

**EFFECTS OF AN ONLINE EDUCATION PROGRAM ON
SELF-EFFICACY AND KNOWLEDGE OF THE CLINICAL
TEACHER ROLE: A STUDY WITH NURSING CLINICAL
INSTRUCTORS**

by

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Abstract

Clinical instruction is an essential component of professional education in nursing and accounts for a significant portion of credits within baccalaureate nursing programs. Clinical instructors (CIs) are expected to have strong clinical knowledge as well as strong teaching skills. The objective of this study was to evaluate the effectiveness of an online education program for increasing CIs' perception of teaching self-efficacy and knowledge about the clinical teacher role.

A convenience sample of CIs ($n = 32$) at Queen's University School of Nursing were recruited for this study. Over the span of seven weeks, participants completed self-paced online educational modules (Preceptor Education Program - PEP) available from the University of Western Ontario. A single sample pre-test, retrospective pre-/post-test research design was used. Participants completed teaching self-efficacy and teaching knowledge questionnaires pre-intervention ($n=32$) and post-intervention ($n=21$).

Mean teaching self-efficacy scores increased significantly from pre-test to post-test ($t = 6.7, p < .001$). Teaching knowledge scores increased significantly from pre-test to post-test ($t = 4.1, p < .05$). The online modules had a significant impact on CIs' teaching knowledge and self-efficacy. Descriptive data regarding participants' satisfaction with the PEP modules was gathered; clinical instructors for the most part completed the PEP modules and were very satisfied with them. This online mode of clinical instructor education appears to be a feasible, facilitative and an accessible way to provide ongoing professional development and education for clinical instructors at Queen's University.

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Chapter 1

Introduction

Clinical instruction is an essential component of professional nursing and accounts for a significant portion of university credits within baccalaureate nursing programs (Hanson & Stenvig, 2008). The clinical setting provides an opportunity for students to apply theoretical knowledge and put it into practice. Clinical instructors are the individuals who teach students in a clinical or laboratory practice setting and as such, are an integral part of nursing education. Clinical instructors assist students to integrate theoretical learning in clinical practice and help them achieve a broader perspective in nursing (Viverais-Dresler & Kutscheke, 2001). Students rely on clinical instructors to be both expert clinicians and expert teachers to help them meet their learning needs. Effective clinical instructors can positively enhance students' learning processes. However, a critical shortage of clinical nursing faculty together with university budget constraints that limit new faculty appointments have resulted in nursing program administrators hiring more term and part-time clinical instructors who may have little or no teaching experience (DeYoung & Bliss, 1995; Little & Milliken, 2007).

Clinical teaching is demanding work requiring clinical instructors to be competent educators and clinical nursing experts capable of assuming legal and ethical responsibility for student learning as well as patient care (Robinson, 2009). While most new clinical instructors enter the teaching field with clinical experience, they may not be

prepared for, or confident in, clinical teaching (Nugent, Bradshaw, & Kito, 1999).

Clinical instructors who come directly into the academic setting from clinical practice are often surprised at the informality of the orientation they receive (Peters & Boylston, 2006). New clinical instructors may not be familiar with the theoretical underpinnings of the curriculum and are often left to figure things out on their own (Peters & Boylston). Many clinical nurses who venture into academia have not had courses in classroom instruction or education on how to be an effective clinical instructor (Hessler & Ritchie, 2006). This lack of training may contribute to role strain and conflict and cause valuable instructors to retreat back to their clinical roles that seem less complicated (Esper, 1995).

Most clinical instructors have term contracts rather than a year-round appointment with the nursing schools and because of this, turnover is high. Faculty development for new and current clinical instructors can contribute to increased satisfaction with their teaching role and enhance recruitment and retention (Robinson, 2009). A study by Chang and Pai (2006) explored job stressors among nursing clinical instructors (n = 8). The researchers found that 'deficient role preparedness' and 'inadequate role support' were two of six emergent themes in their data. Several studies have demonstrated that it is important for nursing programs to provide faculty development including orientation and support programs that help expert clinicians become expert clinical instructors (Hewitt & Lewallen, 2010; Lewallen, Crane, Letvak, & Jones, 2003). Such programs would also support the overall fundamental need to promote student learning.

Literature about faculty development programs for clinical instructors in baccalaureate nursing programs is scarce and as a result, there is little evidence to guide development of an effective program. Prior to September 2010, at Queen's University School of Nursing, clinical instructors (but not clinical lab instructors) were expected to attend a one-day orientation session prior to the start of the fall term. During this day-long session, they received an overview of the academic programs offered at the School of Nursing, learned about the school's policies and procedures, and received a brief introduction to the affiliated health care institutions. The clinical instructors also met with their teaching team and course coordinator where they may have received guidance regarding clinical teaching. Support and mentoring from nursing faculty, the teaching team, course coordinator, and others may have occurred throughout the term. Prior to September 2010, there was no formal faculty development program regarding clinical instruction.

Beginning in September 2010 as part of the one-day orientation, the Queen's University School of Nursing introduced clinical instructors to an online training program and encouraged them to complete the program during the first seven weeks of the Fall term. The program, called The Preceptor Education Program (PEP), consists of seven online modules that were developed for both students and health care professionals, including clinical instructors (Bossers et al., 2007). Although the title suggests that preceptors are the only intended audience, this is not the case. The intent, which is clearly stated on the introductory pages of the program website, is for health care professionals

and students of all disciplines to work through the modules in order to better prepare themselves for their upcoming clinical placements. The PEP was created by the University of Western Ontario and was part of an interprofessional project. In 2006, the Ontario Ministry of Health and Long Term Care provided special funding for the creation of this program. The format and topics of the PEP were based on an extensive review of existing preceptor programs and a survey of 600 clinicians, students, and academic faculty. Included in these modules are tips, references, reflection notes, quizzes, and video clips (Bossers, Bezzina, Hobson, Kinsella, MacPhail, Schurr, & Jenkins, 2007). The estimated time of completion for each module is 30-45 minutes. The module topics are:

- Module 1: Orientation – Welcoming the Student, Roles, and Expectations
- Module 2: Developing (Really Useful) Learning Objectives
- Module 3: Giving and Receiving Informal Feedback
- Module 4: Understanding and Fostering Clinical Reasoning
- Module 5a: Fostering Reflective Practice
- Module 5b: Advanced Topics in Reflective Practice
- Module 6: Dealing with Conflict
- Module 7: The Formal Evaluation Process

No evidence as to whether online education can increase teaching effectiveness specifically for nursing clinical instructors at the baccalaureate level exists in the literature. However, Parsons (2007) showed that a similar online program effectively increased public health/community health nurse preceptors' self-efficacy and knowledge

about the preceptor role. A pre-/post-test delayed post-test research design was used and self-report measures were collected for knowledge and self-efficacy ($n = 67$). A significant increase was found between the self-efficacy pre-test and immediate post-test scores ($F [1,46] = 44.69, p < .01$) and between self-efficacy pre-test and delayed post-test scores ($F[1,46] = 47.8, p < .01$). Knowledge scores related to the role of the preceptor in public/community health nursing increased significantly between pre-test and post-test ($F[1,46] = 74.76, p < .01$) and pre-test and delayed post-test ($F[1,46] = 75.55, p = .02$).

Zahner, Tipple, Rather, and Schendzielos (2009) built on Parsons' (2007) work and conducted a pilot study ($n = 13$) with nurse preceptors to assess the feasibility of using an online continuing education course to increase knowledge and self-efficacy. This course focused on assisting nurses in acute, primary, and long-term health care settings to develop the knowledge and skills needed to be effective practice-based preceptors for undergraduate nursing students. A one-group, pre-/post-test delayed post-test research design assessed pre-course knowledge and self-efficacy with the use of an electronic survey. Embedded in the course were knowledge and satisfaction assessments. Knowledge retention and change in self-efficacy were assessed with an electronic follow-up survey. Participants' knowledge scores increased significantly from pre-test to post-test and from pre-test to follow-up. Knowledge scores declined although not significantly from post-course to follow-up. No changes in self-efficacy scores were observed. However, this study had a small number of participants and it is therefore likely that the study was underpowered to detect a change in self-efficacy if one did occur. Participants

reported satisfaction with the course suggesting that online continuing education is a feasible strategy to support preceptor learning. Further research on the effectiveness of this approach in changing and retaining knowledge and improving self-efficacy is needed.

Larson and Zahner (2011) built on the work of Zahner et al. (2009) and explored the relationship between completion of an online preceptor education program and knowledge of the preceptor role, as well as self-efficacy to perform the preceptor role. A pre-test /post-test quasi-experimental design was used with a sample of thirty-one public health nurses. Pre-test and post-test measures of self-efficacy and knowledge were collected before, immediately after, and three months after the online education program was completed. The study showed significant improvements in self-efficacy at both immediate ($F[1, 30] = 21.63, p < .001$) and the delayed post-test intervals ($F[1, 30] = 20.34, p < .001$). There was a significant increase in knowledge scores at the post-test interval only ($F[1, 30] = 116.05, p < .001$). Self-efficacy scores were found to be independent of knowledge scores at all times, nor was preceptor age found to be correlated with self-efficacy or knowledge scores.

Evidence exists that an online program is beneficial for increasing knowledge and self-efficacy, particularly for nursing preceptors (Larson & Zahner, 2011; Zahner et al., 2009). Using the PEP modules, we wanted to explore whether or not self-efficacy and knowledge would increase in a different population, nursing clinical instructors. The purpose of this research was to evaluate whether the completion of the PEP online

training program increased clinical instructors' perception of self-efficacy regarding their clinical teaching skills, and whether there was an increase in knowledge about the clinical teaching principles.

Theoretical Framework

Bandura's (1977) concept and definition of self-efficacy were used to guide this research. It has long been hypothesized that self-efficacy is a strong variable in teacher effectiveness (Prieto & Meyers, 2000). Self-efficacy has been used in education and health research, including nursing education research, to assess outcomes of education programs that use a wide variety of interventions (Ammentorp, Sabroe, Kofoed, & Mainz, 2007; Babenko-Mould, Andrusyszyn, & Goldenberg, 2004; Ford-Gilboe, Laschinger, Laforet-Fliesser, Ward-Giffin, & Foran 2008; Parsons, 2007; Swackhamer, Koellner, Basile, & Kimbrough, 2009).

According to Bandura (1977), one can construct self-efficacy beliefs from four principal sources: 1) mastery experiences (practicing and any earlier experiences with a skill), 2) vicarious experiences (seeing others perform the skill), 3) verbal persuasion (feedback from others), and 4) affective states (physical and emotional responses). These four sources of self-efficacy beliefs are embedded in the PEP modules. Throughout the modules, participants are instructed to reflect on their past performances and beliefs, and practice such skills as writing learning objectives and evaluating learners (mastery experiences within the modules). The modules include short video clips that demonstrate

teaching and learning concepts, allowing participants to watch clinical instructors perform such skills as providing effective feedback and helping students develop clinical reasoning (vicarious experiences). Verbal persuasion comes from completing the modules and reading the tips and references available. Participants are encouraged to reflect on their experiences and write their thoughts and feelings pertaining to each module (affective states). Bandura believed that positive experiences from these four sources can contribute to the formation of high self-efficacy, whereas negative experiences generally contribute to the formation of low self-efficacy (Saka & Surmeli, 2010).

Chapter 2

Literature Review

Search Strategy

The literature was searched for relevant systematic reviews on current education for nursing clinical teachers using the Cochrane Database of Systematic Reviews and the Joanna Briggs Institute, but no reviews were found. CINAHL, MEDLINE and PSYCINFO databases were the main databases searched using the following keywords: clinical teaching, clinical instructing, new faculty, nursing education, clinical education, and teaching self-efficacy. To be included in this review, studies needed to examine clinical teaching factors in relation to nursing education. Studies examining medical clinical teachers and other interprofessional clinical teaching were included. The literature review was limited to the English language, humans, and the adult population. The references of the included research articles were also searched for relevant studies.

