 31*(2), 89-92.

Brookfield, S. D. (2006). *The skillful teacher: On techniques, trust, and responsiveness in the classroom* (2nd ed.). San Francisco: Jossey-Bass.

Brooks, J., Fox, D. P., Okagbue-Reaves, J., & Lukomski, A. (2009). Best practices for an interdisciplinary team-taught course. *Educational Gerontology, 35*, 818-830.

Bryant, J., Copeland, G., Rockwell S. C., Love, C., Maxwell, M., Owens, J., & Wood, C. (1990). TI-IN United Star Network evaluation report. Tuscaloosa, AL: Institute for Communication Research.

Candella, L., Dalley, K., & Benzel-Lindlay, J. (2006). A case for learning-centered curricula. *Journal of Nursing Education, 45*(2), 59-66.

Chikotas, N. E. (2008). Supporting the use of problem-based learning in the education of nurse practitioners. *Nursing Education Perspectives, 29*(6), 359-362.

Cohen, S., & Dennick, R. (2009). Applying learning theory in the consultation. *The Clinical Teacher, 6,* 117-121.

Connolly, T. M., & Begg, C. E. (2006). A constructivist-based approach to teaching database analysis and design. *Journal of Information Systems Education, 17*(1), 43-45.

Conti, G. (1979). Principles of adult learning scale: An instrument for measuring teacher behavior related to the collaborative teaching-learning mode. *Dissertation Abstracts International, 39*, 7111A.

Cowman, S. (1996). Student evaluation: A performance indicator of quality in nurse education. *Journal of Advanced Nursing, 24*, 625-632.

Craig, J. V., & Smyth, R. L. (2007). The evidence-based practice manual for nurses (2nd ed.). Toronto: Churchill Livingstone.

Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* London: Sage.

Daly, W. M. (2001). The development of an alternative method in the assessment of critical thinking as an outcome of nursing education. *Journal of Advanced Nursing, 36*(1), 120-130.

D'Antonio, P., Beal, M. W., Underwood, P. W., Ward, F. R., McKelvey, M., Guthrie, B., & Lindell, D. (2010). Great expectations: Points of congruencies and discrepancies between incoming accelerated second-degree nursing students and faculty. *Journal of Nursing Education, 49*(12), 713-717.

Dempsey, P. A., & Dempsey, A. D. (2000). *Using nursing research: Process, critical evaluation, and utilization* (5th ed.). Baltimore: Lippincott.

DeYoung, S. (2009). *Teaching strategies for nurse educators* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Duckworth, E. (2006). *"The having of wonderful ideas" and other essays of teaching and learning* (3rd ed.). New York: Teachers College Press.

Dumas, L. (1999). Quality perinatal nursing education through coteaching. *Journal of Perinatal Education, 8*(4), 27-35.

Dumbrajs, S. (2007). Learning in a team of teachers. *International Journal of Learning, 14*(1), 65-74.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115.

Feingold, C. E., Cobb, M. D., Givens, R. H., Arnold, J. A., Joslin, S., & Keller, J. L. (2008). Student perceptions of team learning in nursing education. *Journal of Nursing Education, 47*(5), 214-222.

Fetzer, S. J. (2003). Professionalism of associate degree nurses: The role of self-actualization. *Nursing Educational Perspectives, 24*, 139-143.

Floyd, G.J. (1975). Team teaching: Advantages and disadvantages to the student. *Nursing Research, 24* (1), 52-56.

Forbes, M. O., & Hickey, M. T. (2009). Curriculum reform in baccalaureate nursing education: Review of the literature. *International Journal of Nursing Scholarship, 6*(1), 1-16.

Game, A., & Metcalfe, A. (2009). Dialogue and team teaching. *Higher Education Research and Development, 28*(1), 45-57.

Garrard, J. (2007). *Health sciences literature review made easy: The matrix method*. Toronto: Jones and Bartlett Publishers.

Gordon, M. (2009). Toward a pragmatic discourse of constructivism: Reflections on lessons from practice. *Educational Studies, 45,* 39-58.

Goudreau, J., Pepin, J., Dubois, S., Boyer, L., Larue, C., & Legault, A. (2009). A second generation of the competency-based approach. *International Journal of Nursing Education Scholarship, 6*(1).

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today, 24*, 105-112.

Grealish, L., & Ranse, K. (2009). An exploratory study of first year nursing students' learning in the clinical workplace. *Contemporary Nurse, 33*(1), 80-92.

Hall, P. (2005). Interprofessional teamwork: Professional cultures as barriers. *Journal of Interpersonal Care, 1,* 188-196.

Helms, M. M., Alvis, J. M., & Willis, M. (2005). Planning and implementing shared teaching: An MBA team-teaching case study. *Journal of Education for Business,* 81(1), 29-34.

Horsley, J. A., Crane, J., & Bingle, J. (1978). Research utilization as an organization process. *Journal of Nursing Administration, 8*(3), 4-6.

Huang, H. M. (2002). Toward constructivism for adult learners in online learning environments. *British Journal of Educational Technology, 33*(1), 27-37.

Hunter, J. L., & Krantz, S. (2010). Constructivism in cultural competence education. *Journal of Nursing Education, 49*(4), 207-214.

Illeris, K. (2003). Towards a contemporary and comprehensive theory of learning. *International Journal of Lifelong Learning, 22*(4), 396-406.

Iwasiw, C., Goldenberg, D., & Andrusyszyn, M.A. (2009). *Curriculum development in nursing education* (2nd ed.). Toronto: Jones & Bartlett.

Kelly, J., & Ahern, K. (2009). Preparing nurses for practice: A phenomenological study of the new graduate in Australia. *Journal of Clinical Nursing, 18,* 910-918.

Kenner, C., Weinerman, J. (2011). Adult learning theory: Applications to non-traditional college students. *Journal of College Reading and Learning, 41*(2), 87-96.

Kerridge, J., Kyle, G., & Marks-Maran, D. (2009). Evaluation of the use of team teaching for delivering sensitive content—A pilot study. *Journal of Further and Higher Education, 33*(2), 93-103.

Killeen, M. B. (2005). Evidence-based practice competency: Self-evaluation of BSN students. Paper presented at the Sigma Theta Tau International 38th Biennial Convention Scientific Sessions, Indianapolis, IN.

King, L, & Fraser, D. (2005). Who is learning what from student evaluations of teaching? *Waikato Journal of Education, 11*(2), 101-111.

Knowles, M. S. (1984). *Andragogy in action.* San Francisco: Jossey-Bass.

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology.* Newbury Park, CA: Sage.

Kruszewski, A., Brough, E., & Kileen, M., B. (2009). Collaborative strategies for teaching evidence-based practice in accelerated second-degree programs. *Journal of Nursing Education, 48*(6), 340-342.

Larue, C. (2008). Group learning strategies for nursing students: Reflections on the tutor role. *International Journal of Nursing Education and Scholarship, 5*(1), 1-9.

Leon, L. A., & Tai, L. S. (2004). Implementing cooperative learning in a team-teaching environment. *Journal of Education for Business, 79* (5), 287-293.

Lewis, S., Rogers, M., & Naef, R. (2006). Caring human science philosophy in nursing education: Beyond the curriculum revolution. *International Journal for Human Caring, 10*(4), 31-37.

Loiselle, C. G., & Profetto-McGrath, J. (2007). *Canadian essentials of nursing research* (2nd ed.). New York: Lippincott Williams and Wilkins.

LoBiondo-Wood, G., Haber, J., Cameron, C., & Singh, M.D. (2009). *Nursing research in Canada: Methods and critical appraisal for evidence-based practice.* Toronto: Mosby.

Lowenbraun, S., & Nolen, S. B. (1998). Implementing a change in a research university: Constructivist team teaching in a general education teacher education program. *Teacher Education and Special Education, 21*(1), 34-46.

Mann, K. V., McFetridge-Durdle, J., Martin-Misener, R., Clovis, J., Rowe, R., Beanlands, H., & Sarria, M. (2009). Interprofessional education for students of the health professions: The "seamless care" model. *Journal of Interprofessional Care, 23*(3), 224-233.

Marsh, H. W., & Roche, L. (1993). The use of students' evaluations and an individually structured intervention to enhance university teaching effectiveness. *American Educational Research Journal, 30*(1), 217-251.

McDaniel, E. A., & Colarulli, G. C. (1997). Collaborative teaching in the face of productivity concerns: The dispersed team model. *Innovative Higher Education, 22*(1), 19-36.

McDonald, L. J., & Walters, K. (2009). Collaborative teaching in a virtual environment to promote conceptual change for nurse educator master's students. *Nursing Education Perspectives, 30*(6), 381-383.

Minardi, H. A., & Riley, M. J. (1991). The use of team teaching for communication skills training in nurse education. *Nurse Education Today, 11*, 57-64.

Murphy, F. (2006). Motivation in nurse education practice: A case study approach. *British Journal of Nursing, 15*(20), 1132-1135.

Olivet, L. W., & Jones, T. C. (1997). Collaborative Teaching: A strategy for interactive telecourses. *Nurse Educator, 22*(1), 6-8.

Ousey, K. (2009). Socialization of student nurses - the role of the mentor. *Learning in Health and Social Care, 8*(3), 175-184.

Peters, M. (2000). Does constructivist epistemology have a place in nursing education? *Journal of Nursing Education, 39*(4), 166-172.

Piaget, J. (1972). *The psychology of the child.* New York: Basic Books.

Powell, K. C., & Kalina, C. J. (2009). Cognitive and social constructivism: Developing tools for an effective classroom. *Education, 130*(2), 241-250.

Puksa, M. A. (1999). *Nursing students' perceptions of teachers' collaborative teaching style and self-efficacy for collaborative learning* (Master's thesis). Ottawa: National Library of Canada.

QSR International. (2010). NVivo qualitative data analysis software (Version 9) [Software]. Available from: http://www.qsrinternational.com/products_nvivo.aspx

Rafferty, A. M., Ball, J., & Aiken, L. H. (2001). Are teamwork and professional autonomy compatible, and do they result in improved hospital care? *Quality in Health Care, 10*, 32-37.

Raz, A. E., & Fadlon, J. (2005). Managerial culture, workplace culture and situated curricula in organizational learning. *Organizational Studies, 27*(2), 165-182.

Reeves, S. (2008). Planning and implementing a collaborative clinical placement for medical, nursing, and allied health students: A qualitative study. *Medical Teacher, 30,* 699-704.

Richardson, V. (2003). Constructivist pedagogy. *Teachers College Record, 105*(9), 1623-1640.

Robinson, B., & Schaible, R.M. (1995). Collaborative teaching: Reaping the benefits. *College Teaching, 43*(2), 57-60.

Salamonson, Y., Halcomb, E. J., Andrew, S., Peters, K., & Jackson, D. (2010). A comparative study of assessment grading and nursing students' perceptions of quality in sessional and tenured teachers. *Journal of Nursing Scholarship, 42*(4), 423-429.

Sandelowski, M. (1995). Qualitative analysis: What it is and how to begin. *Research in Nursing & Health, 18*(4), 371-375.

Schaefer, K. M., & Zygmont, D. (2003). Analyzing the teaching style of nursing faculty: Does it promote a student-centered or teacher-centered learning environment? *Nursing Education Perspectives, 24*(5), 238-245.

Scheffer, B. K., & Rubenfeld, M. G. (2000). A consensus statement on critical thinking in nursing. *Journal of Nursing Education, 39*(8), 352-359.

Shephard, R. J., & Ashley, M. J. (1979). Attitudes of health science students towards teaching practices, examinations, and other related issues. *Medical Education, 13,* 111-116.

Singleton, E. (2009). From command to constructivism: Canadian secondary school physical education curriculum teaching games for understanding. *Curriculum Inquiry, 39*(2), 321-342.

Stichler, J. (1989). Development and psychometric testing of a collaborative behavior scale. Unpublished manuscript, University of San Diego, Philip Y. Hahn School of Nursing.

Tucker, K., Wakefield, A., Boggis, C., Lawson, M., Roberts, T., & Gooch, J. (2003). Learning together: Clinical skills teaching for medical and nursing students. *Medical Education, 37*, 630-637.

Tyler, R. (1949). *Basic principles of curriculum and instruction.* Chicago: University of Chicago Press.

University of British Columbia School of Nursing Website (2010). Academic unit plan 2010. Retrieved from http://www.nursing.ubc.ca/AboutUs/documents/Academic%20Unit%20Plan%202010.pdf

University of British Columbia School of Nursing Website (2010). BSN program-prospective students. Retrieved from http://www.nursing.ubc.ca/Undergrad/ProspectiveStudents.aspx

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wang, D. (2010). Team teaching and the application in the course English Teaching Methodology by CET and NSET in China. *English Language Teaching*, 3(1), 87-90.