Clinical Teaching

Although some faculty may be blessed with an innate ability to teach, most faculty members require education and experience to develop some level of teaching expertise. The same is true of nursing clinical instructors. Most clinical instructors have not had formal preparation in education and have been hired because of their professional skills and clinical work experience (Rogers, Dunn, & Lautar, 2008; Scanlan, 2001).

While most new clinical instructors enter the teaching field with ample clinical experience, there is concern that they might not be prepared adequately to teach, facilitate, guide, and evaluate nursing students (Nugent et al., 1999). Rogers et al. (2008) learned when they examined the experiences of nurses who had made the transition from practicing nurse to clinical nurse instructor, that new instructors often received no formal orientation to the nursing education program and were provided with only the course objectives and a list of students for whom they were responsible. Hanson and Stenvig (2008) used a grounded theory approach to investigate how some clinical nurse instructors (n = 6) developed their teaching abilities. 'Learning in the clinical setting' and 'trial and error' were common themes that emerged from the data. The clinical instructors reported that they developed a personalized teaching style by teaching the way they had been taught as well as using their experiences from nursing practice. Scanlan (2001) explored experiences of clinical teaching with a sample of novice and expert nursing clinical instructors (n=10). Using qualitative inquiry, Scanlan found that initially clinical instructors in a new role learned primarily on the job. By finding out what did and did not work, use of reflection and problem solving, and incorporation of each experience as a clinical instructor, novice instructors believed that they were able to develop their teaching skills.

Nursing faculty development.

Evaluations of different faculty development initiatives that incorporate various models and frameworks were reported in the literature (Clifford, 1999; Croxon & Maginnis, 2009; Robinson, 2009). Needs assessments for nursing faculty development programs, as well those examining the experiences of nurses shifting towards a career in academia have been captured through qualitative methods (Anderson, 2009; Baillie, 1999; Hessler & Ritchie, 2006; Jarrett, Homer, Center, & Kane, 2008; Lewallen et al., 2003; Morin & Ashton, 2004). Despite the use of needs assessments, no published evidence was identified of findings that were incorporated into the formal development, implementation, or evaluation of clinical nursing faculty development programs.

Morin and Ashton (2004) searched CINAHL, MEDLINE, and ERIC databases for evidence available regarding nursing faculty development and orientation programs. A total of nineteen studies were included in their literature review, and only four specifically addressed orientation for nursing faculty. One of the studies by Mills (1983) was a qualitative study that explored faculty assessment of orientation needs (n = 19). This study lacked a description of sample characteristics and was a convenience sample. The other two nursing specific studies were descriptive in nature and both focused on describing new faculty experiences (Morin & Ashton, 1998; Morin & Romeo, 1994). The study by Morin and Ashton, built on the previous study by Morin and Romeo and the objectives were the same: to identify orientation protocols and to determine what protocols facilitated transition. Only one study in their review addressed program

evaluation. Using interviews for data collection, Genrich and Pappas (1997) completed a small case study (n = 3) to evaluate one faculty development program. The program was a six-week endeavor that took place with three new faculty members at Baylor University School of Nursing in Texas. The new faculty stated that mentoring from experienced clinical instructors was helpful as well as receiving advanced information about the School of Nursing before the start of the semester about policies and procedures, learning resources available, and student services. Genrich and Pappas noted in their discussion the importance of flexibility in an orientation program in terms of time and resources as stated by the participants. This study was limited by its small sample size and lack of demographic information about the new faculty members.

Krautscheid, Kaakinen, and Warner (2008) identified the need for nursing clinical faculty development was often a topic of discussion during collaborative meetings between universities and the clinical partners. In response to the many faculty development needs identified, a creative idea to use simulation for clinical faculty development arose. A three-hour clinical faculty development workshop was developed that included theory on clinical teaching through didactic material, pre-recorded clinical teaching simulations, and reflection on teaching strategies. Details of when this faculty development program occurred were not provided. Immediately following the faculty development workshop, clinical faculty (subject number unknown) were asked to reflect on three topics: how the simulation workshop contributed to their ability to teach, how it replicated the experience of teaching, and the value of clinical simulation. Three themes

emerged as participants described the faculty development workshop's contribution to their teaching ability: enhancing their repertoire of teaching strategies, highlighting the importance of intended and accidental verbal and non-verbal messages to students, and encouraging them to be more conscious and thoughtful in their teaching behaviours. Overall, the clinical faculty reflections described the faculty development workshop using simulation as “a powerful and safe strategy to enhance their ability to effectively facilitate learning in a clinical setting” (p. 433).

Medical faculty development.

A systematic review of faculty development initiatives to improve teaching effectiveness of medical faculty was conducted by Steinert et al. (2006). Their objective was to synthesize any existing evidence that addressed the question, “What are the effects of faculty development interventions on the knowledge, attitude and skills of teachers in medical education?” (p. 497). Of the studies that were included (n = 53), six were randomized control trials (RCTs) and 47 were quasi-experimental studies of which 31 used a pre/post-test design. All of the studies focused on teaching improvements and the interventions included workshops, seminar series, short courses, and longitudinal programs. The researchers used a wide range of instructional methods that included lectures, small-group discussions, interactive exercises, role plays and simulations, films, and video-tape reviews. A total of 74% of the studies assessed reaction, which included participant satisfaction, perception of the program usefulness and acceptability, and value of the activity. Learning was assessed in 77% of the studies which included changes in

attitudes, knowledge, or skill. Other studies included assessing the change in behaviours and organizational practices. Despite the different approaches used in the studies, the participants reported an overall satisfaction. They consistently reported the programs as being acceptable, useful, and relevant to their personal objectives. In the studies that used ‘workshops’, which were most commonly a single workshop of varying duration, changes in knowledge and skill from pre-test to post-test were frequently reported. In fifteen of the studies where workshops were used, medical faculty reported improvements in their teaching abilities and use of specific approaches to teaching.

Notzer and Abramovitz (2008) examined the extent to which participation in a brief half-day workshop improved clinical instructors’ performance over the long-term, and which particular dimensions of performance improved. The study included a sample of 149 medical faculty members who undertook a required workshop on basic instructional skills including tips on providing feedback, communication skills, and student-teacher relationships. The teaching performance of the faculty members was assessed by using student feedback a year after the workshop. The study used a pre-/post-test design with a comparison group of faculty members ($n = 121$) who did not attend the workshop. Students’ ratings on their teachers’ clinical instruction performance increased significantly for the study group who participated in the workshop. Students ratings for five dimensions of clinical instruction increased significantly ($p < .01$), but only for the study group who participated in the workshop. The highest improvement in the instructors' performance related to availability of teachers to students. The comparison

group's scores were unchanged (mean of 3.54 pre-participation and 3.55 post-participation). The study results support the long-term improvement of instructional skills after participation in even a brief workshop. The meaningful improvement in instructor availability to students was associated with the workshops' emphasis on a learner-centred approach and the need to provide continuous feedback.

The Stanford Faculty Development Center developed a faculty development program for medical clinical faculty based on Skeff's (1987) seven-component educational framework. Six medical faculties each year are selected to attend the Stanford Faculty Development Program for training as clinical teaching seminar facilitators. Training includes a 1-month program that provides participants with background knowledge and seminar leadership skills required to deliver a series of seven, 2-hour seminars to their colleagues and residents. Extensive opportunities to practice teaching skills are provided. The facilitator-training program offers career development opportunities for individual faculty participants, and simultaneously provides a mechanism for institutional improvement. The objective of the program is to disseminate teaching improvement courses to medical faculty nationally and internationally through facilitator-training programs in clinical teaching and basic science teaching. This faculty development program has proven successful over the years (Berbano, Browning, Pangaro, & Jackson, 2006; Johansson, Skeff, & Stratos, 2009; Skeff, Stratos, Berman, & Bergen, 1992; Stratos, Bergen, Albright, Skeff, & Owens, 1997).

Stratos et al. (1997) evaluated a faculty development program for medical faculty that used the Stanford Faculty Development Program. Eight 2-hour seminars were delivered to participants (n = 64). On a 5-point scale (1 = definitely not, 5 = definitely yes), participants rated the usefulness of the seminars as 4.8 or greater. Statistically significant pre- to post-intervention improvements via student assessments were found for all seven categories of teaching skills ($p < .001$): learning climate, control of session, communication of goals, promoting understanding, promoting retention, evaluation, and feedback.

Johansson et al. (2009) found the Stanford Faculty Development Program to be applicable across cultures for creating positive changes in teaching behaviours. A Swedish anesthesiologist was trained and then delivered five faculty development seminars to physicians in different departments (n=40). Participants were asked to rate the usefulness of the seminar series and their teaching skills and behaviours using a retrospective pre-test and post-test method and a standardized self-assessment questionnaire created by the Stanford Faculty Development Program. Participants were asked to rate their teaching performance on a 5-point scale (1 = strongly disagree, 5 = strongly agree) currently (i.e., post-intervention) and before the seminars (i.e., pre-intervention, but retrospectively). Participants' ratings of their teaching ability indicated significant increases across a variety of clinical and non-clinical teaching settings. Positive changes in teaching behaviours were reported for all seven educational categories (learning climate, control of session, communication of goals, promoting

understanding, promoting retention, evaluation, and feedback) assessed ($p < .001$).

Johansson et al. concluded that this faculty development model is highly transportable to medical teachers in Sweden and is capable of producing positive results, consistent with those demonstrated in the United States.

Berbano et al. (2006) measured the impact of the Stanford Faculty Development Program in clinical teaching on ambulatory teaching behaviour using a pre-test/post-test design. Eight faculty members attended seven 2-hour sessions on medical clinical teaching which included role-play, didactic presentations, and videotaped performance evaluation. The main outcome measured was change in teaching as detected through the analysis of videotaped sessions with standardized learners. Independent transcribers, blind to the nature or purpose of the encounters, transcribed audiotapes of these encounters. Identifying information from the transcripts was removed and two independent researchers coded transcripts using the Teacher Learner Interaction Analysis System (TELIAS). Among the 48 videotaped encounters, the total number of questions asked declined from pre-test to post-test (714 vs. 426, $p = .02$) and there was an increase in the proportion of higher-level, analytic questions asked (44% vs. 55%, $p < .0001$). The quality of feedback improved, with less 'minimal feedback' (87% vs. 76%, $p < .0005$) and more 'specific feedback' (13% vs. 22%, $p < .001$) provided. This particular study showed that teaching behaviours improved after participation in a faculty development program, specifically in the quality of questions asked and feedback provided. However,

due to a small sample size and no control group, one cannot attribute the improvement to the workshop.

Although there is evidence that the Stanford Faculty Development Program is effective for medical faculty, evidence for its effectiveness for nursing faculty does not exist. The Stanford Faculty Development Program has never had a faculty of nursing attend. However when contacted via email in 2010, the co-director responded that a nursing clinical instructor would not be denied the chance to apply for the program (G, Stratos, personal communication, March 2010). This program was not considered feasible for the Queen's University School of Nursing due to high cost of training a facilitator and time (therefore cost) needed for clinical instructors to attend the seven 2-hour workshops. However, the content of the seven modules of the PEP, which is feasible for Queen's School of Nursing, closely parallel the seven component framework used by the Stanford Faculty Development Program (Appendix A).

In summary, faculty development for nursing clinical instructors is needed. The Stanford Faculty Development Program has been effective for medical faculty, demonstrating a change in teaching behaviours and improving teaching effectiveness across all seven components of the framework. The online PEP modules show promise as their content is similar to that of the Stanford Faculty Development Program. Therefore, for the current study, we expect the PEP program to produce positive changes in teaching outcomes for nursing clinical instructors.

Self-Efficacy

Different levels of teaching self-efficacy (high and low) effect teachers' thinking patterns, behaviour choices, level of commitment, and achievements (Yang, Kao, & Huang, 2006). High self-efficacy is an important variable between teacher performance and student learning (Cakiroglu, Cakiroglu, & Boone, 2005). Studies have shown that teachers with high levels of teaching self-efficacy work longer with students who struggle, recognize student errors, and attempt new teaching methods that support students (Ashton & Webb, 1986; Gibson & Dembo, 1984; Guskey, 1988). Teachers with higher teaching self-efficacy find teaching meaningful and rewarding, expect students to be successful, assess themselves when students fail, set goals and establish strategies for achieving their goals, have a positive attitude about students, have a feeling of being in control, and share goals with students (Ashton & Webb). Teachers who do not have a strong sense of self-efficacy, such that they do not believe that they are able to positively affect student performance, may not accept responsibility for motivating students or take the necessary steps to do so (Gibson & Dembo).

Prieto and Myers (2000) surveyed psychology graduate teaching assistants (GTAs) ($n = 176$) to obtain information about their training and supervision experiences and examined their sense of self-efficacy toward teaching as a function of these experiences. They examined whether formal training and supervision significantly increased in psychology GTAs' sense of self-efficacy toward teaching. Results indicated that training had a positive effect on self-efficacy ($F[1,8] = 5.1, p < .025$). Self-efficacy

was influenced by training activities such as observing teaching interaction (modeling or vicarious learning), lectures and talks (verbal persuasion), and fostering high levels of determination to be able to work through difficulties (emotional arousal).

Martin, McCaughtry, Hodges-Kulinna, and Cothran (2008) examined the influence of professional development on teachers' self-efficacy towards teaching fitness and health promotion lessons. Fifty elementary physical education teachers from a large urban school district in the Midwest USA participated. Thirty teachers volunteered to be in one of the two professional development groups ($n = 15$ per group) with a control group of 20 teachers. All teachers in the two professional development groups ($n = 30$) were shown how to teach using "The Exemplary Physical Education Curriculum (EPEC)" during an 8-hour workshop. Teachers in one of the professional development groups ($n = 15$) participated in two extra 8-hour workshops. The control group received no training regarding the EPEC ($n = 20$). Teachers ($n = 50$) in all three groups completed EPEC efficacy and general educational efficacy questionnaires at the beginning and end of the academic year. In addition, the groups that underwent the professional development workshops completed all questionnaires at the start of the first workshop and immediately after the workshops ended which meant they completed the questionnaires a total of four times. Teachers in both professional development groups reported significant and meaningful increases after the 8-hour workshops in their efficacy to teach EPEC motor skill objectives ($F(1, 28) = 7.26, p < .01$), and physical activity and fitness knowledge objectives ($F(1, 28) = 8.50, p < .01$), and personal and social

development objectives ($F(1, 28) = 3.29, p < .01$). In general, the authors found support for the value of professional development training in a physical activity curriculum on teachers' self-efficacy perceptions for teaching the curriculum.

Having a high level of self-efficacy has been shown to have positive effects on student achievement and teacher motivation. A common theme from the studies reviewed is that training of some sort can lead to an increase in self-efficacy. For the current study, we hypothesize that clinical instructor's who complete the seven PEP modules will have increased in perception of self-efficacy regarding their clinical teaching skills.

Knowledge

When considering the outcome of a particular program, it is important to evaluate the impact that the program had on its participants. One approach to the measurement of the impact of training is that developed by Kirkpatrick (1994). Donald Kirkpatrick is best known for creating a model for training evaluation consisting of four levels of evaluation: (1) reaction, (2) learning, (3) behaviour, and (4) results. The second level of the evaluation model, "learning", involves measuring what participants have learned in terms of both knowledge and/or skills. Evaluation can include trainees participating in written assessments or role-plays to demonstrate their knowledge and skills (Kirkpatrick, 1994). This level of evaluation allows participants to demonstrate their understanding of specific skills and/or knowledge within the learning program. Kirkpatrick's second level of the evaluation will be used for this research study. The degree to which subjects

acquire the intended PEP knowledge from their participation in the PEP modules will be measured through a multiple choice knowledge test administered before and after the intervention.

Evaluation Methodology

The design most often used to evaluate the impact of an educational program or intervention is the comparison of a self-reported pre-test score with a post-test score. Variations of this design includes post-test/delayed post-test (Andriole, Evans, Foy, Antrip, & Mancino, 1998), delayed post-test only (Bing-You, Renfrew, & Hampton, 1999; Bird, Hall, Macguire, & Heavy, 1993), and pre-/post-test/delayed post-test (Quirk, Dewitt, Lasser, Huppert, & Hunniwell, 1998).

Traditional pre-/post-test measures work on the assumption that the respondent's assessment and understanding of the concept being measured could change as a result of the educational intervention. In theory, if the post-test score is significantly greater than the pre-test score, it indicates that change occurred in the educational variable of interest (Drennan & Hyde, 2008). However, traditional pre-/post-test designs have a significant limitation, especially when subject self-report measures are used. The traditional pre-test may not be effective if subjects do not sufficiently understand, prior to the intervention, terms or concepts needed to answer pre-test questions. Subjects may overestimate or underestimate their capabilities and so the pre-test may be biased (Pratt, Mcguigan, & Katzev, 2001). For example, actual change in teaching skill at post-test may be

underestimated if subjects overestimated their teaching skill at pre-test (Pratt et al., 2001). This change in a subject's frame of reference has been called a "response shift".

To control for possible response shift bias, several researchers suggest that a retrospective pre-/post-test method can be used (Drennan & Hyde, 2008; Moore & Tananis, 2009; Pratt et al., 2001). The retrospective pre-/post-test method differs from the usual pre-/post-test design in that both post-test and pre-test perceptions of respondents are collected at the same time. Subjects are asked to first report their ability as a result of the program (post-test) and then at the same time to recall their ability at the beginning of the program (retrospective pre-test) (Drennan & Hyde). The collection of retrospective pre-test and post-test ratings at the same time leads to the reduction of the response shift bias because respondents are making the ratings from the same internal frame of reference.

Retrospective pre-/post-test designs have been used to evaluate educational outcomes. Hewson and Copeland (2000), using the retrospective self-assessment of accepted teaching competencies, showed that a faculty development program improved the teaching competencies of the participants. Both the program participants' retrospective self-assessments and the independent ratings by their students showed post-program improvements and the two assessments were positively correlated (Hewson & Copeland).

McLeod, Steinert, and Snell (2008) assessed the usefulness of retrospective assessments for existing faculty development programs at McGill University School of

Medicine. Fifty faculty members participated in a workshop entitled “teaching when there is no time to teach”; 49 different faculty members attended the same workshop one year later. A second workshop titled “designing successful workshops” was attended by 33 and 40 faculty members at the same time-points. Self-ratings on all competency items were significantly higher on the retrospective workshops items than on the pre-test workshop items for all four workshops. The researchers concluded that the use of a retrospective pre/post-test may help to avoid the response shift bias inherent in traditional pre- and post-test self-assessments caused by pre-test over- or underestimation.

Research Objectives

The objective of this study was to evaluate the effectiveness of the online PEP for increasing clinical instructors’ perception of self-efficacy to perform the teacher role and instructors’ knowledge about the key concepts presented in the PEP online training program. In order to ascertain whether the PEP modules were more effective with certain subgroups of clinical instructors, a secondary objective was to explore whether relationships exist between self-efficacy, knowledge, and the demographic variables age, years of teaching experience, and highest level of education attained. Descriptive data regarding participants’ satisfaction with the PEP modules were also gathered; that is, whether they liked the modules and whether some were more useful than others. Finally, we examined the possibility of a response shift bias through assessment of pre-program self-efficacy and retrospective self-efficacy.

Research questions.

The following questions were proposed:

1. Is there a difference in clinical instructors' teaching self-efficacy before and after completing the online PEP modules?
2. Is there a difference in clinical instructors' knowledge about clinical teaching before and after completing the online PEP modules?
3. Is there a relationship between teaching self-efficacy, teaching knowledge, and demographic variables including age, highest level of formal education, and years of teaching experience?
4. Did a response shift bias exist when teaching self-efficacy was measured using pre-/post-test measures compared with retrospective pre-test measure?

Chapter 3

Methods

The Educational Intervention

The educational intervention used was a free online set of modules created for both students and health care professionals by a research group at the University of Western Ontario in conjunction with Fanshawe College. The modules were created by an interprofessional research group with funding from the Ministry of Health and Long Term Care in 2006. No testing since the development of the PEP modules has been completed. Seven modules were developed that require approximately 30-45 minutes each to complete. Modules can be accessed from any computer with internet access. One can save and re-open the modules so that accessibility is easy and convenient.

Research Design

In order to determine whether teaching self-efficacy and knowledge about clinical instruction principles increased after completing the online PEP modules, a single sample pre-test, retrospective pre-/post-test design was used. It was hypothesized that a response shift bias might occur in the data collected for this study. The use of the traditional pre-/post-test method along with the retrospective pre-test was used for this study to account for the possible response shift.

Participants were asked to fill out a self-efficacy questionnaire before the intervention (pre-test). On completion of the online PEP modules, they were asked to think about the

time before the intervention and recall their teaching self-efficacy (retrospective pre-test) as well as reflect on their self-efficacy after having completed the modules (post-test). In other words, the teaching self-efficacy pre-test was administered twice, once prior to the intervention and again after the intervention (retrospective pre-test) at the same time as the post-test. Retrospective self-efficacy pre-test scores were compared with the pre-test self-efficacy scores gathered prior to the intervention to learn whether subjects may have over-estimated or under-estimated their teaching self-efficacy prior to the intervention.

Research Participants

A purposeful, convenience sample of clinical instructors, including clinical lab instructors, at Queen's University School of Nursing in Kingston, Ontario, Canada was recruited. The inclusion criterion was as follows: all clinical and lab instructors who provided clinical instruction for the 2010-2011 academic year in an undergraduate clinical course. All instructors were invited to participate with no restriction on gender, age, or years of experience with the exception of those directly involved in this study. A total of 31 instructors were invited to participate for the fall term of 2010.

Instruments

Knowledge.

A 16-question knowledge test was developed by the author to measure knowledge related to the seven modules in the PEP. Face validity was assessed by professors in the

Queen's University School of Nursing (Judy DeWolfe, Dana Edge, Lisa Keeping-Burke, and Jo-Anne Peterson) who had worked with the PEP modules. All questions were answered using a multiple choice format with one correct response and three distracters. There were two questions for each module except module 5 which is divided into two sections with two questions per section. A preliminary pre-test with four former clinical instructors who were not hired for the 2010-2011 academic year was completed (June, 2010). Non-structured face to face interviews were carried out as part of the pre-test in order to obtain feedback about clarity of wording, difficulty of questions, and the amount of time needed to complete the questionnaire which ended up averaging 15-20 minutes. No changes were made to the questionnaire as a result of the pre-testing.

Self-efficacy.

The Self-Efficacy Toward Teaching Inventory (SETTI) (Nugent et al., 1999) revised for this study by the primary investigator was used to measure teaching self-efficacy in this research study. With permission from one of the authors of the SETTI scale (Appendix B), nine items that were not relevant to clinical instructors at Queen's University School of Nursing were removed, particularly items in the domain of course preparation.

The original version of the SETTI consisted of 48 items and was used to measure the perceived teaching self-efficacy of new nurse educators (Nugent et al., 1999). Internal consistency for the instrument was high (alpha coefficient = .95).