Ware, S.M. (2008). Developing a self-concept of nurse in baccalaureate nursing students. *International Journal of Nursing Education and Scholarship, 5*(1), 1-18.

Williams, J. B., Evans, C., & Metcalf, D. (2010). Team teaching: A collaborative approach to effective online instruction. *National Teacher Education Journal, 3*(3), 33-38.

Wolf, R. Z., Bender, P. J., Beitz, J. M., Wieland, D. M., & Vito, K. O. (2004). Strengths and weaknesses of faculty teaching performance reported by undergraduate and graduate nursing students: A descriptive study. *Journal of Professional Nursing, 20*(2), 118-128.

Xyrichis, A., & Ream, E. (2008). Teamwork: A concept analysis. *Journal of Advanced Nursing, 61*(2), 232-241.

Yellowly, W., & Farmer, M. (2006). Team teaching in higher education. *International Journal of Learning, 12*(6), 85-89.

Zwarenstein, M., & Reeves, S. (2006). Knowledge translation and interprofessional collaboration: Where the rubber evidence-based care hits the road of teamwork. *Journal of Continuing Education in the Health Professions, 26*(1), 46-54.

Zygmont, D. M., & Schaefer, K. M. (2006). Assessing the critical thinking skills of faculty: What do the findings mean for nursing education? *Nursing Education Perspectives, 27*(5), 260-268.

Appendices

Appendix A: Team Teaching Survey

What was your experience with team teaching during the term?

In what way did team teaching influence your learning?

What positive aspects of team teaching did you experience during the term?

What negative aspects of team teaching did you experience during the term?

Would you welcome additional undergraduate nursing courses to adopt a team teaching model? Why?

What suggestions do you have to improve team teaching in the future?

Appendix B: Data Coding

Q1 What was your experience with team teaching this term?

Table 1: Question 1 Theme 1: Positive Experience

Question 1 Theme 1: Positive Experience **Definition: Strong positive feelings toward team teaching**			
Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
Good to have different perspectives from several professors (Survey #19).	Heard different perspectives (12)	Heard different perspectives (12)	Students exposed to various nursing perspectives, opinions, and knowledge bases
It was good way of getting out a range of information to the students from a unified but diverse perspective (Survey #21).			
Different speakers had different backgrounds / interest which made the material more interesting because of the diverse instructors (Survey #24).			
I enjoyed having different lecturers (Survey #32).			
I think it's great to have different experts come in to teach, otherwise the course ends up in "PhD land" where we only see one side of the story (Survey #34).			
I enjoyed the different perspectives (Survey #38).			
It definitely was interesting to learn from different faculty's expertise and knowledge (Survey #39).			

Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
Brought different aspects and angles to the class (Survey #41).	Heard different perspectives (12)	Heard different perspectives (12)	Students exposed to various nursing perspectives, opinions, and knowledge bases
Multiple instructors talked on the same day and where different speakers talked throughout the course (Survey #43).			
It was great when the prof lecturing would defer to other profs in the room to add more richness to the material being presented (Survey #44).			
Team teaching promotes…open discussion with different viewpoints (Survey #46).			
I really enjoyed having a diversity of teachers and backgrounds (Survey #7).			
I found it enhanced courses learning from different instructors and their specialties (Survey #27).	Enhanced learning (5)	Enhanced learning (11)	Ability to learn new knowledge
I did learn more with team teaching than with just one faculty teaching (Survey #39).			
It added to my learning (Survey #21).			
Hav[ing] another teacher to be in the background will enhance the learning experience (Survey #40).			
Provides good knowledge and variety in presentation to keep interested (Survey #7).			
Overall, team teaching is good b/c greater breadth of knowledge (Survey # 4).	Greater knowledge (5)		

Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
If all team members had a great depth of knowledge, experience was very positive (Survey # 4).	Greater knowledge (5)	Enhanced learning (11)	Ability to learn new knowledge
If all team members had a great depth of knowledge, experience was very positive (Survey # 4).			
It was nice to have the opportunity to learn from a number of well-educated nurses (Survey # 6).			
Provides good knowledge (Survey # 7).			
It was also nice to have a variety of different teachers because each teacher has a different way of teaching-which caters more to everyone's individual style of learning (Survey #47).			
It added to my learning (Survey #21).	Enhanced understanding (1)		
We get to hear from individuals who are experts in their areas (Survey #13).	Learned From experts (7)	Learned from experts (7)	Students valued hearing information from expert nurses
I found it enhanced courses learning from different instructors and their specialties (Survey #27).			
Teachers taught areas that they were most knowledgeable (Survey #28).			
I think it's great to have different experts come in to teach (Survey #34).			
It definitely was interesting to learn from different faculty's expertise and knowledge (Survey #39).			

Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
I did enjoy team teaching. It was nice to have a few different teachers because they all have different expertise- being in this team of teachers enabled them to shine and teach us what they were passionate about- which enabled a better experience (Survey #47).	Learned From experts (7)	Learned from experts (7)	Students valued hearing information from expert nurses
I really enjoyed having a diversity of teachers and backgrounds and having "experts" as guest lectures- provides good knowledge (Survey #7).			
I liked it because it made the class more diverse (Survey #41).	Diversity (1)	Promoted Interest (7)	Students engaged and motivated to learn
Interactive (Survey #41).	Interactive (1)		
Team teaching made the information being taught more interesting- (Survey #24).	Interesting (5)		
It definitely was interesting to learn from different faculty's expertise and knowledge (Survey #39).			
More interested in seeing two more instructors than one (Survey #40).			
Provides good knowledge and variety in presentation to keep interested (Survey #7).			
Team teaching…reduces monotony. (Survey #46).			

Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
Positive (Survey #10).	Positive (13)	Positive experience (17)	Students indicated they enjoyed team teaching
Overall my experience was positive (Survey #2).			
Overall it was a very positive experience (Survey #20).			
Positive (Survey #27).			
Overall I had a positive experiences with team teaching throughout the term (Survey #28).			
It was generally positive (Survey #30).			
I thought it worked out well for the term (Survey #31).			
Overall, it was a positive experience (Survey #39).			
Overall, team teaching is good (Survey #4).			
I liked it (Survey #41).			
Very positive (Survey #43).			
I liked it (Survey #44).			
I did enjoy team teaching (Survey #47).			
Good (Survey #6).	Good experience (3)		
Overall, my experience with team teaching was good (Survey #15).			
Good experience! (Survey #45).			
I thought it worked out well for the term (Survey #31).	Worked Well (1)		

Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
It's nice to have different teaching styles (Survey #31).	Different teaching styles (5)	Different teaching styles (5)	Content was presented in various formats and teaching styles that added variety to learning
I enjoyed having different lecturers and a variety of teaching styles present (Survey #32).			
Overall, team teaching is good b/c greater…variety with teaching styles (Survey #4).			
Every teacher had a different teaching style and brought different aspects and angles to the class (Survey #41).			
It was also nice to have a variety of different teachers because each teacher has a different way of teaching- which caters more to everyones individual style of learning. If I didn't really like one teachers way of teaching- there was always another one who I might have found better to understand. I enjoyed it (Survey #47).			
Worked well as instructors took efforts to mark exams/ projects together (Survey # 12).	Collaboration (5)	Promoted teamwork (5)	Teams modeled teamwork
Courses did a good job of teaching as a team (Survey # 16).			
Most classes had teams working together (Survey # 37).			
Parts of the team need to be equally excellent while complementing each other for it to be successful (Survey # 46).			

Meaning Units	Codes (# codes)	Categories (# codes/category)	Operational Definitions
Instructors seemed to be well-connected to one another and communicated on behalf of the team (eg. Emails signed from both instructors). When the instructors seem to have one voice and do not share conflicting information it is successful (Survey # 42).	Collaboration (5)	Promoted teamwork (5)	Teams modeled teamwork
I did feel more supported by the perspectives of the different professors (Survey # 22).	Felt supported (1)	Promoted connection (3)	Students felt more connected and had stronger teacher-student relationships
Team teaching promotes good communication, open discussion with different viewpoints (Survey # 46).	Open communication (1)		
As we got into later classes, I didn't mind "team teaching" as much because there were fewer teachers (Survey #14).	Limit number of teachers (1)		
I have found that they are really able to field questions well (Survey # 13).	Answered questions (1)	Provided resources (2)	Ability of students to get questions and concerns addressed
Instructions in class were clear and both teachers attended together so lots of opportunity to clarify things (Survey # 12).	Clarification (1)		

Table 2: Question 1 Theme 2: Observation of Team Teaching Organization

Question 1 Theme 2: Observation of Team Teaching Organization **Definition: Students comments on how team teaching was structured within nursing curriculum**			
Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
Courses where multiple instructors talked on the same day (Survey #43).	All teachers present (4)	Team teaching structure (8)	Organization of how teams planned to teach
Both teachers attended together so lots of opportunity to clarify things (Survey #12).			
The team was usually present at each lecture and everyone was on the same page (Survey #21)			
Most classes had teams working together (Survey #37). *added			
Team took turns (Survey #37).	Teachers took turns (2)		
Different speakers talked throughout the course (Survey #43).			
Had group of three instructors co-lead course (Survey #25).	Multiple leaders (1)		
Most of the time one teacher is leader the lecture, and other teachers can express their views only (Survey #3).	Team leader (1)		

Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
There is lots of team teaching in nursing-particularly in the thread courses (Survey #1).	Thread courses (6)	Examples of team teaching (6)	Courses where students observed team teaching
During this class (Survey #11).			
I think the thread courses did a good job of teaching as a team (Survey #16).			
This term, team teaching happened through thread courses (Survey #18).			
Multiple classes- especially the thread courses (Survey #33).			
3 classes- thread classes with teaching team (N338, N339, N340) (Survey #36).			

Table 3: Question 1 Theme 3: Negative Experience

Question 1 Theme 3: Negative Experience **Definition: Strong negative feelings towards team teaching**			
Meanings Units	**Codes (# codes)**	**Category (# codes/ category)**	**Operational Definition**
If there appears to be any disagreement between team members, this can be confusing for students (Survey #17).	Confusion (1)	Confusion (6)	Feelings of being unsure, confused, and lost
It felt like we had 10 teachers for 1 class and it was really difficult to keep each class straight as a result! (Survey #14).	Difficult to keep straight (1)		
Sometimes one doesn't know who to email (Survey #30).	Unclear who to contact (1)		
Sometimes expectations have been unclear or there seemed to be more disorganization than the traditional 1 person system (Survey #9).	Unclear expectation (1)		
Inconsistencies in level of depth and teaching styles were evident (Survey #28).	Different teaching styles (1)		
Initially I did not enjoy team teaching because it felt like we had 10 teachers for 1 class and it was really difficult to keep each class straight as a result! (Survey #14).	Too many teachers (1)		

Meanings Units	**Codes (# codes)**	**Category (# codes/ category)**	**Operational Definition**
There seemed to be more disorganization than the traditional 1 person system (Survey #9).	Disorganized (1)	Disorganized (3)	Feelings of being disorganized, chaotic, and hectic
At times it got a bit hectic trying to determine who was teaching what content (Survey #17).	Hectic (1)		
I honestly have found team teaching to be somewhat chaotic (Survey #9).	Chaotic (1)		
Inconsistencies in level of depth and teaching styles were evident (Survey #28).	Difference in teacher knowledge (2)	Inability to effectively deliver content (5)	Students were unable to effectively acquire knowledge
Some professors were not as knowledgeable on lectures as they taught (Survey #4).			
Some teams have a lot of overlap of info within 1 course (Survey #8).	Information overlap (1)		
It just felt like two courses spliced together (Survey #12).	Disconnected (2)		
The overriding factor was that N340 was so disconnected (Survey #26).			

Table 4: Q1 Theme 4: Neutral Experience

Question 1 Theme 4: Neutral Experience **Definition: No strong positive or negative feelings toward team teaching**			
Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
The overriding factor was that N340 was so disconnected that it was hard to perceive any positive/negative impact of team teaching (Survey #26).	No positives or egatives (1)	Neutral (4)	No strong positive or negative feelings towards team teaching
Didn't really notice the effects of it as compared to classes that I've taken in my first degree (Survey #29).	No noticeable effects (1)		
I am neutral (Survey #5).	Neutral (1)		
Little experience (1:1) (Survey #	Little experience (1)		
Initially I did not enjoy team teaching because it felt like we had 10 teachers for 1 class and it was really difficult to keep each class straight as a result! As we got into later classes, I didn't mind "team teaching" as much because there were fewer teachers (Survey #14).	Fluctuating effectiveness (4)	Fluctuating effectiveness (4)	Effectiveness of team teaching would change
At times it worked very well, and at times it got a bit hectic (Survey #17).			
Some were great, some were not (Survey #23).			
I think the thread courses did a good job of teaching as a team, in smaller core courses it felt less fluid and team-like; more disjointed and task splitting (Survey #16).			

Q2. In what way did team teaching influence your learning?

Table 5: Question 2 Theme 1: Challenging Student Thinking

Question 2 Theme 1: Challenging Student Learning **Definition: Student learning was challenged through the exposure to different nursing perspectives, teaching styles and alternative thinking**			
Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Enriched and brought different perspectives, opinions to the forefront (Survey #1).	Different perspectives (19)	Exposed to different viewpoints (21)	Content was presented to the students with various nursing perspectives
I think that team teaching gave me a variety of different perspectives/ areas of knowledge from the instructors that I would not have had otherwise (Survey #15).			
Provided a variety of ideas perspectives to think about (Survey #16).			
Provided different perspectives on concepts and issues (Survey #17).			
Help me to hear different perspectives and can approach few people (Survey #19).			
It provided a diverse set of perspectives and various ways of thinking about things (Survey #21).			
Different perspective on subjects (Survey #22).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Lots of various perspectives (Survey #23).	Different perspectives (19)	Exposed to different viewpoints (21)	Content was presented to the students with various nursing perspectives
Diverse thinking, different perspectives (Survey #24).			
Gave me different perspectives on topic (Survey #25).			
Different teaching styles and opinions brought out more open environment to share opinions (Survey #27).			
Allowed for broader variety of experiences/ learning from very knowledgeable instructors (Survey #28).			
Different teachers had different teaching styles, and that allowed to hear the information presented in different ways- I found that helpful (Survey #3).			
It was good to get multiple perspectives. Especially helpful in labs when there are multiple instructors present (Survey #33).			
Getting to see the different perspectives and areas that nursing can go is great (Survey #34).			
Different perspectives, great to get to know many profs and their different nursing perspectives (Survey #36).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Variety of perspectives and lecture styles met different peoples learning needs (Survey #37).	Different perspectives (19)	Exposed to different viewpoints (21)	Content was presented to the students with various nursing perspectives
I enjoyed having lectures from more than one person to provide variety and have information related to specific instructors' areas of expertise. It aided in a better understanding of the content (Survey #42).			
Gave me multiple perspectives on one topic (Survey #6).			
Different perspectives, great to get to know many profs and their different nursing perspectives (Survey #36).	Exposed to different nursing perspectives (2)		
Have key points covered in the course because we can appreciate different perspectives from different instructors who come from different backgrounds (Survey #40).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
I enjoyed having lectures from more than one person to provide variety (Survey #42).	Variety in learning (7)	Exposure to different teaching techniques (16)	Content was presented in various formats and teaching styles that added variety to learning
Variety (Survey #43).			
I liked it, it was great when the prof lecturing would defer to other profs in the room to add more richness to the material being presented (Survey #44).			
It is really great to learn from a variety of faculty (Survey #44).			
I enjoyed having a variety "team leaders"/ lectures (Survey #45).			
When I'm daydreaming, a change in voice helps me stay present (Survey #5).			
I like the variety. I would hate to be stuck prof all term that has a few slides and no visuals (Survey #8).			
Made me more flexible towards different teaching styles and different ways information was presented (Survey #24)	Exposure to different Teaching styles (6)		
Different teaching styles and opinions brought out more open environment to share opinions (Survey #27).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Forced us to be flexible to differing teaching styles (Survey #28).	Exposed to different teaching styles (6)	Exposed to different teaching techniques (16)	Content was presented in various formats and teaching styles that added variety to learning
I liked having different instructors for lecturers but at times it is difficult to link classes together due to different teaching methods (Survey #32).			
Variety of perspectives and lecture styles met different peoples learning needs (Survey #37).			
Diversity in styles (Survey #7).			
Made me more flexible towards different teaching styles and different ways information was presented (Survey #24)	Flexible with teaching styles (1)		
Different teachers had different teaching styles, and that allowed to hear the information presented in different ways- I found that helpful (Survey #3)	Different presentation of content (1)		
Made me more flexible towards…different ways information was presented (Survey #24).	Flexible with presentation of information (1)		

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
It provided a diverse set of perspectives and various ways of thinking about things (Survey #21).	Diverse thinking (2)	Promoted alternative thinking (5)	Students were stimulated to think in alternate ways than what they were used to
Diverse thinking, different perspectives (Survey #24).			
Provided a variety of ideas perspectives to think about (Survey #16).	Stimulated thinking (2)		
It provided a diverse set of perspectives and various ways of thinking about things (Survey #21).			
I guess team teaching allows me to think in a broader perspective (Survey #39).	Broad perspective thinking (1)		

Table 6 Question 2 Theme 2: Increasing Teacher Credibility

Question 2 Theme 2: Increasing Teacher Credibility **Definition: Learning from expert nurses, having access to learning resources, and connecting with teachers**			
Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
It was nice to have teachers actually teaching in their interest areas (Survey #11).	Learned from experts (11)	Learned from expert nurses (13)	Students valued hearing information from nurses with specialized knowledge
we get to hear from individuals who are experts in their areas (Survey #13).			
I found we were able to learn a lot about each topic due to the individual expertise that the teacher's brought (Survey #13).			
Helped facilitate learning because those who had expertise in certain areas (ie pharmacology) taught what they were knowledgeable in/well versed in/ comfortable with (Survey #14).			
Teachers were better able to communicate their understanding of the topics (Survey #2).			
Allowed for broader variety of experiences/ learning from very knowledgeable instructors (Survey #28).			
Brought more expert knowledge as presenters could speak about their focus (Survey #38).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Helped my learning b/c I was able to gain info from various team members with expertise in different fields/foci (Survey #4).	Learned from experts (11)	Learned from expert Nurses (13)	Students valued hearing information from nurses with specialized knowledge
Since every teacher taught their field of expertise, the message came across stronger and I would connect the lectures easier to the readings (Survey #41).			
I enjoyed having lectures from… instructors' areas of expertise. It aided in a better understanding of the content (Survey #42).			
Individual expertise (Survey #43).			
value learning from an expert rather than faculty member who doesn't have background in the area (Survey #7)	Value Learning from an Expert (2)		
I could connect the lectures easier to the readings eg. An instructors strong expertise in leadership got me interested in reading the articles related to it (Survey #41).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
More resourceful (Survey #10).	Resources (5)	Provided learning resources (9)	Allowed student concerns and questions to be answered
Gave access to an individual that specialized in the subject (Survey #18).			
Help me to hear different perspectives and can approach few people (Survey #19).			
Greater amount of resources available (Survey #22).			
Good to have another instructor available...problems (eg. Having late lecuturer, compiling infor, etc.) (Survey #35).			
I have found that they are really able to field questions well (Survey #13).	Answer questions (2)		
Good to have another instructor available for difficult questions and problems (Survey #35).			
Likely fairness in grading (Survey #43).	Fairness in grading (1)		
Response time is faster (Survey #19).	Faster response time (1)		

Table 7 Question 2 Theme 3- No Influence/ Negative Influence

Question 2 Theme 3: No Influence/ Negative Influence **Definition: Learning was negatively affected or not affected by team teaching**			
Meaning Units	**Codes (# codes)**	**Categories (# codes/category)**	**Operational Definitions**
I think it was more difficult to get concepts (Survey #12).	Difficulty getting concepts (1)	Difficulty connecting with learning objectives (8)	Students felt team teaching created fragmented learning and had difficulty linking concepts
At times it is difficult to link classes together (Survey #32)	Difficulty linking concepts (1)		
There was some discontinuity … between lecturers (Survey #30).	Discontinuity (1)		
Sometimes my learning felt disjointed (Survey #38).	Disjointed (1)		
I think it…was less cohesive (Survey #38).	Less cohesive (1)		
There was no clear progression in the team (it just a series of lectures) (Survey #38).	No progression (1)		
There was some…overlap between lecturers	Overlap (1)		
Discrepancies in responses/ answers we receive among instructors.	Received conflicting information from teachers (1)		

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
I don't feel that it did (Survey #29).	No influence (2)	No influence (3)	Students found that team teaching had no influence on learning
It hasn't influenced my learning. I prefer the traditional model (Survey #9).			
Not noticeably (Survey #26).	Not noticeable (1)		

Table 8 Question 2 Theme 4: Teams Acting as Nursing Role Models

Question 2 Theme 4: Teams Acting as Nursing Role Models **Definition: Expert nurses able to inspire and excite students about the nursing profession**			
Meaning Units	**Codes (# codes)**	**Categories (#codes/category)**	**Operational Definitions**
I could connect the lectures easier to the readings eg. An instructors strong expertise in leadership got me interested in reading the articles related to it (Survey #41).	Stimulated interest (2)	Promoted nursing excitement (5)	Stimulated student interest and passion towards specific areas of nursing
A variety of instructors provides the necessary "change of scenery" in a long class to keep the level of interest high (Survey #43).			
It helped me to realize that everyone has a different passion and that to follow your passion and become and expert in whatever drives your interest is okay to do (Survey #47).	Reinforced nursing passion (1)		
Getting to see the different … areas that nursing can go is great (Survey #34).	Showed different areas of Nursing (1)		
Teachers were better able to… share their excitement about the topics (Survey #2).	Teachers shared excitement (1)		

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
I liked it, it was great when the prof lecturing would defer to other profs in the room to add more richness to the material being presented (Survey #44).	Emphasized teamwork (3)	Promoted teamwork (5)	Teams illustrated teamwork within nursing
It has allowed me to discover that a team dedicated to doing a good job is much stronger that a single individual (Survey #46).			
It was nice to see how they all collaborated together well in their teaching (Survey #47).			
It was nice to have teachers actually teaching in their interest areas, and asking each other when they had the need (Survey #11).	Teacher collaboration (2)		
Other professors would provide input to whoever was lecturing (Survey #25).			

Table 9 Question 2 Theme 5: Promotion of Student Learning

Question 2 Theme 5: Promotion of Student Learning **Definition: Students were encouraged, stimulated, and motivated to learn from team teaching**			
Meaning Units	**Codes (# codes)**	**Category (# codes/category)**	**Operational Definitions**
Enriched and brought different perspectives, opinions to the forefront (Survey #1).	Enriched learning (2)	Engaged learner (5)	Student learning was enriched and stimulated the students to learn
I found we were able to learn a lot about each topic due to the individual expertise that the teacher's brought (Survey #13).			
Add(ed) more richness to the material being presented (Survey #44).	Added richness (1)		
I enjoy the class engagement that team teaching brings (Survey #39).	Class engagement (1)		
Met different peoples learning needs (Survey #37).	Met different learning needs (1)		

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Helped facilitate learning because those who had expertise in certain areas (ie pharmacology) taught what they were knowledgeable in/well versed in/ comfortable with (Survey #14).	Enhanced understanding (2)	Enhanced learning (4)	Team teaching enhanced the students' ability to learn
It aided in a better understanding of the content (Survey #42).			
the message came across stronger and I would connect the lectures easier to the readings (Survey #41).	Connected Lectures with Readings (1)		
I think that team teaching gave me a variety of different perspectives/ areas of knowledge from the instructors that I would not have had otherwise (Survey #15)	Increased Knowledge (1)		

Q3. What positive aspects of team teaching did you experience during the term?