The SETTI used for this study was a 39-item, self-report instrument measuring the degree to which instructors felt confident in their ability to execute specific teaching behaviours across four domains: course preparation, instructor evaluation and examination, and clinical skills. Participants responded to each statement using a 4-point Likert-scale ranging from one “not confident” to four “completely confident”. The instrument generated a total score ranging from 39 to 156 points.

Procedure

A sealed envelope was provided to all clinical instructors in the undergraduate nursing program at Queen’s University, either in person or via mail. Included in the sealed envelope was the information letter and consent form (Appendix C), a demographic data form (Appendix D), the teaching self-efficacy pre-test questionnaire (Appendix E), and the knowledge test (Appendix F). As well, there were instructions directing participants to return the forms to the School of Nursing via interagency mail or in person to the primary investigator’s mailbox before their scheduled orientation day in September or to bring the completed forms to the scheduled orientation day.

As part of Queen’s University School of Nursing orientation, all clinical and lab instructors attended an orientation session on campus on September 8th, 2010. The orientation session included an introduction to the PEP modules and an opportunity to begin and possibly complete the first module. The primary investigator of this study facilitated this portion of the orientation session. At the beginning of the orientation

session, the primary investigator made a brief announcement reminding instructors about the study and asked that any outstanding packages be handed in. For those who planned to participate in the study but forgot their package, extra packages were available. The primary investigator was available in a separate room if clinical instructors wanted to ask questions or complete the consent form and questionnaires. All clinical instructors, regardless of their participation in the research, learned about the PEP modules, registered online, and completed (or began, depending on individual progress) the first module. An interactive computer lab in Bracken Health Sciences Library was booked for the completion of these activities. All clinical instructors were asked to complete the modules on their own during the first seven weeks of term (September 13th to October 29th, 2010). An email was sent each week to all clinical instructors reminding them of the modules and providing timely tips relevant to clinical instructors (Appendix G). All clinical instructors who completed the PEP had an opportunity to print a completion certificate that could have been forwarded to the Undergraduate Coordinator and placed on their personnel file at the School of Nursing.

At the end of the seven week period (October 29th, 2010), clinical instructors who consented to participate in the study were sent another sealed package containing a retrospective pre- and post-test teaching self-efficacy questionnaire (Appendix H), and the knowledge test (Appendix F). As well, they were sent the post-program feedback form (Appendix I).

After the seven week period (October 29th, 2010), an email was sent to clinical instructors who had consented to participate in the research reminding them about the packages they would be receiving. They were asked to return the packages by November 12th, 2010. An email reminder and thank you was sent to all respondents on November 12th, 2010 and a second package of questionnaires and email reminder was sent two weeks later (November 26th, 2010) to all the subjects who had not returned the post-test questionnaires following the method recommended by Dillman (2000).

Due to the low number of instructors hired in the Fall, all three new clinical instructors hired for the Winter term were invited via email to participate in the study. A sealed envelope was provided to the three new winter term clinical instructors in the undergraduate nursing program at Queen's University, either in person or via mail using identical procedures employed in Fall 2010. No orientation day exists in the Winter term; therefore, once consent was obtained participants were informed that if they had difficulties with registering and navigating through the online PEP modules, a one-on-one meeting at the School of Nursing could be arranged with the primary investigator. All clinical instructors were asked to complete the modules on their own during the first seven weeks of term. An email was sent each week to all clinical instructors, reminding them of the modules and providing timely tips relevant to clinical instructors (Appendix G). At the end of the seven week period, clinical instructors who consented to participate in the study were sent another sealed package containing a retrospective pre-test and

post-test teaching self-efficacy questionnaire (Appendix H), and the knowledge test (Appendix F). As well, they were sent the post-program feedback form (Appendix I).

Data Analyses

Data analyses were performed using the latest version of Statistical Package for Social Sciences (SPSS 19.0). Descriptive statistics including the mean, standard deviation and range were used to describe the study population. The alpha level was set at .05 for all statistical tests. The following statistical tests were used to answer the research questions. Two different analyses using a paired *t*-test were carried out to answer research questions 1 and 4: 1) Is there a difference in clinical instructors' teaching self-efficacy before and after completing the online PEP modules?; 4) Did a response shift bias exist when teaching self-efficacy was measured using pre-/post-test measures compared with retrospective pre-test measure? A paired *t*-test was carried out to answer research question 2: Is there a difference in clinical instructors' knowledge about clinical teaching before and after completing the online PEP modules? Several statistical tests were used to answer research question 3: An independent samples *t*-test was used to look at the relationship between level of education and self-efficacy, and knowledge. Pearson's product moment correlation coefficient and the non-parametric Spearman's rho statistic (due to data not following the normal distribution) were used to examine the relationship between age and years of teaching experience with self-efficacy and knowledge. Descriptive statistics were used to show the completion rates of each PEP module.

Clinical instructors' feedback about the modules was summarized. We recognized that even with full participation, the study potentially would be underpowered knowing 52 subjects were needed to achieve 80% power to detect a significant difference if one existed (Appendix J).

Ethical Considerations

Approval to conduct this research was obtained from Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (REB) (Appendix K). The consent forms and all identifying information such as names and email addresses of subjects were kept in a locked file in a private locked office that only the primary investigator could access. All data from the study, including questionnaires and demographic data, were kept in a locked file in a private office that both the primary investigator and the thesis supervisor could access. Demographic data, self-efficacy questionnaires, and knowledge questionnaires were identified by a code number and contained no identifying information. All data and consent forms were kept separate from the subjects' personnel files and will be shredded five year after study completion. To further ensure confidentiality, when self-efficacy and knowledge scores were compared with demographic variables, no comparisons were made when the total number of subjects in that demographic category was fewer than five subjects. For example, there were fewer than five male clinical instructors, so no comparisons were made.

Chapter 4

Results

Demographics

Of the 38 clinical and lab instructors who provided instruction in the undergraduate program at the Queen's University School of Nursing during the 2010-2011 academic year, 34 were invited to participate in this research study. Four clinical instructors were not eligible to participate as they had direct involvement in this study, being either the primary investigator or part of the supervisory committee. In the Fall of 2010, 31 instructors were invited to participate; 29 consented and 18 completed the study in its entirety, meaning they completed all pre-test and post-test questionnaires. Three instructors were hired to teach in the 2011 Winter term; all three agreed to participate and completed the study in its entirety (Table 1). The participation rate for the study was 94% (32/34) with a completion rate of 66% (21/32).

Comparison of the two groups of clinical instructors (those who completed the study in its entirety and those who did not complete the study) using *t*-test analysis showed no significant difference in average age, mean knowledge pre-test scores or mean self-efficacy scores. A Mann-Whitney U test (because of skewed data) was used to determine whether there was a significant difference between the two groups in years of teaching experience and none existed. Other variables including job, gender, level of education, previous education, training, and whether they were new to Queen's were examined using a chi-square statistic. Those who answered yes to 'new to teaching' and

yes to ‘first time teaching at Queen’s University’ were more likely to complete the study in its entirety.

The participants were primarily female (93.8%) with a mean age of 37 ± 12 years (range 23-63 years). The participants included clinical instructors (n = 20), lab instructors (n = 5), and those who reported being both a clinical and lab instructor (n = 7). The majority of the participants were term adjuncts (90%) with the School of Nursing. Just over 56% of participants reported that their highest level of education was a baccalaureate degree and 44% reported their highest level of education was a master’s degree. Eleven (34%) participants were new to the teaching role and 14 (44%) were new to Queen’s University specifically. Three of the participants new to the Queen’s School of Nursing had taught elsewhere in the past. Teaching experience among all participants ranged from one year to twenty-nine years. When asked whether they had undergone any other form of previous training or education related to clinical instruction, 21 participants (63%) responded with “no”.

Table 1

Study Participant Demographics (n=32)

		n (%)
Gender	Female	30 (93.8)
	Male	2 (6.3)
Job title	Clinical instructor	20 (62.5)
	Lab instructor	5 (15.6)
	Both	7 (21.9)
Rank	Term adjunct	29 (90.6)
	Academic staff	3 (9.4)
Age	≤ 29 years	14 (43.8)
	≥ 30 years	18 (56.2)
	Mean Age 37.34 ± 12 years	
	Age Range 23-63 years	
Highest level of education	Baccalaureate	18 (56.3)
	Masters	14 (43.8)
New to teaching	Yes	11 (34.4)
	No	21 (65.6)
First time teaching at Queen's	Yes	14 (43.8)
	No	18 (56.3)
Previous training/education related to clinical instructing	Yes	11 (34.4)
	No	21 (63)

The Educational Intervention

All clinical instructors, including those not eligible and those who declined participation in the research study, who had been hired at the beginning of the fall term attended an orientation session on campus on September 8th, 2010. At the session, they were introduced to the PEP modules and had an opportunity to begin the first module. The primary investigator facilitated this orientation session. All clinical instructors were asked to complete the modules independently during the first seven weeks of term (September 13th – October 29th, 2010). An email was sent each week to all clinical instructors who had consented to participate in the research, reminding them of the modules and providing timely tips relevant to clinical instructors (Appendix J). Due to the lower than anticipated number of eligible clinical and lab instructors hired for Fall term, three new clinical instructors hired for the Winter term were invited to participate in the study. No orientation day took place in the Winter term. The instructors were informed via email that if they had difficulties with registering and navigating through the online PEP modules, a one-on-one meeting could be arranged with the primary investigator. None of the three participants requested to meet one-on-one. As with the Fall term, the clinical instructors were asked to complete the modules on their own during the first seven weeks of the Winter term (January 10th – February 28th) with weekly reminder emails sent during the term.

The majority of participants reported fully or mostly completing all of the PEP modules although completion rates were lower for modules 4, 5a, and 5b (Table 2). The range of full completion ranged from 29% to 71% depending on the module (Table 2). Modules 4, 5a, and 5b were also the 'least liked'. Module 5a and 5b both covered material referring to 'reflective practice'. Overall, sixteen participants (76%) reported fully or mostly completing all of the modules and one participant fully or mostly completed six to seven modules (Table 3). One participant reported completing none of the modules.

Table 2

Participant Self-Report of Completion of each PEP Module (n=21)

PEP Module	Completion (n)			
	Fully	Mostly	A little	None
1 – <u>Orientation</u>	14	6	0	1
2 – <u>Developing Learning Objectives</u>	15	5	0	1
3 – <u>Giving/Receiving Informal Feedback</u>	15	5	0	1
4 – <u>Understanding/Fostering Clinical Reasoning</u>	7	9	2	3
5a – <u>Fostering Reflective Practice</u>	6	10	1	4
5b – <u>Advanced Topics in Reflective Feedback</u>	6	10	1	4
6 – <u>Dealing with Conflict</u>	13	4	0	4
7 – <u>The Formal Evaluation Process</u>	12	6	0	3

Table 3

Completion of PEP Modules either in “Full” or “Mostly” by Participants (n=21)

Module Completion	Fully or mostly n (%)
8 Modules	16 (76.1)
6-7 Modules	1 (4.8)
4-5 Modules	1 (4.8)
1-3 Modules	2 (9.5)
0 Modules	1 (4.8)

Self-Efficacy

Participants who completed the study in its entirety (n = 21) completed the 39-item teaching self-efficacy questionnaire three times throughout the study. Cronbach’s alpha reliability coefficient for both the self-efficacy pre-test and self-efficacy post-test questionnaire was 0.95 indicating that there was high internal consistency among questionnaire items. Mean scores for the self-efficacy pre-test, retrospective and self-efficacy post-test questionnaires are shown in Table 4. Mean pre-test self-efficacy score for the 32 participants who consented to participate in the study was 110.8 ± 13.9 . The mean pre-test self-efficacy score for the subgroup of 21 participants who completed the study was 111.2 ± 13.1 . Mean teaching self-efficacy scores increased significantly from pre-test to post-test amongst the subgroup of 21 who completed the study ($t = 6.7, p <$

.001, $r = 0.83$). Mean retrospective self-efficacy score was significantly lower than mean self-efficacy pre-test score among the 21 who completed the study ($t = -2.3, p < .03$). Even though a test statistic is significant doesn't mean that the effect it measures is meaningful or important (Field, 2005). The solution to this criticism is to measure the size of the effect that was being testing in a standardized way (Field, 2005). For this research study, once the t-test calculations were complete, the primary researcher decided to convert them to an r-value, in order to determine the effect size (Appendix L). The effect size r-value from self-efficacy pre-test to self-efficacy post-test was 0.8317. According to Cohen (1988) this can be defined as a large effect size.