Table 10: Question 3 Theme 1: Increasing Teacher Credibility

Question 3 Theme 1: Increasing Teacher Credibility **Definition: Learning from expert nurses, having access to learning resources, and connecting with teachers**			
Meaning Units	**Codes (# codes)**	**Categories (#codes/category)**	**Operational Definitions**
I found we were able to learn a lot about each topic due to the individual expertise that the teacher's brought (Survey #13).	Learned from experts (18)	Learned from experts (26)	Students valued hearing information from nurses with specialized knowledge
Helped facilitate learning because those who had expertise in certain areas (ie pharmacology) taught what they were knowledgeable in/well versed in/ comfortable with (Survey #14).			
Positive aspects was being able to ask questions to a person that had up to date experience and knowledge in a subject area (Survey #18).			
The lectures were all giving the same message and used their individual expertise to cover the topics assigned (Survey #21).			
Positive aspect also included some lectures were taught better by certain instructors with more knowledge in the area "specialized" (Survey #24).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Everyone can speak of their specialty (instructor on leadership, instructor on policy) (Survey #27).	Learned from experts (18)	Learned from experts (26)	Students valued hearing information from nurses with specialized knowledge
It was good to get lecturers who were experts in their fields (Survey #30).			
different instructors are fluent in different aspects/concepts of the course (Survey #31).			
I liked it when instructors who had specialized scope of knowledge in that certain class (Survey #32).			
Different people could add different perspectives from their areas of expertise (Survey #33).			
Different expertise (Survey #34).			
Just the different areas of expertise that each faculty brings to the class really enhances the learning experience (Survey #39).			
Larger body of knowledge and expertise (Survey #4).			
Everybody was able to participate according to their strength and expertise (Survey #41).			
Individual expertise (Survey #43).			
Good variety…experts in area (Survey #7).			
I like to hear different experiences and be taught by someone that has more knowledge on a topic (Survey #8).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Larger body of knowledge and expertise (Survey #4).	Larger body of knowledge (3)	Learned from experts (26)	Students valued hearing information from nurses with specialized knowledge
Richness of various prof's… knowledge (Survey #44).			
I like to…be taught by someone that has more knowledge on a topic (Survey #8).			
I liked it when instructors…shared their experiences (Survey #32).	Teachers shared experiences (2)		
I like to hear different experiences (Survey #8).			
I think it works well because instructors teach to their particular area of interest (Survey #15).	Teachers taught interests (2)		
It makes classes much more interesting when instructors teach something that they are truly interested in (Survey #15).			
Teachers were better able to communicate their understanding of the topics (Survey #2).	Teachers better at communicating knowledge (1)		

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Likely fairness in grading (Survey #43).	Fairness in grading (4)	Provided resources (18)	Ability of students to get questions and concerns addressed
Helpful for marking purposes, it\s nice to have a "team" marking approach, as different profs may notice strengths/weaknesses in different areas (Survey #45).			
They seemed more accessible being on a team, instead of just going to 1 of them, there were multiple ones, which made me feel more secure in my marks justification and if I had a problem (Survey #47).			
Positive aspects was being able to ask questions (Survey #18).	Teachers able to answer questions (3)		
Positive aspect also included ab(ility) to answer our questions in depth (Survey #24).			
Good to have another instructor available for difficult questions (Survey #25).			
More people to look to for help/support/ideas (Survey #23).	more support (2)		
I feel there is more support with 2-3 members (for the students and staff) (Survey #23).			
Help me to hear different perspectives and can approach few people (Survey #19).	More teachers to approach (2)		
Able to approach different members of the team (Survey #46).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
More instructors to address if there are issues (Survey #1).	Ability to address issues (2)	Provided resources (18)	Ability of students to get questions and concerns addressed
More people to look to for help			
Response time is faster (Survey #19).	Faster response time (1)		
Teachers were better able to… point those interested in the direction of more information (Survey #2).	Identify resources (1)		
Increase input to curriculum design (Survey #43).	Increased input to curriculum (1)		
More access to teachers because there was more of them to access (Survey #47).	More access to teachers (1)		
More people to get feedback from (Survey #9).	More people to get feedback from (1)		

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Great to watch different views discuss and support their side (Survey #22).	Encouraged discussion (3)	Promoted connection with teachers (6)	Students felt more connected and had stronger teacher-student relationships
When 2 or more instructors are present they play off each other well- make class more vibrant because we can listen to people exchange ideas (Survey #11).			
I really enjoy the discussion/ debate that team teaching can initiate (Survey #39).			
Being able to communicate with different instructors on different levels and about different topics (Survey #31).	Communicated with different teachers (2)		
Promotes good communication (if done well) which allows us to see how teams can collaborate (Survey #31).			
Getting to know a few more faces (Survey #16).	Know more teachers (1)		

Table 11: Question 3 Theme 2: Challenging Student Learning

Question 3 Theme 2: Challenging Student Learning **Definition: Student learning was challenged through the exposure to different nursing perspectives, teaching styles and alternative thinking**			
Meaning Units	**Codes (# codes)**	**Categories (#codes/category)**	**Operational Definitions**
Different perspectives on one topic (Survey #1).	Exposed to different perspectives (17)	Exposed to different perspectives (24)	Students exposed to various nursing perspectives, opinions, and knowledge bases
Various backgrounds of the team (Survey #1).			
Hearing different viewpoints (Survey #10).			
Class more vibrant because we can listen to people exchange ideas (Survey #11).			
If teachers communicate with each other than having a different perspectives was stimulating (Survey #12).			
diverse ideas (Survey #16).			
Different perspectives (Survey #17).			
Help me to hear different perspectives (Survey #19).			
Different teachers brought a variety of…perspectives which was helpful and interesting (Survey #20).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Multiple perspectives (Survey #25).	Exposed to different perspectives (17)	Exposed to different perspectives (24)	Students exposed to various nursing perspectives, opinions, and knowledge bases
Hearing different instructors and lecturers (Survey #27).			
Different people could add different perspectives from their areas of expertise (Survey #33).			
Different perspectives (Survey #34).			
Lots of point of views and different perspectives (Survey #36).			
Variety in…perspectives (Survey #37).			
Multiple perspectives (Survey #5).			
It was good to hear the experiences and perspectives that varied from each team member (Survey #6).			
Great to watch different views discuss and support their side (Survey #22).	Heard different viewpoints (4)		
It is good to get various… points of view from teachers on similar topics (Survey #23).			
Different teachers provides different views from maternity, peds, geriatrics etc (Survey #3).			
Lots of point of views (Survey #36).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Getting to know…diverse ideas (Survey #16).	Heard different ideas (1)	Exposed to different perspectives (24)	Students exposed to various nursing perspectives, opinions, and knowledge bases
It is good to get various opinions (Survey #23).	Heard different opinions (1)		
Variety in speakers…made lectures more engaging (Survey #37).	Variety in speakers (1)		
Experienced different teaching styles (Survey #25).	Exposed to different teaching (7)	Exposed to different teaching techniques (10)	Content was presented in various formats and teaching styles that added variety to learning
I also find it more interesting to have a team of instructors teaching rather than one single lecturer, so if one teaching style doesn't work well for you, still can learn from other teaching methods that fits you (Survey #32).			
Variety in…teaching styles- made lectures more engaging (Survey #37).			
Variety of teaching styles and lecture format (Survey #4).			
Can be helpful if/when you don't particularly like one professors teaching style, provides the opportunity for variety (Survey #45).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Many different teaching styles which enabled better learning (Survey #47).	Exposed to different teaching (7)	Exposed to different teaching techniques (10)	Content was presented in various formats and teaching styles that added variety to learning
Good variety of teaching styles (Survey #7).			
Various lecture/ presentation styles (Survey #17).	Variety in Lectures (3)		
Diversifies the learning experience itself as well as the information taught which is great (Survey #34).			
Variety in…lecture format (Survey #4).			
Variety (Survey #43).			

Table 12: Question 3 Theme 3: Teams Acting as Nursing Role Models

Question 3 Theme 3: Teams Acting as Nursing Role Models **Definition: Expert nurses able to inspire and excite students about the nursing profession**			
Meaning Units	**Codes (# codes)**	**Categories (#codes/category)**	**Operational Definitions**
Hearing different…experiences (Survey #10).	Heard different experiences (5)	Promoted nursing excitement (9)	Students would hear about various nursing experiences and share in the teachers excitement
Different teachers brought a variety of…experiences…which was helpful and interesting (Survey #20).			
The chance to learn from multiple, varied experiences (Survey #28).			
It was good to hear the experiences…varied from each team member (Survey #6).			
Richness of various prof's experience and knowledge (Survey #46).			
Each faculty spoke about their passions (Survey #26).	Felt teacher passion (2)		
Everybody was able to participate according to their strength and expertise eg. (an instructor's) part on ethics was very convincing because she is so passionate about it (Survey #41).			

Meaning Units	**Codes (# codes)**	**Categories (#codes/category)**	**Operational Definitions**
Teachers were better able to…share their excitement about the topics (Survey #2).	Teachers shared excitement (1)	Promoted nursing excitement (9)	Students would hear about various nursing experiences and share in the teachers excitement
Different teachers brought a variety of backgrounds (Survey #20).	Variety in teacher backgrounds (1)		
If teachers communicate with each other than having a different perspectives was stimulating and added to depth of understanding (Survey #12).	Teacher collaboration (4)	Promoted teamwork (4)	Teams modeled teamwork
Collaboration (Survey #17).			
Collaboration, teamwork (Survey #28).			
Promotes good communication (if done well) which allows us to see how teams can collaborate (Survey #46).			

Table 13: Question 3 Theme 4: Promotion of Student Learning

Question 3 Theme 4: Promotion of Student Learning **Definition: Student learning was enriched and stimulated the students to learn**			
Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
It makes classes much more interesting (Survey #15).	Interesting classes (4)	Promoted student interest (9)	Students interested, drawn to teaching, and motivated to learn
Different teachers brought a variety of backgrounds, experiences and perspectives which was helpful and interesting (Survey #20).			
Made lectures intriguing (Survey #24).			
It is helpful when various lecturers present so that it is more interesting (Survey #32).			
Richness of various prof's experience and knowledge (Survey #44).	Added Richness (1)		
Class more vibrant because we can listen to people exchange ideas (Survey #11).	Vibrant Class (1)		
Made lectures more engaging (Survey #37).	Engaging (1)		
I really enjoyed the team teaching in maternity as it was really well organized and each teacher knew what the others were presenting (Survey #38).	Organized (1)		
Stimulating and added to depth of understanding (Survey #12).	Stimulating (1)		

Meaning Units	Codes (# of codes)	Categories (#codes/category)	Operational Definitions
Just the different areas of expertise that each faculty brings to the class really enhances the learning experience (Survey #39).	Enhanced learning experience (2)	Enhanced learning (4)	Team teaching enhanced the students' ability to learn
Many different teaching styles which enabled better learning (Survey #47).			
Added to depth of understanding (Survey #12).	Added to understanding (1)		
Various backgrounds of the team enriched learning (Survey #1).	Enriched learning (1)		

Table 14: Question 3 Theme 5: No Positives of Team Teaching

Question 3 Theme 5: No Positives of Team Teaching **Definition: No positives with team teaching identified**			
Meaning Unit	**Code (#codes)**	**Category (#codes/category)**	**Operational Definition**
None that I can remember (Survey #29).	No positive aspects (1)	No positives (1)	No positives with team teaching

Q4. What negative aspects of team teaching did you experience during the term?

Table 15: Question 4 Theme 1: Ineffective Teaching

Question 4 Theme 1: Ineffective Teaching **Definition: Teaching that lacked integration, continuity, and had ineffective delivery of content**			
Meaning Units	**Codes (#codes)**	**Categories (#codes/category)**	**Operational Definitions**
I felt the class was kind of disjointed feeling (Survey #11).	Disjointed (4)	Inability to make connections with content (18)	Teaching between teachers lacked continuity and did not allow students to integrate content
Teachings can be disjointed or disorganized if all the instructors do not share what they are each teaching (Survey #15).			
Sometimes it gets confusing when information provides to us are inconsistent (Survey #32).			
No continuity. It takes a while to get used to a prof and the constant change is distracting (Survey #9).			
I missed having the continuity of a teacher that remains consistent (Survey #11).	Lack of continuity between teaching styles (4)		
Sometimes there was a lack of continuity between teaching styles (Survey #20).			
Sometimes discontinuity between instructors (Survey #27).			
The lack of continuity in teaching style and learning expectations (Survey #39).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Sometimes when multiple instructors were contributing in one class session, it was distracting and broke the flow (Survey #33).	Lack of flow (2)	Inability to make connections with content (18)	Teaching between teachers lacked continuity and did not allow students to integrate content
it was very fragmented and did not flow as one course (Survey #42).			
I didn't always know exactly who was who, felt that it was difficult to develop a relationship with instructors (Survey #16).	Difficult to form relationships (1)		
difficult to integrate information because of different instructors taught different lectures (had no link to previous information taught) (Survey #24).	Difficult to integrate content (1)		
Sometimes it was hard to see the links between the 3 parts ; it almost felt like 3 courses! (Survey #41).	Difficult to link (1)		
Might have added to the feeling of disconnectedness (Survey #26).	Disconnected (1)		
Discontinuity between lectures (Survey #26).	Discontinuity (1)		
It was very fragmented and did not flow as one course (Survey #42).	Fragmented (1)		
The lack of continuity in teaching style and learning expectations (Survey #39).	Lack of continuity in learning expectations (1)		
More so with format of course: having course days very spread out- little continuity (Survey #25).	Classes spread out (1)		

Meaning Units	Codes (# of codes)	Categories (#codes/category)	Operational Definitions
Different teaching styles (Survey #14).	Different teaching styles (3)	Inability to deliver content (10)	Students were unable to effectively acquire knowledge
They all had different teaching styles (Survey #2).			
Different instructors have different style (Survey #24).			
Not everyone is able teach effectively without some teaching training, so some guest speakers had difficulty presenting information (Survey #18).	Different teacher fffectiveness (4)		
Some instructors were more effective than others (Survey #20).			
There was a wide range of skill level in lecturers some were excellent, other were not (Survey #30).			
Some teaching styles worked better than others (Survey #1).			
Different ways for organizing their power points (Survey #2).	Different organization of powerpoints (1)		
Certain professors with lack of knowledge in certain areas who should not be teaching some lectures (Survey #4).	Differences in teacher knowledge (1)		
It takes a while to get used to a prof and the constant change is distracting (Survey #9).	Constant change (1)		

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Some classes each teachers would like to giver her "two cents" even if partner already said this (Survey #36).	Redundant information (3)	Repeated information (6)	Information was repeated by teachers
Sometimes info is repeated (Survey #37).			
Can be repetitive (Survey #5).			
There was often…overlap in lecture content (Survey #34).	Overlap of information (3)		
Overlap of material (Survey #4).			
Some teams have way too much overlap with the guest speakers (Survey #8).			
There was often gaps in our knowledge (Survey #38).	Gaps in student knowledge (2)	Gaps in student knowledge (4)	Students felt they were missing out on content
overlap of material or gaps (Survey #4).			
Just in terms of the "basics" they get missed or overlooked (Survey #34).	Missed content(2)		
Without having all the lecturers present sometimes material we "should" know is missed because they each thought the other taught it (Survey #37).			
Vary of different expectations of different instructors- inconsistent marking etc. (Survey #1).	Inconsistent marking (2)	Evaluation concerns (3)	Students worried about the consistency of marking
Hard to figure who is responsible for what area of assignment or exam (Survey #19).			
Especially frustrating for exams (Survey #38).	Frustrating for exams (1)		

Table 16: Question 4 Theme 2: Confusion

Theme 4: Confusion **Definition: Students unable to get help, received conflicting information, and did not have an understanding of teacher expectations.**			
Meaning Units	**Codes**	**Category**	**Operational Definitions**
Having multiple instructors makes it difficult to know who to contact with questions or concerns (Survey #15).	Unclear who to contact (8)	Inability to get help (8)	Students were unsure who to contact for help
It got a little confusing at times trying to keep track of who we should ask questions about (Survey #17).			
Hard to figure who is responsible for what area of assignment or exam (Survey #19).			
When I had a question or issue to bring up, I was not sure whom to address it to, and I was referred back and forth a couple of times (Survey #20).			
Multiple course leaders so unsure of contact person (Survey #23).			
Not knowing who is the best person to contact when info/clarification is needed (Survey #28).			
It was hard to know who to contact with questions (Survey #33).			
It was difficult with so many courses with so many teachers to know which teacher was involved with each course (Survey #6).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Confusing (Survey #10).	Confusion (4)	Unclear expectations (14)	Students were unsure who to contact for help
The expectations in terms of assignments can be confusing (Survey #28).			
Sometimes it gets confusing when information provides to us are inconsistent (Survey #32).			
Things may have been lost in the confusion of different teachers (Survey #37).			
Vary of different expectations of different instructors (Survey #1).	Different expectations (4)		
Different instructors have different style, different expectations (Survey #24).			
The expectations in terms of assignments can be confusing (Survey #38).			
I never really knew what to expect and the different expectation of all the different teachers and how they marked was hard. I never got a feel for who expected what and how a certain teacher liked things to be done (Survey #47).			
At times conflicting instructions came from members of the "teams" making it difficult to understand what was expected (Survey #12).	Unclear expectations (3)		
It got a little confusing at times trying to keep track of who we should ask questions about what expectations were (Survey #17).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
I think grading assignments made it more difficult (unsure of what each instructor expects) (Survey #24).	Unclear expectations (3)	Unclear expectations (14)	Students were unsure who to contact for help
It was frustrating at times when people other than the one who had taught us about a topic were marking assignments on that topic (Survey #13).	Unclear expectations for assignments (3)		
The expectations in terms of assignments can be confusing (Survey #28).			
I never really knew what to expect and the different expectation of all the different teachers and how they marked was hard (Survey #37).			
At times the conversation went drastically off topic (Survey #22).	Discussion off topic (3)	Received conflicting information (8)	Students received information that was conflicting or irrelevant to learning objectives
Little bit of chaos when multiple instructors would add their pieces of info and sometimes couldn't follow the thought or concept (Survey #29).			
Sometimes the instructors seem to "fight" to get heard and it can be annoying. No disrespect intended but sometimes it feels like the teachers just go off and with more teachers, they can really go off (Survey #34).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Level of knowledge of the class not always taught at- some too basic, some detailed/above our level (Survey #14).	Inconsistent class level (2)	Received conflicting information (8)	Students received information that was conflicting or irrelevant to learning objectives
Because teacher's were often just short term substitutes they often weren't aware of are base level of understanding for a particular topic (Survey #2).			
At times conflicting instructions came from members of the "teams" (Survey #12).	Conflicting information (1)		
Inconsistencies (Survey #28).	Inconsistencies (1)		
Sometimes it gets confusing when information provides to us are inconsistent (Survey #32).	Inconsistent content (1)		

Table 17: Question 4 Theme 3: Ineffective Teams

Question 4 Theme 3: Ineffective Teams **Definition: Teams that lacked communication and organization**			
Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Absence of a team teacher (Survey #35).	Teams not present (4)	Ineffective communication (8)	Inability of the teams to communicate effectively
Without having all the lecturers present sometimes material we "should" know is missed because they each thought the other taught it (Survey #37).			
As the course leader did not attend other presenter's lectures there was often gaps in our knowledge (Survey #38).			
I don't like when a member of the team comes in for a class or two and doesn't attend all the classes. I believe all members should be in class to participate in discussion, provide feedback to other team members and to show support (Survey #46).			
Teachings can be disjointed or disorganized if all the instructors do not share what they are each teaching (Survey #15).	Lack of communication (3)		
Lack of communications between team members (Survey #4).			
In some classes it seemed like the professors did not communicate with one another (Survey #42).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Received conflicting information (Survey #8)	Conflicting information	Received conflicting information (8)	Students received information that was conflicting or irrelevant to learning objectives
I wanted to hear conversations between teachers- view more perspectives (Survey #3).	Not enough discussion (1)		
Teachings can be disjointed or disorganized (Survey #15).	Disorganized (5)	Lacked structure (8)	Teaching teams lacked organization
In adult/ older adult the team felt disorganized (Survey #38).			
At times, team teaching appears to be rather poorly organized (Survey #39).			
Some disorganization (Survey #7).			
Disorganization (Survey #9).			
Little bit of chaos (Survey #29).	Chaos (1)		
Sometimes the instructors seem to “fight” to get heard (Survey #34).	Teachers fought to get heard (1)		
I felt there was no one person leading the class (Survey #38).	Lacked leadership(1)		

Table 18: Question 4 Theme 4: No Negative Aspects of Team Teaching

Question 4 Theme 4: No Negative Aspects of Team Teaching **Definition: No negative aspects of team teaching identified**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
None (Survey #21).	No negative aspects (2)	No negative aspects (2)	No negative aspects
No (Survey #40).			

Q5: Would you welcome additional undergraduate nursing courses to adopt a team teaching model? Why?

Table 19: Question 5 Theme 1- Yes, would support team teaching

Question 5 Theme 1: Yes, would support team teaching **Definition: Students would support using team teaching within nursing program**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definitions**
Yes (Survey #1).	Yes (37)	Yes (37)	Students would support using team teaching within nursing program
Yes (Survey #10).			
Definitely (Survey #13).			
I would welcome it (Survey #15)			
I welcome the collaborative team teaching approach (Survey #16).			
I think that it would work well as long (Survey #17).			
Yes (Survey #18).			
Yes (Survey #19).			
Yes (Survey #2).			
Sure (Survey #20).			
Yes (Survey #21).			
Yes (Survey #23).			
Yes (Survey #24).			
Yes, I think it would be especially useful (Survey #25).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Sure (Survey #26).	Yes (37)	Yes (37)	Students would support using team teaching within nursing program
Yes (Survey #27).			
Yes, as I believe it is very beneficial (Survey #28).			
Yes (Survey #3).			
Yes! (Survey #31).			
Overall, two felt that the positive aspects of team teaching are greater than the negative aspects (Survey #32).			
Yes (Survey #33).			
Yes (Survey #34).			
Yes (Survey #35).			
It is a great model (Survey #36).			
Yes (Survey #37).			
Yes! (Survey #38).			
Yes (Survey #4).			
Yes (Survey #40).			
I don't see why not (Survey #41).			
Yes! (Survey #42).			
Absolutely (Survey #43).			
Yes (Survey #44).			
Sure (Survey #46).			
Yes (Survey #47).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Yes! (Survey #7).	Yes (37)	Yes (37)	Students would support using team teaching within nursing program
I welcome team teaching (Survey #8).			
Possibly (Survey #14).			

Table 20: Question 5 Theme 2: Increasing Teacher Credibility

Question 5 Theme 4: Increasing Teacher Credibility **Definition: Learning from expert nurses, having access to learning resources, and connecting with teachers**			
Meaning Units	**Codes**	**Category**	**Operational Definitions**
Hearing from experts, teachers able to answer questions (Survey #13).	Learned from experts (5)	Learned from experts (9)	Students valued hearing information from expert nurses
it provides a larger base of knowledge and more credibility to the knowledge that is being taught (Survey #21).			
I feel a lof of the instructors have great and different experiences that we can learn from. This also allows instructors to teach their strengths (Survey #28).			
Individual expertise (Survey #43).			
It is valuable to have an expert in the area/topic particularly in 303 for the big illness topics (ie. Diabetes, fractures, cardiac) (Survey #7).			
Everyone can speak of their specialty (instructor on leadership, instructor on policy) (Survey #27).	Teachers teach speciality (4)		
This also allows instructors to teach their strengths (Survey #28).			
It is great model especially when different profs have specialties in different areas (Survey #36).			
It is good way to have the teachers teach their area of interest and thus be better teachers. We students benefit from better classes (Survey #41).			

Meaning Units	Codes (# of codes)	Categories (#codes/category)	Operational Definitions
Help me to hear different perspectives and can approach few people (Survey #19).	More resources (4)	Provided resources (11)	Ability of students to get questions and concerns addressed
I believe it is very beneficial to learn from a variety of resources (Survey #28).			
It provides more than one resource for us (Survey #37).			
More access to teachers because there was more of them to access (Survey #47).			
I feel there is more support with 2-3 members (for the students and staff) (Survey #27).	More support (2)		
Nursing is a science and art too. With more teachers guiding nursing paths of nursing students (Survey #40).			
Likely fairness in grading (Survey #43).	Fairness in grading (1)		
Increase input to curriculum design (Survey #43).	Increased input to curriculum (1)		
Response time is faster (Survey #19).	Faster response time (1)		
Access a greater range of professionals (Survey #18).	Access to more professionals (1)		
Teachers able to answer questions (Survey #13).	Answer questions (1)		

Meaning Units	Codes (# of codes)	Categories (#codes/category)	Operational Definitions
I like getting to know as many of the faculty as possible (Survey #44).	Build relationships (1)	Promoted connection (2)	Students felt more connected and had stronger teacher-student relationships
Let's us relate to different instructors on different levels (Survey #31).	Relate to teachers (1)		

Table 21: Question 5 Theme 3: Conditions for Team Teaching

Theme 3: Conditions for Team Teaching **Definition: Changes students wanted to see in the delivery of team teaching**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
Yes, if the faculty work closely together (Survey #1).	Teachers collaborate (4)	Enhance teacher communication (11)	Increase the communication between teachers
If they collaborate well so the course runs smoothly (Survey #14).			
Yes, as long as the team is on the same page and all activity involved in the teaching process (Survey #23).			
If the instructors are on the same page and in good communication. They need to have one collective voice for disseminated congruent information to students (Survey #42).			