Table 4

Mean Self-Efficacy Scores for the Participants who Began the Study (n=32) and the Participants who Completed the Study (n=21) and Paired t-test Results

	n	Mean	Range	df	SD	Mean Change	t	p	Effect Size
Self-Efficacy Pre-Test	32	110.8	82-143		13.9				
Self-Efficacy Pre-Test	21	111.2	93-143		13.1				
Self-Efficacy Post-Test	21	124.1	110-153	20	11.9	12.9	6.7	<.001	0.8317
Self-Efficacy Pre-Test	21	111.2	93-143		13.1				
Retrospective Self-Efficacy	21	102.2	73-136	20	18.5	-9.0	-2.3	.034	

Self-efficacy scores could range from 39-156

Knowledge

An item analysis was completed for the 16-question knowledge test that was created by the primary investigator. Item analysis is a process which examines participants' responses to individual test questions in order to assess the quality of those items and of the test as a whole (McGahee & Ball, 2009). Item analysis is especially valuable in improving items which will be used again in later tests, but it can also be used to eliminate ambiguous or misleading items in a single test administration (McGahee & Ball).

Two measures were used to analyze the items: the difficulty index (D) and the validity index (V). Typically an exam would be composed mostly of questions with D-values in the 0.60 to 0.80 range. Other D-values would extend lower or higher but they would all remain in the .25 to .95 range. For the 16-question knowledge pre-test, D-values ranged from 0.07 to 0.86 (Table 5). Two questions (12 and 13) fell below .25, meaning that the responses to these questions were most likely the result of guessing. The V-value reflects the utility of a question in distinguishing between poor and good students. Generally, a question with a V-value greater than 0.2 indicates that the question serves as a good discriminator. The range of V-values for the 16-question knowledge test was -0.14 to 0.43. For two questions (5 and 11) the V-values were negative meaning they were anti-discriminatory at pre-test.

When the item analysis was repeated for the post-intervention knowledge test, changes in D and V-values were noted. The D-values increased, meaning that people

were correctly answering the questions when compared to the knowledge pre-test. D-values ranged from .36 to 1.0. V-values also increased from pre-test to post-test. Ranges for V-values were .01 to .57. When looking at the D-values and V-values at both pre-test, and post-test separately, it appears that the pre-test values were based mainly on random guessing. In future studies, if this knowledge tool is to be used again, there are certain questions that may need to be removed based on the information from the item analysis. One could argue that questions 2, 3, and 4 were poorly developed questions. Removing these questions and looking at the overall tool in depth would be an implication for future studies.

Table 5

Item Analysis Results for 16-Question Knowledge Test

Question #	Pre-test Difficulty (D)	Post-test Difficulty (D)	Pre-test Validity (V)	Post-test Validity (V)
1	.50	.71	.43	.29
2	.71	1.00	.01	.01
3	.86	1.00	.01	.01
4	.79	1.00	.14	.01
5	.64	.79	-.14	.43
6	.86	.86	.01	.01
7	.21	.36	.14	.43
8	.43	.71	.29	.29
9	.64	.71	.14	.29
10	.57	.86	.01	.29
11	.64	.64	-.14	.43
12	.07	.71	.14	.29
13	.07	.36	.14	.43
14	.36	.71	.14	.29
15	.71	.71	.29	.57
16	.43	.71	.01	.57

The mean scores for the 16-question teaching knowledge pre-test and post-test are shown in Table 6. Mean knowledge pre-test score for the 32 participants who began the study was 8.8 ± 2.4 and for the 21 participants who completed the study, 9.0 ± 1.7 . Teaching knowledge scores increased significantly from pre-test to post-test ($t = 4.1, p < .001$). There was no significant correlation for this group of clinical instructors between

any of their self-efficacy scores and any of their knowledge test scores. Self-efficacy scores were independent of their knowledge scores.

As for self-efficacy, once the *t*-test calculation was complete, the primary researcher converted it into to an *r*-value, in order to determine the effect size (Appendix L). The effect size (*r*-value) from the knowledge pre-test to the knowledge post-test was 0.6757. According to Cohen (1988) this can be described as a medium effect size.

Table 6

Teaching Knowledge Scores Pre-Test and Post-Test

	N	Mean	Range	df	SD	Mean Change	<i>t</i>	<i>p</i>	Effect Size
Pre-Test Knowledge Score	32	8.8	2-13		2.4				
Pre-Test Knowledge Score	21	9.0	6-12		1.7				
Post-Test Knowledge Score	21	11.7	9-16	20	2.3	2.7	4.1	.001	0.6757

Knowledge scores could range from 0-16

Demographic Variables

In order to ascertain whether the PEP modules were more effective with certain subgroups of clinical instructors, relationships were explored between self-efficacy and knowledge scores (including change scores) and demographic variables including level of education, age, and years of teaching experience.

Self-efficacy and level of education.

An independent samples *t*-test was used to determine if there was a significant relationship between self-efficacy and level of education. There was no significant relationship between level of education (baccalaureate/master's) and mean self-efficacy score (Table 7) although there was a trend of interest ($p = .12$). Participants with a master's degree obtained higher scores than baccalaureate degree prepared instructors on all self-efficacy questionnaires although the differences were not statistically significant. Mean self-efficacy scores for baccalaureate degree-prepared instructors increased more than those for master's prepared instructors but the differences were not statistically significant. The mean change score for self-efficacy was lower for the master's prepared instructors when compared to baccalaureate instructors.

Knowledge and level of education.

An independent samples *t*-test was used to determine if there was a significant relationship between knowledge and level of education. There was no significant

relationship between level of education (baccalaureate/master's) and mean knowledge scores (Table 7). However there was a trend of interest. Participants with a master's degree obtained higher scores than baccalaureate degree prepared instructors on all knowledge questionnaires although the differences were not statistically significant. The mean knowledge score for baccalaureate degree prepared instructors increased more than those for master's prepared instructors but the differences were not statistically significant. Mean change score for knowledge was higher for the master's prepared instructors when compared to baccalaureate instructors.

Table 7
Comparison of Mean Self-Efficacy and Knowledge Scores with Level of Education (Baccalaureate, Masters)

	Baccalaureate n=12	Masters n=9	<i>p</i>
Self-Efficacy Pre-test (n=21)	107.4 (14.2)	115.2 (12.9)	.12
Retrospective Self-Efficacy (n=21)	97.8 (20.5)	108.2 (14.2)	.21
Self-Efficacy Post-test (n=21)	123.8 (13.9)	124.6 (9.6)	.88
Change in Self-Efficacy Pre-test to Post-test	14.7 (10.4)	10.6 (5.9)	.30
Knowledge Pre-test	8.5 (2.4)	9.1 (2.3)	.5
Knowledge Post-test	11.3 (2.4)	12.1 (2.3)	.46
Change in Knowledge Pre-test to Post-test	2.3 (2.8)	3.2 (3.3)	.48

Self-efficacy and age.

Correlations between age and self-efficacy scores were examined using the Pearson correlation coefficient (Table 8). Age of participants was not significantly correlated with self-efficacy pre-test scores ($p = .10$) or post-test scores ($p = .46$) but age was significantly and positively associated with retrospective self-efficacy scores ($p = .04$), suggesting that as age increases, retrospective self-efficacy scores increase.

Table 8

Correlations between Demographic Variables (Age and Years of Teaching Experience) and Self-Efficacy and Knowledge Scores (n=21)

	<u>Age</u> Pearson's Correlation r (p)	<u>Years of Teaching Experience</u> Spearman's Correlation r (p)
Self-Efficacy Pre-test	.30 (.10)	.41 (.02)
Retrospective Self-Efficacy	.45 (.04)	.49 (.02)
Self-Efficacy Post-test	.17 (.46)	.15 (.52)
Change in Self-Efficacy Pre-test to Post-test	-.17 (.46)	-.29 (.19)
Knowledge Pre-test	.01 (.97)	.19 (.31)
Knowledge Post-test	.23 (.31)	.13 (.58)
Change in Knowledge Pre-test to Post-test	-.13 (.56)	-.05 (.84)

Knowledge and age.

Correlations between age and knowledge scores were examined using the Pearson correlation coefficient (Table 8). Age of participants was not significantly correlated with knowledge scores. However, an inverse relationship is noted for age and change in knowledge scores but is not statistically significant. In other words, as age increases, there are smaller changes from pre-test to post-scores for knowledge, likely because they are relatively high to begin with.

Self-efficacy and years of teaching experience.

Correlation between years of teaching experience with self-efficacy scores were explored using the non-parametric Spearman's rho statistic because the data were not normally distributed. Years of teaching experience were positively associated with mean self-efficacy scores at both pre-test and retrospective pre-test ($p < .02$) (Table 8). This means participants who had been teaching longer had a higher level of self-efficacy to begin with. Completing the modules throughout the term may have confirmed their high levels of self-efficacy leading them to keep those high ratings on the retrospective pre-test.

Knowledge and years of teaching experience.

Correlation between years of teaching experience and knowledge scores were explored using the non-parametric Spearman's rho statistic. Years of teaching experience showed no significant correlations to knowledge scores.

PEP Feedback

Participants were asked to rate the helpfulness of the modules they completed (Table 9). Not all participants completed the modules or completed the questionnaire; therefore, the columns do not add up to the total number of participants completing the study ($n = 21$). Most participants found the modules they did complete to be very helpful or moderately helpful. Modules 5a and 5b were rated 'not helpful at all' by one participant.

Table 9

Participants Views on 'Helpfulness' of Modules (n=20)

PEP Module	Helpfulness (n)		
	Very Helpful	Moderately Helpful	Not Helpful At All
1 – <u>Orientation</u>	11	9	0
2 – <u>Developing Learning Objectives</u>	10	10	0
3 – <u>Giving/Receiving Informal Feedback</u>	12	8	0
4 – <u>Understanding/Fostering Clinical Reasoning</u>	6	12	0
5a – <u>Fostering Reflective Practice</u>	7	9	1
5b – <u>Advanced Topics in Reflective Feedback</u>	7	9	1
6 – <u>Dealing with Conflict</u>	10	7	0
7 – <u>The Formal Evaluation Process</u>	11	7	0

When participants were asked whether Queen's University School of Nursing should use the modules again, 18 participants reported yes and three indicated no. Twelve of those 18 participants chose to provide a comment. Seven mentioned that new or novice instructors would benefit the most from these modules. Three commented that they liked the helpful tips and concrete examples that the modules provided. Two participants thought the modules created a solid foundation from which they could create and

anticipate a plan for their semester. The three participants who recommended not using the modules provided no reasons for their recommendation.

Nineteen participants reported that seven weeks was enough time to complete the modules; one participant reported that seven weeks was not enough time and the others made no comment about time. Twenty participants said 'yes' when asked if they would refer to the modules again.

When asked the question, "what did you like most about the modules", sixteen comments were provided. Participants reported liking the fact that the modules were online and available at any time (n = 7). They mentioned that the website was well laid out and easy to navigate (n = 5). Participants mentioned that they liked the concrete and realistic examples provided in the modules along with the interactive capabilities (n = 4).