Meaning Units	**Codes (# of codes)**	**Categories (#codes/category)**	**Operational Definitions**
Beneficial to have all of the teaching team there @ each class so they are all up to date on what has been happening (Survey #1).	All teachers present (4)	Enhance teacher communication (11)	Increase the communication between teachers
I like it when all the instructors are involved (ie. Stay in the class, offering insight) (Survey #16).			
Yes! Especially if it is a small team who can attend all the lectures (Survey #38).			
Possibly- if the number of teachers doesn't get out of hand again (Survey #14).	Limit number of teachers (3)		
But perhaps it can be one instructor at a time (per class) (Survey #33).			
Especially if it is a small team (Survey #38).			
The goals of the students learning needs to be clear to all instructors (Survey #34).	Teachers share same learning goals (2)	Establish clear learning expectations (5)	Teachers create similar learning expectations for students
They need to have one collective voice for disseminated congruent information to students (Survey #42).			
As long as it is very clear about the …expectations (Survey #17).	Clear expectations (1)		
As long as it is very clear about the layout (Survey #17).	Clear layout (1)		
I would appreciate if the teachers all made an effort to create one uniform way of teaching a presenting (Survey #2).	Consistent teaching (1)		

Table 22: Question 5 Theme 4: No, Neutral, or Not All Courses

Theme 4: No, Neutral, Or Not All Courses **Definition: Does not recommend team teaching for all nursing courses**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
I think it would be especially useful in course that are more theory, concept based versus hard, fast, factual info (Survey #25).	Not all courses (1)	Not all courses (6)	Team teaching is not recommended for all nursing courses
I think care courses shouldn't be team teaching. For thread courses, it's fine (Survey #30).	Thread courses (2)		
Great for thread classes (Survey #36).			
More in core classes to get different views on topics eg. Questioning policy (Survey #22).	Core courses (2)		
I think care courses shouldn't be team teaching (Survey #30).			
Team teaching seams better suited for small groups and seminars as stimulates discussion, amongst teachers and students (Survey #5).	Small group learning (1)		
I prefer a traditional one teacher style with guest speakers when they are available and have a relevant expertise (Survey #11).	No (4)	No (6)	No support for team teaching within nursing courses
No (Survey #12).			
No, don't see the benefits (Survey #29).			
No. The students have to get used to tons of different teaching/ marking styles (Survey #9).			

Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
I found the program very… chaotic. Knowledge needs to go into head in discriminable pieces before I can make connection. More often than not the team teaching (especially with more than two added to the chaos) (Survey #12).	Chaos (2)	No (6)	No support for team teaching within nursing courses
I found the program very fragmented (Survey #12).			
I'm indifferent to classes adopting a team teaching model. I can see the positive aspects of it, and I can definitely see the negative aspects as well… but to me, I really don't have an opinion either way (Survey #39).	Neutral	Neutral (1)	No strong positive or negative support for team teaching

Table 23: Question 5 Theme 5: Promotion of Student Learning

Question 5 Theme 5: Promotion of Student Learning **Definition: Students were encouraged, stimulated, and motivated to learn from team teaching**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
Less boring (Survey #10).	Interesting (2)	Promoted student interest (6)	Students interested, drawn to teaching, and motivated to learn
I would welcome it because it does tend to make classes more interesting (Survey #15).			
Variety (Survey #43).	Variety (2)		
I welcome team teaching because I like the variety of information and sources (Survey #8).			
The richness of different perspectives and experiences is worthwhile (Survey #20).	Hearing experiences (1)		
A good model for nursing (seeing teams and how they work well) (Survey #46).	Model teamwork (1)		
It provides a larger base of knowledge and more credibility to the knowledge that is being taught (Survey #21).	Gained knowledge (2)	Enhanced student learning (3)	Team teaching enhanced the students' ability to learn
More knowledge brought to courses (Survey #4).			
Greater collaborations to enhance learning environment for students (Survey #4).	Enhanced learning environment (1)		

Table 24: Question 5 Theme 6: Challenging Student Learning

Theme 5: Challenging Student Learning **Definition: Student learning was challenged through the exposure to different nursing perspectives, teaching styles and alternative thinking**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
Help me to hear different perspective (Survey #19).	Heard different perspectives (2)	Exposed to different perspectives (3)	Content was presented to the students with various nursing perspectives
the richness of different perspectives and experiences is worthwhile (Survey #20).			
hearing different instructors and lecturers (Survey #27).	Heard different teachers (1)		
It's also nice to have different instructors in a case where you may not learn well from one instructor's teaching style (Survey #15).	Different teaching Styles (2)	Exposed to different teaching Techniques (3)	Content was presented in various formats and teaching styles that added variety to learning
No, The students have to get used to tons of different teaching/ marking styles (Survey #9).			
Yes to give diversity to presentation of material (Survey #18).	Different presentation of information (1)		

Q6 What suggestions do you have to improve team teaching in the future?

Table 25 Q6 Theme 1: Enhance Team Unity

Question 6 Theme 1: Enhance Team Unity **Definition: Students wish to see a unified team with a consistent message**			
Meaning Units	**Codes (# codes)**	**Category (# codes/category)**	**Operational Definition**
No more than two/course one teacher with guest lectures (I feel) is just as beneficial (Survey #12).	Limit number of teachers (5)	Better communication (15)	Students wish to hear a consistent message from the teaching team
Too many teachers= too difficult to make course cohesive- what's taught/expected etc (Survey #14).			
Keep it to 2 instructors per session, so not so much rotation/ change of lecturers/ teaching styles in one session (Survey #25).			
Either have only 1 teacher/ class or make sure that multiple teachers are very clear on the goal of the class (Survey #34).			
Small teams (Survey #38).			

Meaning Units	**Codes (# codes)**	**Category (# codes/category)**	**Operational Definition**
Each team member should be present @ each class (even if not lecturing) so they know what is going on/ better cohesiveness etc (Survey #1).	All teachers present (4)	Better communication (15)	Students wish to hear a consistent message from the teaching team
I think the idea of team teaching works best when multiple members of the team are present in a single class at the same time (avoids repetition and facilitates conversations) (Survey #11).			
I think that it is very helpful to have all of the team teachers present at classes even if they are not teaching that day (Survey #15).			
I would prefer all the team members to be included in more of the lectures (Survey #17).			
there is clear communication amongst instructors regarding course material and course assignments (Survey #28).	Better communication (4)		
Have good communication between lecturers to minimize overlap (Survey #30).			
Definitely more open communication between students and the team, as well as between team members (Survey #39).			
Communications between team members (Survey #4).			

Meaning Units	**Codes (# codes)**	**Category (# codes/category)**	**Operational Definition**
Make sure there is cohesion in the planning stages so the course is delivered cohesively (Survey #26).	Cohesion in planning (3)	Better communication (15)	Students wish to hear a consistent message from the teaching team
Make sure the team is on the same page and that they understand where all team members stand on certain important issues (that may be discussed in class) (Survey #46).			
Have the individual teams discuss who will speak on what topics (Survey #8).			
Collaboration! (Survey #14).	Collaboration (1)		
Organize content together to avoid repetition (Survey #5).	Avoid repetition (1)		
minimize overlap (Survey #30).	Minimize overlap (1)		
It would be great if links could be make between each topic so that we really understand how things work together (Survey #13).	Link topics (3)	Link concepts (5)	Students wish to see connection with team teaching
More small groups- and then class to integrate and share- (Survey #27).			
Try to connect and link the different parts of the class a little bit better (Survey #41).			

Meaning Units	**Codes (# codes)**	**Category (# codes/category)**	**Operational Definition**
Also how courses were structured. In our thread courses (N339, N340, N338) the lectures were spread too far apart and this influenced the team teaching style. This made the information even more difficult to integrate because lectures were so far apart (Survey #24).	More frequent classes (2)	Link concepts (5)	Students wish to see connection with team teaching
I'd say don't let the classes be too infrequent. This causes an even greater lack of flow (Survey #9).			
Better organization (Survey #39).	Organization (2)	Organization and functioning of team (5)	Students wish to see that teams were organized and functioned more efficiently
Organize content together to avoid repetition (Survey #5).			
Maybe one key point person for class correspondence (Survey #36).	Team leader (2)		
One clear course leader (Survey #38).			
Instructors must be accountable to one another and the students, and encourage each other to be the best instructors in order to best serve students (Survey #42).	Instructor accountability (1)		

Table 26: Question 6 Theme 2: Mitigate the Unexpected

Question 6 Theme 2: Mitigate the Unexpected **Definition: Students want teachers to similar teaching structure and expectations**			
Meaning Units	**Codes (# codes)**	**Category (# codes/category)**	**Operational Definition**
Making sure that each member of the team knows what the expectation is (ie in terms of assignments) (Survey #20).	Consistent marking (5)	Establish teaching structure (15)	Students wish to see consistent learning objectives, marking, and delivery of teaching
Clear communication amongst instructors regarding course material and course assignments (Survey #28).			
Increase consistency in… expectations in assignments/ exams (Survey #32).			
If someone different is doing the marking, it would be best to get the information on the marking criteria from them (Survey #33).			
Consistent marking amongst team members (Survey #38).			
To make same the learning objectives of the course leader matches the material presented by the co-professors (Survey #18).	Consistent learning objectives (2)		
Make sure all teachers have an understanding of our level of understanding of topics (Survey #2).			
Create a uniform teaching model (Survey #2).	Standard framework (2)		
Standard framework (Survey #7).			

Meaning Units	**Codes (# codes)**	**Category (# codes/category)**	**Operational Definition**
Keep it to 2 instructors per session, so not so much rotation/ change of lecturers/ teaching styles in one session (Survey #25).	Consistent teaching style (1)	Establish teaching structure (15)	Students wish to see consistent learning objectives, marking, and delivery of teaching
make sure that multiple teachers are very clear on the goal of the class to avoid "I'd just like to add to that…"statements (Survey #34).	Consistent class goals (1)		
More continuity in…learning expectations (Survey #39).	Consistent learning expectations (1)		
Increase consistency in… responses to questions (Survey #32).	Consistent responses to questions (1)		
Increase consistency in teaching material (Survey #32).	Consistent teaching materials (1)		
A clear progression of learning for the class (Survey #38).	Clear progression of learning (1)		
Making sure that each member of the team knows what the expectation is (ie in terms of assignments, course content, etc) (Survey #20).	Clear expectations for content (2)	Establish clear expectations (4)	Students wish to see clear teacher expectations and know who to contact for help
Ensuring expectations are clearly stated and that there is clear communication amongst instructors regarding course material (Survey #28).			
It wasn't clear who to email if one has a question on an assignment (Survey #30).	Clear contact information (2)		
Just to be really clear about who to contact for what aspects of the course (Survey #44).			

Table 28: Question 6 Theme 3: Emphasize Teacher Credibility

Question 6 Theme 3: Emphasize Teacher Credibility **Definition: Teaching strategies that promote the expertise of teachers**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
Maybe having more opportunities for the larger group breaking into smaller groups with interaction with instructors to get more face time/ strengthen relationship with profs (Survey #16).	Small group learning (3)	Suggested teaching strategies (6)	Teaching strategies that would benefit student learning
More small groups- and then class to integrate and share- make use of multiple instructors (Survey #27).			
More group teaching- increase % of involvement of other teachers for every class (Survey #3).			
More engaging with audience (Survey #10).	Interaction with audience (2)		
More interaction with class instead of lectures (Survey #27).			
Use more case studies/ examples to explain/illustrate theory/concepts (Survey #40).	Case studies (1)		
Ensure that experts address the appropriate topics (Survey #37).	Experts teach own area (2)	Learn from experts (4)	Students valued hearing information from expert nurses
Professors should be experts in lectures they teach ie more interdisciplinary involvement (Survey #4).			

Meaning Units	Codes (#codes)	Category (#codes/category)	Operational Definition
Make sure team members all bring something unique to the team (Survey #46).	Diverse teachers (1)	Learn from experts (4)	Students valued hearing information from expert nurses
I think that those better at public speaking/lecturing should be in front of the class while someone who is not so comfortable could sit back and be available for individual consultation (Survey #6).	Teachers teach strengths (1)		

Table 29: Question 6 Theme 4: No Suggestions

Question 6 Theme 4: No Suggestions **Definition: No suggested changes to team teaching**			
Meaning Units	**Codes (#codes)**	**Category (#codes/category)**	**Operational Definition**
None (Survey #21).	No suggestions (2)	No suggestions (2)	No suggested changes to team teaching
Maintain (Survey #35).			

Appendix C: Summary of Data: Categories, Sub-Themes, and Themes

Summary of Data: Categories, Sub-Themes, and Themes for Question 1

Question	**Category (#codes/category)**	**Sub-Theme (#codes/subtheme)**	**Theme (#codes/theme)**
Q1. What was your experience with team teaching this term?	Positive experience (17)		Positive experience (69)
	Heard different Perspectives (12) Different teaching styles (5)	Challenging student thinking (17)	
	Learning from experts (7) Provided resources (2) Promoted connection (3)	Increasing teacher credibility (12)	
	Promoted teamwork (5) Promoted interest (7)	Teams acting as nursing role models (12)	
	Enhanced learning (11)	Promotion of student learning (11)	
	Team teaching structure (8) Examples of team teaching (6)		Observation of team teaching organization (14)
	Created confusion (6	Confusion (6)	Negative experience (14)
	Inability to effectively deliver content (5)	Ineffective teaching (5)	
	Disorganized (3)	Ineffective teams (3)	
	Neutral (4) Fluctuating effectiveness (4)		Neutral experience (8)

Summary of Data: Categories and Themes for Survey Questions 2-5

Question	**Category (#codes/category)**	**Theme (#codes/theme)**
Q2. In what way did team teaching influence your learning?	Exposed to different viewpoints (21) Exposed to different teaching techniques (16) Promoted alternative thinking (5)	Challenging student learning (42)
	Learning from experts (13) Provided learning resources (9)	Increasing teacher Credibility (23)
	Difficulty Connecting with Learning Objectives (8) No Influence (3)	No influence/ negative influence (11)
	Promoted nursing excitement (5) Promoted teamwork (5)	Teams acting as nursing role models (10)
	Engaged learner (5) Enhanced learning (4)	Promotion of student learning (9)
Q3. What positive aspects of team teaching did you experience during the term?	Learned from experts (26) Provided resources (18) Promoted connection with teachers (7)	Increasing teacher credibility (51)
	Exposed to different perspectives (24) Exposed to different teaching techniques (10)	Challenging student learning (34)
	Promoted nursing excitement (9) Promoted teamwork (4)	Teams acting as nursing role models (13)
	Promoted student interest (9) Enhanced learning (4)	Promotion of student learning (13)
	No positives (1)	No positives of team teaching (1)
Q4. What negative aspects of team teaching did you experience during the term?	Inability to make connections with content (18) Inability to deliver content (10) Repeated information (6) Gaps in student knowledge (4) Evaluation concerns (3)	Ineffective teaching (41)
	Inability to get help (8) Unclear expectations (14) Received conflicting information (8)	Confusion (30)
	Ineffective communication (8) Lacked structure (8)	Ineffective teams (16)
	No negative aspects (2)	No negative aspects of team teaching (2)

Question	Category (#codes/category)	Theme (#codes/theme)
Q5. Would you welcome additional undergraduate nursing courses to adopt a team teaching model? Why?	Yes (37)	Yes, would support team teaching (37)
	Learning from experts (9) Provided resources (11) Promoted connection (2)	Increasing teacher credibility (22)
	Enhance teacher communication (11) Establish clear learning expectations (5)	Conditions for team teaching (16)
	Not all courses (6) No (6) Neutral (1)	No, Neutral, or Not all courses (13)
	Promoted student interest (6) Enhanced Student Learning (3)	Promotion of student learning (9)
	Exposed to Different Perspectives (3) Exposed to Different Teaching Techniques (3)	Challenging student learning (6)
Q6 What suggestions do you have to improve team teaching in the future?	Better communication (15) Link concepts (5) Organization and functioning of team (5)	Show team unity (25)
	Establish teaching structure (15) Establish clear expectations (4)	Mitigate the unexpected (19)
	Suggested teaching strategies (6) Learn from experts (4)	Emphasize teacher credibility (10)
	No suggestions (2)	No suggestions (2)

Summary of Positive and Negative Themes and Sub-Themes for Survey Questions 1-5

Positive Themes (#codes/theme + subtheme)	Negative Themes (#codes/theme + subtheme)
Challenging student learning (99)	Ineffective teaching (46)
Increasing teacher credibility (107)	Confusion (36)
Teams acting as nursing role models (28)	Ineffective teams (19)
Promotion of student learning (49)	

Summary of Recommendations to Team Teaching from Survey Question 6

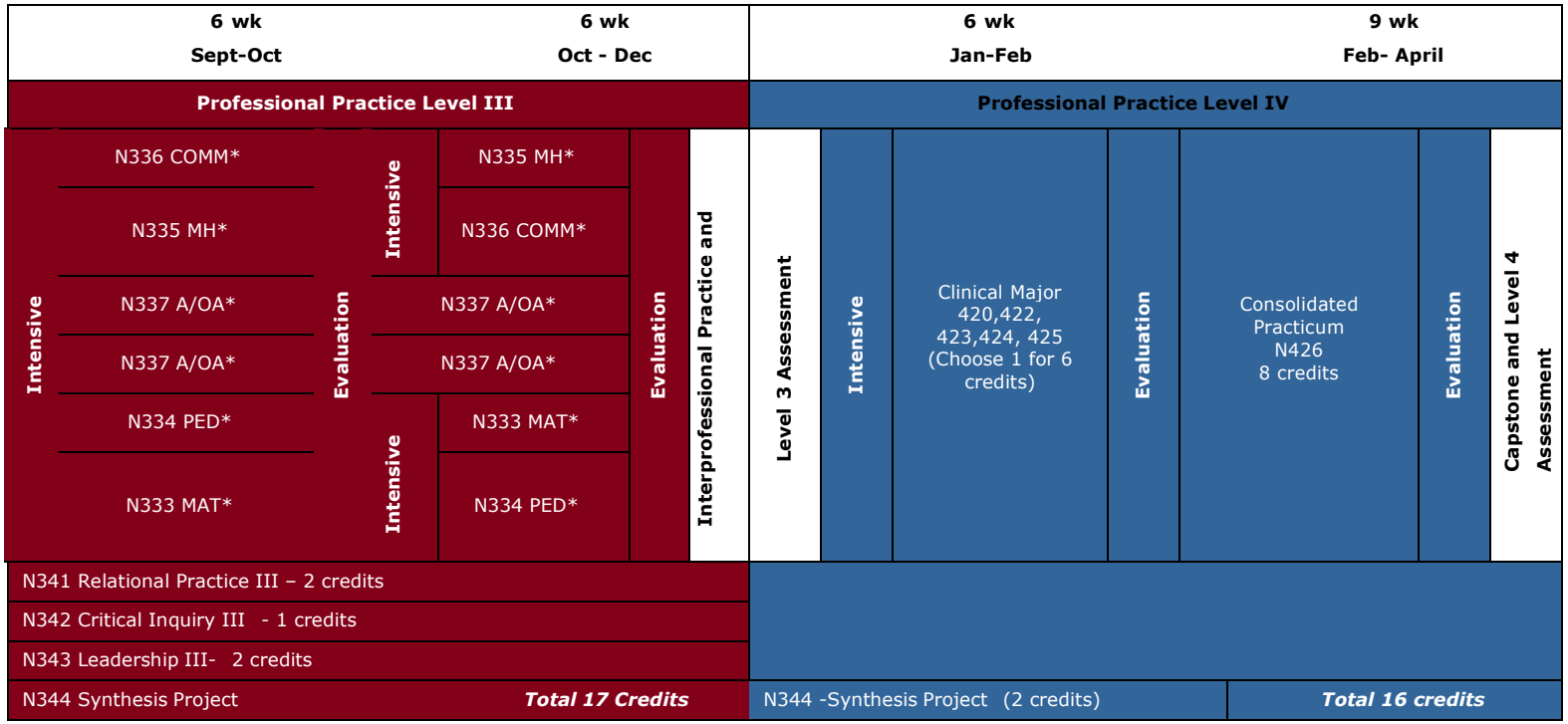
Question	**Category (#codes/category)**	**Themes (#codes/theme)**
Q6 What suggestions do you have to improve team teaching in the future?	Better communication (15) Link concepts (5) Organization and functioning of team (5)	Enhance team unity (25)
	Establish teaching structure (15) Establish clear expectations (4)	Mitigate the unexpected (19)
	Suggested teaching strategies (6) Learn from experts (4)	Emphasize teacher credibility (10)
	No suggestions (2)	No suggestions (2)

Appendix D: University of British Columbia School of Nursing curriculum

Year 1

4 wk Sept	8 wk October – December			6 wk Jan - Feb		6 wk Mar - April		1 wk April	6 wk April -June July	6 wk June-July
Professional Practice Level I				Profes sional						
N302 Foundations	N303 Intensive (2 weeks)	N303 Adult/Older Adult (8 credits - 6 weeks)	Evaluation (1 week)	Intensive	N333 MAT*	Evaluation	Reading Week	Intensive	N334 PED*	Intensive	N337 A/OA *	N337 A/OA*
					N334 PED*				N333 MAT*		N337 A/OA	N337 A/OA*
					N335 MH*				N336 COMM*		N333 MAT*	N334 PED*
					N336 COMM*				N335 MH*		N334 PED*	N333 MAT*
					N337 A/OA*				N337 A/OA*		N336 COMM*	N335 MH*
					N337 A/OA*				N337 A/OA*		N335 MH*	N336 COMM*
N304 Relational Practice I - 2 credits				N338 Relational Practice II – 2 credits						
N305 Critical Inquiry I - 1 credit				N339 Critical Inquiry II - 2 credits						
N306 Leadership I - 1 credit ***Total 18 credits***				N340 Leadership II – 2 credits ***Total 30 credits***						

Year 2



All Level II and Level III Professional Practice courses are 6 credits and 6 Weeks duration

All Level I, II, III and IV Professional Practice courses contain Disciplinary, Patho/Pharm, and Practice Competencies content

Appendix E: Review Matrix

Table 1: Literature Review Matrix: Team Teaching Qualitative studies

Author/Year/ Country/ Purpose	Research Method	Sample	Team Teaching Approach	Data Collection	Data Analysis	Key Findings	Methodological Strengths	Weaknesses	Implications
Kruszewski, Brough, & Kileen (2009) USA Described a project that used collaborative teaching strategies to teach evidence-based-practice (EBP) in a 12-month accelerated degree program	Qualitative Descriptive Study	Undergraduate nursing students (N=24)	Instructors from two courses: worked collaboratively to design, implement, and evaluate a shared clinical project	Instructor Focus groups using semi-structured questionnaire EBP performance scale to measure student competency (Score ranges 1-10, score of >5.5 indicates competency	Descriptive stats (mean, SD) EBP performance scale scores	Instructor high satisfaction with student acquisition of knowledge and skills, Students: scored high in ability to critically think and acquire knowledge	**Credibility** Qualitative research study appropriate for evaluating the effectiveness of teaching **Transferability** Accelerated baccalaureate nursing students	**Dependability** No mention of validity of EBP competency scale Ethical considerations not mentioned	Suggests that team teaching supports student learning in accelerated degrees Team teaching has cognitive benefits to student learning

Author/Year/ Country/Purpose	Research Method	Sample	Team Teaching Approach	Data Collection	Data Analysis	Key Findings	Methodological Strengths	Weaknesses	Implications
Kerridge, Kyle, & Marks-Maran (2009) UK Evaluated the perceptions of students being taught ethical decision making using a team teaching method	Qualitative evaluative research pilot Part of larger pilot study Action Research Method	n= 19; two student cohorts at two sites Trained nurses Students had experience with didactic teaching, large/small group learning teaching ethics	Two instructors worked collaboratively to plan, deliver, and evaluate course Instructors collaboratively led lectures and group activities	Student Survey 4 Open ended questions exploring student perception	Framework Method of Analysis	Three benefits of team teaching for students: Hearing different perspectives Enhancing group work Enabling cognitive skill development	**Credibility** Used student survey- open ended questions **Transferability** Used framework method of analysis. Provided thick description of data analysis Used multiple sites **Confirmability** Provided reflexivity with survey questions	**Credibility** Lacked researcher triangulation during analysis **Dependability** Lacked ethical considerations Survey not standardized or peer-reviewed **Transferability** Sample not undergraduate nursing students Small sample size	Team teaching was supported by students when learning ethical decision making Results taken with caution as survey may have prompted positive responses

Author/Year/ Country/Purpose	Research Method	Sample	Team Teaching Approach	Data Collection	Data Analysis	Key Findings	Methodological Strengths	Weaknesses	Implications
Shephard & Ashley (1979) Canada Explored the attitudes of students experiencing team teaching in the classroom	Qualitative Descriptive Survey Study	N= 464 undergraduate health sciences students. Nursing students- n=21 third year; n=22 diploma students upgrading to degree	Not mentioned	Survey	Questions were given a score ranging from 1-4	Nursing students strongly favoured using team teaching approach because it made lectures challenging	**Credibility** Used survey to assess attitudes of students **Transferability** Large sample size	**Dependability** Survey not standardized or peer-reviewed **Confirmability** Researcher assumptions or biases not stated	Provided descriptive support to use team teaching in undergraduate nursing classroom education