Participants were also asked to report what they liked least about the modules. A total of nine comments were given. Criticisms of the modules included that they were too monotonous, especially the module about reflective practice (modules 5a and 5b) (n = 5). Two participants had some technical difficulties, specifically, not being able to get sound while watching the videos. Others reported that they would have liked the modules to have been focused more specifically on nursing (n = 2)

Chapter 5

Discussion

The purpose of this research was to evaluate whether the use of the PEP online training program increased clinical instructor perception of self-efficacy regarding their clinical teaching skills, and whether there was an increase in knowledge about clinical teaching principles. This study found that there was a significant increase in self-efficacy and knowledge after completing the online PEP.

The current study population consisted of 31 clinical instructors, 29 (90%) of whom were term adjuncts who provided clinical instruction at the Queen's School of Nursing. Eleven (35%) were new to teaching, and twenty-one participants (65%) had received no formal training in teaching theory or clinical education. As was reported by other researchers (Forbes, Hickey, & White, 2010; Parsons, 2007; Penn, Wilson, & Rosseter, 2008; Robinson, 2009; Scanlan, 2001), more than half of the clinical instructors in this study also reported a lack of training in how to be a clinical teacher.

Self-Efficacy

The significant increase in perception of teaching self-efficacy mean scores of clinical instructors in this study from pre-test to post-test is consistent with a study of nursing preceptors. Parsons (2007) found that preceptor self-efficacy scores improved significantly after completing an online education program at both post-test and 1-month

post-test. Larsen and Zahner (2011) found a similar significant increase in self-efficacy scores at pre-test among preceptors after completing an online education program.

A control group is a group of subjects closely resembling the treatment group in many demographic variables but not receiving the factor under study and thereby serving as a comparison group when treatment results are evaluated. Due to the lack of a control group in this study, one cannot conclude that the online PEP directly affected the increase in self-efficacy scores. It is possible that the experience of teaching throughout the term contributed to the increase in self-efficacy from pre-test to post-test observed in this study. If a control group was used for future studies, testing whether the modules alone or practice alone led to the significant increase could be carried out.

Clinical instructors in this study may have also received support and education from mentors and course coordinators throughout the term. There was no evidence that the change in self-efficacy was related to the number of modules completed. However, with the small sample size, there may not have been enough data points to identify a trend if one did exist.

Mean retrospective teaching self-efficacy scores of clinical instructors were significantly lower than the mean self-efficacy pre-test scores. Sprangers and Hoogstraten (1988) noted that a respondent's perception of the construct under evaluation may change as a result of the educational intervention, leading to an underreporting by the respondent of any real change occurring between pre-test and post-test. The term 'response shift bias' refers to contamination or change in perception of the pre-test scores as a result of

receiving an educational intervention (McLeod, Steinert et al., 2008). This study used not only a pre-test post-test methodology, but also incorporated a retrospective inquiry. Results of this study show that there was a significant decrease from self-efficacy pre-test scores to retrospective self-efficacy scores. These results suggest that participants may have over-estimated their self-efficacy at pre-test and that a response-shift did occur. Similar results were found in a study by McLeod et al. (2008) who used a pre-test and a retrospective pre-/post-test assessment to evaluate their School of Medicine's annual faculty development program. These authors found a larger change in participants' self-assessments from pre-test to post-test when using the retrospective assessment. McLeod et al.'s results demonstrate the value of retrospective pre-tests to increase the validity of self-assessments for measuring faculty development programs and to help limit a response shift bias. It appears that once participants in this study completed the PEP and reflected back to their self-efficacy prior to the intervention, their frame of mind changed, which was also noted by other researchers (Drennan & Hyde, 2008; Moore & Tananis, 2009).

This change in a clinical instructor's self-assessment suggests that confidence may be falsely high in their ability to teach at the beginning of term. Perhaps the teaching experiences and/or the PEP content made clinical instructors in this study realize that their confidence levels were unrealistically high in the beginning. This might influence clinical instructors' willingness to participate in an educational intervention. If clinical

instructors have high self-efficacy regarding their teaching ability, they might feel it is unnecessary to participate in any educational offering.

An effect size is an objective and standardized measure of the magnitude of the observed effect (Field, 2005). Effect sizes are useful because they provide an objective measure of the importance of an effect. Even though the *t*-statistics were statistically significant for both self-efficacy and knowledge from pre-test to post-test in this study, that doesn't necessarily mean that the effect of the modules is important in practical terms. To discover whether the effect was substantive, the *t*-values were converted into *r*-values (Appendix L). Cohen (1988) has made widely accepted suggestions about what constitutes a large or small effect. Both *r*-values for this study fall into the medium and large effect size which supports even further the significant findings from this study.

The overall increase in self-efficacy scores from pre-test to post-test found in this study could be, but cannot be concluded that they were attributed to the sources of self-efficacy beliefs (Bandura, 1977). Self-efficacy beliefs are constructed from four principal sources: mastery experiences, vicarious experiences, verbal persuasion, and affective states. This online educational program touched on all four principal sources which could have led to the increase in perception of self-efficacy. Throughout the modules, participants were instructed to reflect on their past performances and beliefs, and practice such skills as writing learning objectives and evaluating learners (mastery experiences). The modules included short video clips that demonstrated teaching and learning concepts allowing participants to watch clinical instructors perform such skills as providing

effective feedback and helping students develop clinical reasoning (vicarious experiences). Verbal persuasion might have come from completing the modules and reading the tips and references available. Participants were encouraged to reflect on their experiences and write down their thoughts and feelings pertaining to each module (affective states).

Self-Efficacy and Demographic Variables

Age was significantly associated with retrospective mean self-efficacy scores ($r = .45, p = .04$). This result suggests that the older clinical instructors are, the higher their retrospective self-efficacy score. A possible explanation is that the older clinical instructors underestimated their teaching self-efficacy before the term began but after the experience of clinical instruction and after completing the PEP modules, they realized that they were more confident than they had initially thought. The intervention combined with the experience of teaching may have prompted the clinical instructors to reassess their competence in carrying out their teaching assignments (i.e., their self-efficacy).

No significant relationship was found between level of education and mean pre-test, retrospective, or post-test self-efficacy scores. This is not consistent with study findings reported by Yang et al. (2006) whereby the level of education and teacher qualifications were significantly positively associated with self-efficacy. The small sample size in the current study might have led to the nil findings of any correlation.

Years of teaching experience was significantly correlated with mean self-efficacy score at both pre-test ($r = .41, p = .02$) and retrospective test ($r = .49, p = .02$). These results show that those who have taught longer rate themselves as having higher self-efficacy before the intervention, and when recalling their self-efficacy pre-test once the intervention was complete. It suggests that those who have taught longer may be more confident in their teaching abilities in the beginning than clinical instructors with less experience.

Overall, there were only three significant findings when nine relationships between self-efficacy and different demographic variables were explored. This was not what was expected based on Bandura's (1977) theory of self-efficacy. The primary researcher expected that more education, more years of teaching experience, and more life experience that comes with age would have lead to a higher self-efficacy. It is possible that the small sample size meant that this study was underpowered to detect significant relationships if they did exist between teaching self-efficacy and demographic variables.

Although there were no statistically significant relationship between teaching self-efficacy and level of education, there were trends within the data that are worth mentioning. Participants who held a master's degree obtained higher scores than baccalaureate degree prepared instructors on all self-efficacy scores. These trends suggest that master's prepared participants started off with higher self-efficacy scores than baccalaureate prepared participants. Change scores from pre-intervention to post-

intervention for self-efficacy scores were lower for the master's prepared instructors when compared to baccalaureate instructors. This suggests that since the master's prepared instructors had higher self-efficacy scores than baccalaureate prepared instructors at pre-test, there was less room to improve, and therefore a lower change score was noted.

Although not significant, a similar trend of interest worth noting is the relationship between age and self-efficacy change scores. An inverse relationship exists between age and self-efficacy change scores. In other words, as age increases, changes from pre-test to post-test for self-efficacy were smaller. A possible explanation could be that the older clinical instructors had higher self-efficacy at the beginning of term before the intervention began.

Although not statistically significant, another trend worth mentioning is the negative correlation between years of teaching experience and the self-efficacy change scores suggesting that as teaching experience increases, less of a change in self-efficacy was seen from pre-test to post-test. A possible explanation for this relationship is that those with more experience have higher self-efficacy scores to begin with and therefore have less room to improve.

Knowledge

As hypothesized, knowledge scores increased significantly from pre-test to post-test. Results were similar in a study by Dubowy et al. (2006) where they introduced a

web-based program on childhood cancer to public school teachers. Similar results were found in a study by Zahner et al. (2009) where researchers assessed the feasibility of using an online continuing education course to increase knowledge and self-efficacy in nurse preceptors and their knowledge increased from pre-test to post-test. Larson and Zahner (2011) also found an increase in knowledge from pre-test to post-test when exploring the relationship between the completion of a web-based preceptor education program on self-efficacy and knowledge in nurse preceptors.

No significant relationship was found between knowledge scores and level of education, age, or years of teaching experience in this study. There was no statistically significant relationship between the self-efficacy scores and the knowledge scores at any of the administration times. This was similar to the study by Parsons (2007) and Larson and Zahner (2011) where self-efficacy scores and knowledge scores were independent of each other.

In the present study with no control group, whether or not the increase in knowledge scores was the result of the PEP content could not be concluded. It is possible that the experience of teaching throughout the term contributed to the increase in knowledge from pre-test to post-test. Clinical instructors may have received education from mentors and course coordinators throughout the term which also might have led to an increase in knowledge scores.

In this study, the questionnaire to measure knowledge was focused on the PEP content. The questions were developed to test information specific to the PEP modules, not necessarily the knowledge that clinical instructors gained from nursing education, years of teaching experience, or even age. For this reason, it was not surprising that there was no significant relationship between demographic variables and PEP-specific knowledge.

PEP Modules – Online Education

Online education has become a popular channel to disseminate information and educate individuals. Online education provides people with a flexible learning environment from any location with internet connection. Huckstadt and Hayes (2005) examined two interactive online e-learning modules for advanced practice nurses. Feedback from their study was similar to the feedback reported in this study in that the main attraction was easy and convenient access. The PEP was also found to be self-paced and flexible. Genrich and Papas (1997) found a similar theme of ‘flexibility’ when completing their qualitative evaluation of an online nursing faculty orientation program where faculty noted the importance of flexibility in terms of time and resources.

The participants in this study reported that the online education was easy, hands-on, fun, and interactive. They noted that the PEP modules allowed them to be exposed to new knowledge in a supportive environment where they could readily explore the material. Bandura (1977) believed that positive experiences from the four sources of self-efficacy can contribute to the formation of high self-efficacy, whereas negative

experiences generally contribute to the formation of low self-efficacy (Saka & Surmeli, 2010). Participants' comments in this study suggest that participants had an overall positive experience with the PEP, which could have contributed to their significant increase in self-efficacy according to Bandura's theory.

Drawbacks to traditional methods of educating clinical instructors (eg. workshops, courses, training) include limited number of programs, lack of access, and limited time to attend. The availability and easy access of the PEP make it a desirable channel for delivering a clinical instructor education program.

A challenge of online education programs is the need for technological knowledge amongst participants. One participant reported having difficulties with sound and watching the videos properly which was a barrier to delivery of the educational material. Phillips (2006) also noted lack of technological preparation and knowledge as a disadvantage of online education. Since only one participant reported problems with the technology of the modules, this suggests that most participants were comfortable with the technology. The lack of technological knowledge is not expected to be a major problem in the future particularly with younger people; however it should be taken into consideration.

Limitations

Despite mechanisms employed to ensure rigor and reduce bias, several limitations may be inherent in this study. A limitation of the pre-test/post-test design in an educational intervention is that the pre-test may sensitize participants to the intervention

and change the way that they respond to the intervention (Stommel & Wills, 2004). If there were a non-intervention control group in this study, this effect could be examined. A Solomon four-group design would have been the ideal experimental design to use. The Solomon four-group design uses various combinations of tested and untested groups with treatment and control groups which allow the researcher to control for confounding variables and extraneous factors that could influence results (McGahee & Tingen, 2009). A total of four groups would have been needed with enough numbers so that any unforeseeable drop-outs would not affect the outcome. Given the limited number of clinical instructors at Queen's School of Nursing and the large turnover in clinical instructors from year to year, this would require expansion of the study to more than one school of nursing or longer multi-year study.

Another limitation is the potential bias that is present from those who did not complete the study. Experienced teachers were less likely to complete the online modules in its entirety. This may have had an effect on the results of the self-efficacy post-test and knowledge post-test scores.

Strengths

The strength of the study was the pre-/post-test design that included a retrospective pre-test measure, where subjects served as their own control. The subjects in this study represented almost all clinical nursing instructors from a single school of nursing. The small non-random sample from a single institution may help with the

generalizability of the findings to Queen's School of Nursing. Although a small number within the school were not eligible for participation and a small number declined participation, the sample population included the majority of instructors.

Ultimately the overriding strength of this study was that we were testing the effectiveness of an intervention that addresses a gap at Queen's University School of Nursing. This research study also contributes to the literature available in this field.

Implications

Significant improvements in self-efficacy and knowledge were found after completing the online PEP modules. The PEP modules were accepted among the participants of this study. The online PEP modules opened up a world of opportunity for clinical instructors at the Queen's University School of Nursing. Clinical teachers are the common link between students and all healthcare settings. They possess invaluable knowledge related to the clinical setting. In the future, education of clinical instructors is necessary. It is known through the literature that clinical expertise is pivotal to being a good teacher, but it is not sufficient by itself. Universities need to consider providing a thorough orientation along with ongoing faculty development for nursing clinical instructors. Finding a way to educate clinical instructors may be the key to providing quality education to nursing students.

To the author's knowledge, this study is the first to evaluate an existing online educational intervention with nursing clinical instructors and valuable lessons can be

learned for future studies in this area. To increase the sample size in any future studies, it may be beneficial to partner with other education institutions. Greater numbers of participants will be needed in future studies to determine if an online intervention such as the PEP is enough to increase self-efficacy and knowledge. For the current study, we hypothesized that clinical instructors who completed the seven PEP modules would have increased their perception of self-efficacy regarding their clinical teaching skills. Future studies could expand on findings from this study and examine the contribution of each of the modules to clinical instructors' behaviour in the clinical setting. This could be completed by carrying out student evaluations of their clinical instructors once they have completed the PEP modules to see whether they directly altered their clinical teaching behaviours.

Another implication for future research would be to find out the specific barriers that exist to not completing the modules in full. Since not all of the participants fully completed each module, one would want to know why this was the case. These answers could help better understand the modules from a program development view.

This study measured module completion via participant self-report measures. The most important part of program evaluation is fidelity to a program by its participants. Perhaps in future studies, an online mechanism could be set in place that shows how long each participant spent on each module. This would give us more accurate data in terms of module completion.

Conclusion

This study provides initial evidence for the effectiveness of an online education program for improving both perceptions of self-efficacy, and knowledge with a sample of clinical instructors from Queen's University School of Nursing. The objective of this study was to evaluate the effectiveness of the online PEP for increasing clinical instructors' perception of self-efficacy to perform the teacher role and instructors' knowledge about the key concepts presented in the PEP online training program. This objective was met and significant increases in both self-efficacy and knowledge were found. Given the small sample size, the fact that some results were statistically significant is impressive. It was anticipated based on sample size calculations that a larger sample size was needed to achieve statistical significance yet the author detected statistical significance with this small sample size. However, in the absence of a control group it is not possible to attribute the significant increase in self-efficacy and knowledge to the PEP modules.

Descriptive data regarding participants' satisfaction with the PEP modules was gathered; clinical instructors for the most part completed the PEP modules and were very satisfied with them. This online mode of clinical instructor education appears to be a feasible, facilitative and an accessible way to provide ongoing professional development and education for clinical instructors.

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Appendix A

Comparison of PEP and Stanford Faculty Development Program

Stanford Faculty Development Program		Preceptor Education Program (PEP)	
Component	Content	Module	Content
1	<i>The Learning Climate</i> – “refers to the tone of atmosphere of the teaching environment. It reflects the degree of simulation, enthusiasm, comfort and excitement generated by the teaching process” (p.526)	1	<i>Orientation</i> – outcome goals include: establishing a relationship, learning about key elements to a successful orientation, understanding the importance of welcoming a student into the clinical setting
2	<i>Control of Session</i> – “refers to the task management approaches a teacher uses to focus and pace a teaching interaction. This component reflects the teachers ability to address relevant teaching topics efficiently” (p.527)	1, 2	<i>Orientation & Developing Learning Objectives</i> – outcome goals include: establishing a strong relationship between teacher/student, learning about key elements to a successful orientation, to develop learning objectives to ensure both student and teacher are striving to meet the same goals
3	<i>Communication of Goals</i> – “concerns the process by which teachers establish and communicate the expectations for students. Including what experiences the learner should have, but also what attitudes, knowledge and skills	2	<i>Developing Learning Objectives</i> – outcome goals include: developing learning objectives to ensure both students and teachers are striving to reach the same placement goals. This deliberate

	should be acquired in the learning process” (p. 528)		planning will help to ensure that productive objectives are developed and that they are consistent with placement requirements, student experience and skills, facility policies and procedures, available opportunities, and workload challenges
4	Promotion of Understanding & Retention – “this category pertains to the teaching methods used in a learning experience with specific emphasis on whether the methods used are likely to enhance the learners understanding and retention of the educational goals” (p. 528)	4	Understanding and Fostering Clinical Reasoning – outcome goals include: being able to articulate the value of understanding and developing clinical reasoning skills, identify the tenets of clinical reasoning, identify different ways thinking about, developing and teaching clinical reasoning skills
5	Evaluation – “consists of the process used to determine whether learners are achieving desired goals, e.g knowledge, skills, and attitudes. Evaluation may include observation or questioning of a learner to examine his/her abilities” (p. 529)	7	The Formal Evaluation Process – outcome goals include: being able to understand the evaluation process, differentiate between an observation and a judgement, identify several methods of collecting information in preparation for the formal evaluation, discover ways to assist the faltering or failing student

6	<p>Feedback – “consists of the process by which the teacher provides information to the learners about their behaviour for the purpose of improving their performance” (p.529)</p>	3	<p>Giving and Receiving Informal Feedback – outcome goals include: being able to understand the importance of feedback in practice education and learn how to set the stage for the feedback process, discover how to effectively incorporate feedback into the daily partnership between preceptor and student, understand how to adjust feedback to the experience level of the student</p>
7	<p>Promotion of Self-Directed Learning – “refers to an individual learner/s initiative to identify and act on his/her needs, with or without the assistance of others. This component of the framework includes the processes by which a teacher encourages learners to use methods to continue learning throughout their career” (p.530)</p>	4, 5	<p>Understanding and Fostering Clinical Reasoning – outcome goals include: articulate the value of understanding and developing clinical reasoning skills, identify the tenets of clinical reasoning, identify different ways thinking about, developing and teaching clinical reasoning skills</p> <p>Fostering Reflective Practice - Increase preceptor and student knowledge of the rationale and benefits of reflective practice, identify various types of reflection, learn strategies to</p>

			incorporate reflection into professional practice and into the student-teacher learning relationship
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Skeff, K. (1987). Enhancing teaching effectiveness and vitality in the ambulatory setting. *Journal of General Internal Medicine*, 3, 526-533.

Bossers, A., Bezzina, M. B., Hobson, S., Kinsella, A., MacPhail, A., Schurr, S., Moosa, T., Rolleman, L., Ferguson, K., DeLuca, S., Macnab, J. & Jenkins, K. *Preceptor Education Program*. Retrieved April 25, 2010, from <http://www.preceptor.ca/index.html>

Appendix B

Letter of Permission

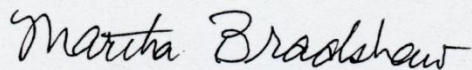
BAYLOR

14 July 2010

Dr. Albert Clark
Chair, Ethics Board
Queen's University Health Science Research Ethics Board
Ontario, Canada

To the Ethics Board:

I am granting permission for Kristen Bolton, an MSc student at Queen's University, to use a modified version of the Self-Efficacy toward Teaching Inventory (SETTI) that was part of original research by myself and Dr. Katherine Nugent. The article on the completed research was published in the *Journal of Professional Nursing* in 1999 (volume 15, issue 4, pages, 229-237). It is my understanding that the modifications to the SETTI are being made in order to best address the research questions that are part of Ms Bolton's thesis, with the intent of determining how to increase self efficacy in clinical instructors. I have had frequent communication with Ms. Bolton about the SETTI and have answered questions that assist her in making the needed modifications.



Martha J. Bradshaw, RN, PhD
Professor, Louise Herrington School of Nursing
Baylor University
3700 Worth St.
Dallas, TX 75246
214.820.4197

Appendix C

Information Letter and Consent Form



TITLE OF PROJECT: Effects of an Online Education Program on Self-Efficacy and Knowledge of the Clinical Teacher Role: A Study with Nursing Clinical Instructors

PRIMARY INVESTIGATOR: Kristen Farrell, Masters of Science Thesis Student

SUPERVISOR: Dr. Judy DeWolfe, PhD, Assistant Professor, School of Nursing

You are being invited to participate in a research study to evaluate a series of online learning modules that are being introduced by the Queen's University School of Nursing during the Fall, 2010 semester. This study is being conducted by Kristen Farrell, a Master's in Nursing graduate student, as a part of her thesis project at Queen's University.

BACKGROUND INFORMATION:

Clinical teaching is demanding work requiring clinical instructors to be competent educators and clinical nursing experts. Clinical instructors who come directly into the academic setting from clinical practice are often surprised at the informality of the orientation they receive. Many clinical nurses who venture into teaching have not had courses in classroom instruction or training in how to be an effective clinical instructor. No formal training for clinical and lab instructors exists at the present time. The online modules are intended to fill this gap at Queen's University School of Nursing.

The Queen's University School of Nursing is introducing online modules for all clinical and lab instructors starting in the Fall 2010 semester. These modules will be introduced during orientation day for clinical and lab instructors on September 8th. A verbal explanation about the modules will be provided during orientation day in order that clinical and lab instructors can begin completing them if they choose.

What are the modules?

The seven online modules are intended to help you in your work as a clinical or lab instructor. The intent of the modules is for you to work through them to better prepare yourself for upcoming clinical placements. Included in the modules is the use of multi-media

technology which includes tips, references, reflection notes, quizzes and video clips. A certificate of completion can be printed after completing the modules. Each week as you work through the modules, you will be sent an email reminder to complete the modules. The email will also include tips relevant to clinical and lab instructors.

How will the modules be evaluated?

The primary investigator wants to learn if the modules help you to become more knowledgeable about teaching university students and whether your teaching self-efficacy increases. Teaching self-efficacy may be defined as one's confidence in his/her own teaching abilities. We also want your opinions about whether or not you liked the modules and whether you found them helpful.

Do I have to participate in the research?

The School of Nursing is requesting that all clinical and lab instructors complete the online modules during the Fall 2010 semester. However, you do not have to participate in the research component that evaluates the usefulness of the modules. Whether or not you decide to participate in the research, you can still complete the modules and send the certificate of completion to the School of Nursing.

DETAILS OF THE STUDY:

Why should I participate?

Your participation will help the School of Nursing determine if the online modules are helpful to clinical and lab instructors in becoming more knowledgeable and confident in their teaching abilities. This information, in-turn, will help the school determine whether they should continue to request that clinical and lab instructors complete the modules.