Author/Year/ Country/ Purpose	Research Method	Sample	Team Teaching Approach	Data Collection	Data Analysis	Key Findings	Methodological Strengths	Weaknesses	Implications
Floyd (1975) USA Understand the advantages and disadvantages of team teaching from the student perspective	Qualitative Descriptive Study	N= 97 baccalaureate nursing students from two colleges	Not Mentioned	Questionnaire: 23 items related to team teaching	Frequency counts	**Advantages:** Can pick the instructor with greater relation for help Exposed to different values, philosophies, experiences, sources of information Instructors are generally more competent in the area that they teach More teacher availability **Disadvantages** Repetitive, overlapping of material No security Instructors often contradicted each other Personality conflict between instructors	**Credibility** Used questionnaire data to assess student perspective **Transferability** Multiple sites Large sample size **Dependability** Questionnaire validated through focus group	**Dependability** Ethical considerations not mentioned **Conformability** Researcher biases not stated	Team teaching has many advantages and disadvantages for undergraduate nursing students

Table 2: Literature Review: Case Study Articles

Author/Year/ Country/ Purpose	Sample	Team Teaching Approach	Data Collection	Results	Journal Strengths	Journal Weaknesses	Implications
Mc Donald & Walters (2010) USA Evaluate student perspective of collaborative teaching for an online course	Master's of Nursing students enrolled in an online course	Two teachers planned and contributed to discussion board equally. One teacher responsible for grading, while the other was a resource to students	Post course debriefing by instructors Review of student discussion board postings	Teachers: collaboration allowed for instructors to get feedback on teaching style, strategies, designing assignments Students: team teaching approach encouraged collaboration among students	**Credibility** Examined student and teacher perceptions	**Transferability** Graduate nursing students instead of undergraduate Online course instead of classroom **Dependability** Not a research study	Feedback from instructors was enhanced through collaboration

Author/Year/ Country/ Purpose	Sample	Team Teaching Approach	Data Collection	Results	Journal Strengths	Journal Weaknesses	Implications
Dumas (1999) Canada Evaluate team teaching in a clinical practicum over a four-year period	Undergraduate nursing students enrolled in an acute and community prenatal course	Two professors collaboratively planned and delivered theoretical and clinical components of the course Teachers were flexible in delivery and would teach courses collaboratively or assign content Used interactive teaching strategies (role play, case history discussion)	Post course instructor debriefing	Planning and implementing course took a lot of time and resources Collaboration between instructors was facilitated by mutual respect for one another and common vision of course Advantages: constructive critisism from teachers, allows for creative teaching strategies, manage professional arguments Disadvantages: time, energy, and communication, students disoriented from two different teaching styles, difference in teacher opinions,	**Credibility** Explored team teaching from instructor reflection **Transferability** Used undergraduate nursing students in classroom setting	**Dependability** Not a research study	Team teaching was a benefit for students in both the theoretical and clinical components of the course Teachers involved with team teaching need to invest time in the pre-planning of the course Teachers need to have a desire and commit to working in collaborative teams

Author/Year/ Country/ Purpose	Sample	Team Teaching Approach	Data Collection	Results	Journal Strengths	Journal Weaknesses	Implications
Olivet (1997) USA Described a nursing graduate course offered collaboratively between two nursing schools	Graduate MSN students (N=22)	Two teachers met collaboratively to plan the course. Each teacher was responsible for specific content and taught independently Delivery was though Intercampus Interactive Telecommunication System	Student Survey using five-point Likert scale	Students supported collaborative teaching. Encouraged team work	**Credibility** Use of student survey to capture experiences	**Dependability** Not research paper Reliability of survey not mentioned Survey did not examine teacher collaboration **Transferability** Used **graduate** students instead of undergraduate	Suggests that collaborative teaching effective in teaching graduate nurses Encourages teamwork

Author/Year/ Country/ Purpose	Sample	Team Teaching Approach	Data Collection	Results	Journal Strengths	Journal Weaknesses	Implications
Minardi & Riley (1991) UK Discusses the advantages and disadvantages of using team teaching in teaching communication skills in a Registered Mental Nurse (RMN) curriculum	Undergraduate Registered Mental Nurse (RMN) students	Two teachers collaboratively plan and deliver workshops on communication skills Teachers would have flexible approaches: teach collaboratively, or assign teachers specific content	Post course reflection by teachers Informal student feedback	Team members need to be accepting and committed to principles of team teaching. Conflicts managed through discussion and compromise Students Advantages: lectures more engaging and interesting, teachers act as professional role models for students Disadvantages: confusion from students, conflicts between team members can be transmitted to students Teachers: Advantages: peer support, peer feedback, sharing of workload, develop close working relationships Disadvantages: fear of students not accepting of methodology	**Credibility** Explored teachers experiences with team teaching	**Dependability** Not research paper Student feedback was done informally **Transferability** Studied Registered Mental Health nurses not RN	Team teaching helped with student learning (offered different perspectives, facilitate communication and teamwork)

Table 3: Literature Review: Team Teaching- Quantitative Studies

Author/ Year/ Country/Purpose	Research Design	Sampling	Data Collection	Results	Data Analysis	Methodological Strengths	Weakness	Implications for Nursing Education
Puksa (1999) Canada Examined the relationships between first-year and second-year nursing student's perceptions of their teacher's collaborative teaching style	Quant Descriptive study	Non randomized convenience sampling from two diploma nursing colleges in Ontario College A: n = 14 nursing faculty; 157 first and second year students College B: n= 240 second year students Exclusion: part-time students; practical nurses; faculty not teaching in collaborative program	Student and instructor evaluation Student evaluation of instructor Principles of Adult Learning Scale- Collaborative Behaviour Scale-	Significant relationship between students self-efficacy and collaborative teaching ($r= .28$, $p<0.05$) Self efficacy influenced by: encouragement and positive feedback from instructors; interactive teaching styles; supportive teachers. Collaboration seen by teachers encouraged collaborative learning among students; students felt more comfortable working in student teams (71.8%)	SPSS/ PC Pearson Product Moment Correlation Coefficient Level of sig.= .05	**Research Design** Large sample size Use of student and teacher evaluations **External Validity** Achieved power of 80% at r=0.05 and medium effect size at 0.4 Use of computer data analysis tool **Internal Validity** Validity and reliability of instrumentation	**External Validity** Examined diploma nursing students instead of degree **Internal Validity** Pre-testing would strengthen design	Team teaching approach encourages students to increase their self-efficacy and collaborative learning Teachers need to be self-reflective of own teaching behaviours Evaluation of collaborative among teachers needs to be implemented in any collaborative teaching course.

Carl Wieman Science Education Initiative (CWSEI)
University of British Columbia
Wesbrook Bldg.
300-6174 University Blvd.
Vancouver, BC Canada V6T 1Z3

Tel: (604) 827-3119
Fax: (604) 827-3118

Consent Form

Consent:
Your participation in this open-ended survey is entirely voluntary and you may refuse to provide any requested information or withdraw from the survey without any consequences. The information that you provide is primarily intended to improve teaching at UBC. All data from individual participants will be coded so that their anonymity will be protected in any reports, research papers, thesis documents, or presentations that may result from this work.

I, _____, agree to participate in the survey as outlined above. My participation in this project is voluntary and I understand that I may withdraw at any time.

_____

Participant's Signature Date

THE UNIVERSITY OF BRITISH COLUMBIA

School of Nursing
2211 Westbrook Mall
Vancouver, B.C. Canada V6T 2B5
Tel: (604) 822-2891
Principal Investigator (Macphee/ Mislang)
Fax: (604) 822-7466

INFORMATION AND CONSENT FORM

Title: Team Teaching and the Effects it has on Learning in an Undergraduate Nursing Course

Funding: Teaching and Learning Enhancement Fund
Principal Investigator: Jon Mislang, RN, MSN Student, Maura MacPhee, RN, PhD, Assistant Professor, UBC School of Nursing

Team teaching is a relatively new approach to undergraduate nursing education. It involves multiple faculty co-teaching a course with the hope that teachers are able to instruct within their areas of expertise. Currently, UBC SON (School of Nursing) has adopted a team teaching model in one of its undergraduate nursing courses (N340) pertaining to leadership, ethics, and policy. However, little is known about the impact team teaching has on the student learner. The purpose of the team teaching survey is to explore the learning experiences of undergraduate nursing students currently enrolled in a team teaching course. This will be accomplished through survey data collected after students have experienced team teaching within their program

A Masters of Science of Nursing student is working on this project as part of a thesis research project along with three existing UBC School of Nursing Faculty members. The findings from this research will hopefully guide teaching and learning practices in undergraduate nursing education at the UBC SON and contribute to the body of knowledge related to team teaching.

To determine whether team teaching makes a significant difference on learning, we will need to collect questionnaire information from students currently enrolled in an undergraduate nursing course adopting a team teaching approach.

You are being asked to complete and return this packet of questions because you are a UBC undergraduate nursing student currently enrolled in a team teaching course (N340). This packet contains questions on your perceived experience with team teaching this past term, positive and negatives of the team teaching approach, and suggestions to improve team teaching in the future.

This packet should take you a maximum of 20 minutes to complete. Your return of these completed questionnaires implies your consent to do them. If you choose to participate

in this study, please return the completed survey questions to the next N340 class on **July 9, 2010.**

As a "thank you," at the following N340 class we will hand out **$5 Starbucks** coupons to participants. There are no other benefits associated with completing the survey. A potential benefit will be N340 course improvements related to student feedback. There are no known risks associated with participating in the survey. If you choose to not participate, your non-participation will not be recorded or held against you.

Your participation is anonymous. You will **not** need to put your name or any other personal identification on your completed questionnaires. The graduate student will analyze the survey questions as part of his thesis work, and the data analyses and data findings or results will contain no personal identifiers or references to individual students or faculty. The survey data will be stored in a password-protected database, and these data will be stored for 5 years per research protocol before deletion. Hard copies of the surveys will be kept in a locked storage cabinet at UBC SON (Principle Investigator's research office) and shredded at the end of 5 years per research protocol. Only the graduate student and thesis advisor (Principle Investigator) will have access to the survey data.

You are free to contact the principal investigator at any time if you are interested in discussing the research. You will also be notified of any publications or presentations that result from this research.

If you have any further questions, please feel free to contact Jon Mislang UBC MSN Student or Dr. Maura MacPhee, Supervisor. If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598.

Appendix H: Glossary

Accommodation: learning process from cognitive constructivism that individuals learn through adapting existing mental schemas

Adult learning theory: learning theory developed by Knowles (1984) that adult learners have special needs and requirements as learners

Assimilation: learning process from cognitive constructivism in which learners fit new information into previously constructed mental schemas

Confirmability: criterion for evaluating qualitative research that refers to the influence a researcher has on study findings

Constructivism: epistemological theory that individuals learn from various experiences through the construction of multiple realities, perspectives, and truths

Content analysis: qualitative research method that uses a systematic way to describe phenomena and make replicable and valid inferences from data to their context

Cognitive constructivism: learning theory developed by Piaget (1972) that individuals learn through the assimilation and accommodation of mental schemas

Credibility: criterion for evaluating qualitative research that looks at the study's ability to accurately represent the social phenomenon being investigated

Dependability: criterion for evaluating qualitative research that looks at how plausible or dependable the accounts from the research are

More knowledgeable other: concept from social constructivism that refers to a teacher or other person who has better understanding than the learner of the content being learned

NVivo: computer program used in the content analysis process

Reliability: criterion for evaluating quantitative research that looks at the ability of the instrumentation to accurately measure the phenomenon being studied

Research design: criterion for evaluating quantitative research that focuses on the overall plan or structure implanted by the researcher to answer the research question

Review matrix: organizational tool used by researchers when performing a systematic literature review

Social constructivism: learning theory developed by Vygotsky (1978) that learning is socially constructed and influenced by the perspectives of others

Student-centred learning: approach to learning that focuses on the needs of the students by engaging them in the learning process

Team teaching: group of two or more teachers working together to plan, conduct, and evaluate the learning activities for a group of learners

Transferability: criterion for evaluating qualitative research that looks at the ability of the research to generalize its findings

Validity, external: criterion for evaluating quantitative research that assesses how well study findings can be generalized to populations and settings

Validity, internal: criterion for evaluating quantitative research that assesses the strength of the association between the independent and dependent variables

Zone of proximal development: concept from social constructivism that describes a learning stage where initially a learner is unable to acquire knowledge independently but becomes capable after receiving help from a skilled partner