If I do agree to participate in the research, what will I be asked to do?

1. Read and sign the enclosed consent form.
2. Complete the enclosed questionnaires. This should take no longer than 20 minutes.
3. Return the completed documents to the School of Nursing using the envelope provided. If you wish, you may bring the completed documents to the faculty orientation day on September 8th, 2010.
4. Complete the online modules on your own time by October 29th, 2010.
5. Complete the post-test questionnaires that will be sent to you by November 1st, 2010. These should take no longer than 20 minutes to complete.
6. Return the completed documents to the School of Nursing using the envelope provided by November 12th, 2010.

What are the risks of participating?

There are no risks to your participation in this study.

What are the benefits of participating in this research?

While you may not benefit directly from participating in this research, the information gained from the study may help improve understanding of the benefits of using online modules for assisting clinical and lab instructors in their instructional role.

Upon study completion and receipt of all documents by the School of Nursing, your name will be entered into a draw for a Spa Gift certificate, or its cash equivalent (\$100.00). You will also receive a Starbucks Gift Card (valued at \$5.00) as a token of appreciation.

Are there any exclusions?

All clinical and lab instructors who are hired to provide clinical instruction for the 2010-2011 academic year in the undergraduate program at Queen's University School of Nursing can participate in this study.

What about confidentiality?

All information that you supply during this study will be held in confidence. Your name and other identifying information will be stored in a locked file and available only to the primary investigator. The questionnaires will be identified with a code number, will contain no identifying information, and will be locked in a file cabinet that is accessible only by the primary investigator and thesis supervisor. Your name will not appear on any publication and/or report resulting from the research.

All individual answers will be combined with that of other clinical instructors before it is shared with the School of Nursing or published. When answers are compared with demographic data, only data with 5 or more participants will be reported. For example, if there are less than five male clinical instructors, the knowledge and self-efficacy scores of male instructors will not be reported separately.

No information collected as a part of this research will become a part of your personnel file.

Can I refuse to participate?

Your participation in this research study is voluntary. If you choose to participate, you can stop your participation at any time. Your decision to not volunteer will not influence the nature of your relationship with Queen's University now, or in the future.

If you choose not to participate in the research, you can still complete the online modules. You may also print the completion certificate and have it placed on your personnel file at the School of Nursing.

SUBJECT STATEMENT AND SIGNATURE SECTION:

I agree to participate in the study evaluating whether completing the online modules leads to an increase in teacher self-efficacy and knowledge. I have read the information about this research study and have had an opportunity to ask questions about the purpose, procedures,

Appendix D
Demographic Questionnaire

Tell Us About Yourself

1. Are you a **Clinical instructor** ____ **Lab instructor** ____ or **Both** ____
2. Are you **Male** ____ **Female** ____
3. What is your date of birth?
Day ____ **Month** ____ **Year** ____
4. What is your rank at the Queen's School of Nursing?

Academic Staff ____ **Term Adjunct** ____
5. What is the highest level of Education you have completed?

RN degree ____ **Masters** ____ **PhD** ____ **other (please specify)** _____
6. Is this your first time being a clinical/lab instructor in any educational program?

Yes ____ **No** ____
If No, how long have you been a clinical/lab instructor in any educational program?

Years ____ **OR Terms** ____
7. Is this your first time being a clinical/lab instructor at Queen's University School of Nursing?

Yes ____ **No** ____

If No, how long have you been a clinical/lab instructor at Queen's University School of Nursing
Years ____ **OR Terms** ____
8. Have you had any previous training or participated in any professional development activities to help you develop your skills for clinical instruction?

Yes ____ **No** ____
If yes, please describe (please use the back of this page)

Appendix E

Self-Efficacy Towards Teaching Inventory Pre-Test

Please rate how confident you are in your ability to be effective in each of the following teaching skills and behaviors on a scale of 1 to 4. Please place a check mark in the appropriate box to the right of the question.				
	1 (Not confident)	2	3	4 (Completely Confident)
	Not Confident			Completely Confident
How confident are you in your ability to	1	2	3	4
1. state goals and objectives clearly for the students				
2. plan lectures and post-conferences				
3. plan discussions				
4. plan exercises				
5. state and cover grading of assignments				
6. deliver lectures and post-conferences				
7. select and use a variety of teaching Strategies				
8. initiate group discussion				
9. draw students into discussion				

	Not Confident			Completely Confident
	1	2	3	4
10. communicate at a level that matches students ability to comprehend				
11. ask open, stimulating questions				
12. recognize and respect individual differences				
13. manage student disagreements				
14. communicate consistently both verbally and non-verbally				
15. show respect for student ideas and abilities				
16. respond appropriately to students questions				
17. respond to student emotional reactions in lab or clinical				
18. integrate readings into labs and clinical				
19. evaluate student assignments				
20. provide constructive feedback on exams, assignments and OSCEs				
21. develop teaching strategies that promote critical thinking				
22. set clinical expectations that are appropriate for the level of the learner, given the learners academic and clinical background				
23. modify clinical and lab strategies based on learner's level of performance				
24. ask questions in a lab or clinical setting that stimulate problem-solving				
25. provide constructive feedback on exams, OSCE's and assignments				
26. demonstrate confidence in the student				

27. assist student in new patient care and lab situations				
28. stimulate the student to want to learn professional behavior and competence				
	Not Confident			Completely Confident
	1	2	3	4
29. adjust clinical and lab assignments to individuals level of performance and confidence				
30. use evaluation criteria to determine student`s lab and clinical performance				
31. record and use subjective observations as part of clinical and lab evaluation				
32. identify a student having academic or clinical difficulty				
33. direct or advise students who are experiencing academic or clinical difficulty				
34. conclude a student`s clinical or lab performance as failing				
35. confront a student with a failing course or clinical grade				
36. utilize self evaluation in teaching				
37. arrange for constructive feedback and suggestions				
38. use evaluations from students to improve teaching				
39. evaluate the outcomes of a lab or clinical course				

From: Nugent, K., Bradshaw, M. & Kito, N. (1999). Teacher-self-efficacy in new nurse educators. *Journal of Professional Nursing, 15(4)*, 229-237

Appendix F

Knowledge Questionnaire

Please complete the following questions without referring to any reference material's including online modules

1. What information do students need on the first day of a clinical course?
 - a) How to receive feedback non-defensively
 - b) The variety of services available at the clinical agency or lab
 - c) The learning opportunities available at the clinical agency or lab
 - d) Legal requirements specific to the facility

2. In the relationship between clinical instructor and student, which tasks are shared by the teacher and the student?
 - a) Listen Actively
 - b) Providing Corrective Feedback
 - c) Taking Initiative for Learning
 - d) Inspiring Performance

3. Why encourage students to develop their own learning objectives?
 - a) To help students take responsibility for learning
 - b) To account for student's prior learning experiences
 - c) To identify students' strengths and weaknesses
 - d) To evaluate and grade students' performance

4. Which is an example of a really useful learning objective that a student might write?
 - a) I will become aware of community resources available for the patient
 - b) I will feel more comfortable providing care for the patient
 - c) I will recognize the role of the nurse in patient care
 - d) I will demonstrate safe transfer of the patient from the bed to the chair

5. Which is an example of constructive feedback?
- a) “You did a really good job with that procedure! Keep up the good work!”
 - b) “I was impressed with the way you handled that situation. Well done!”
 - c) “That was good for your first time. Next time, ask for help before you start the procedure.”
 - d) “You followed the right procedure until step #4. Review step #4 and try again”
6. The following statement is an example of what kind of feedback?
“What were you thinking when you did that dressing change? Did you not learn anything from the readings?”
- a) Positive feedback
 - b) Negative feedback
 - c) Destructive feedback
 - d) Constructive feedback
7. What can the clinical instructor do to help students develop their clinical reasoning skills when they are learning to develop a patient care plan?
- a) Show the student how you would develop the patient’s care plan
 - b) Give students several examples of patient care plans as models
 - c) Ask students to work in pairs to develop the patient care plan
 - d) Talk out loud as you demonstrate how you would develop the patient’s care plan
8. What is meant by ‘procedural reasoning’?
- a) Reasoning based on knowledge of disease, treatment approaches, and theory
 - b) Reasoning that comes from experience
 - c) Reasoning that focuses on the person
 - d) Reasoning that focuses on long term goals
9. What is meant by reflective practice?
- a) Examining your assumptions
 - b) Providing client-centered care
 - c) Keeping up-to-date in nursing knowledge
 - d) Keeping a journal of nursing practice

10. What is meant by the 'pause model' of reflective practice?
- a) When some event causes the student and clinical instructor to pause during practice and reflect on the next step to take
 - b) When the clinical instructor asks the student to stop and do more research before continuing
 - c) When the student stops for feedback from the clinical instructor before going on to the next step
 - d) When the student and clinical instructor postpone practice until more research can be done
11. What is a learning journal?
- a) A record kept by the clinical instructor to student's learning needs
 - b) A record kept by the clinical instructor to record teaching experiences
 - c) A record kept by the clinical instructor to document course objectives met by the student
 - d) A record kept by the student of errors made during clinical practice
12. Which statement would the clinical instructor make to initiate a reflective conversation with a student?
- a) "I was interested to see how you approached that patient."
 - b) "Could you tell me the steps you followed in that procedure?"
 - c) "What problems do you foresee if you give that medication?"
 - d) "Why do you think the patient reacted that way?"
13. When would it be appropriate to use an avoidance style of conflict management?
- a) When the conflict is between two students in your clinical group
 - b) When the conflict is between the student and a member of the nursing staff
 - c) When you need time to reflect on how to approach the conflict
 - d) When you believe conflict will go away on its own

14. What would be an appropriate way to begin a discussion with a student with whom you have a conflict?

- a) “Your behaviour is putting the patient at risk.”
- b) “I have a problem with the way you are approaching your learning”
- c) “I would like you to research the patient’s condition before you come to clinical practice”
- d) “Your actions make me feel that you are not prepared for clinical practice.”

15. Which statement is appropriate for a formal written evaluation form?

- a) The student seemed disinterested
- b) The student lacked motivation
- c) The student arrived late
- d) The student lacked empathy

16. Which of the following describes the term “halo effect” which can be a common pitfall when evaluating a student?

- a) A clinical instructor may describe a student as “average” or “fair” when not enough specific information has been obtained prior to engaging in the written or verbal formal evaluation process.
- b) A clinical instructor evaluates the student using herself as the standard.
- c) A clinical instructor avoids providing critical elements within the evaluation.
- d) A clinical instructor makes a sweeping judgment of the student’s performance based on one or two incidents.

Appendix G

Study Reminder Emails

Email #1

Hi Everyone,

I hope everyone is enjoying this Thanksgiving weekend. This is another friendly reminder about the online PEP modules.

Tip of the week: “Promoting Clinical Reasoning”

When in clinical, talk out loud so your student’s can hear what is going on in your head. It is difficult for students to follow the steps you take. They happen so fast that the student only sees the end result – missing everything that’s gone on in your head. Students tend to think with procedural reasoning only and miss the purpose of the steps being taken. Students can’t learn simply by always watching actions, try to share your continuous thought revisions.

Asking students the “what” and “why” questions about their clinical decisions should be encouraged. Although students can often be intimidated by these questions, risking the chance that they might be embarrassed if they do not know the answer, it is good to force them to think this way. If you don’t know **why** you are doing something then you really need to stop and re-evaluate **what** you are doing.

Please refer to the modules for more information on this topic.

Enjoy the rest of your long weekend.

Sincerely Kristen Farrell

Email #2

Hi Everyone,

I hope you’re all settling into the fall term. I just wanted to send another friendly reminder about the online PEP modules. You still have plenty of time to complete them before the end of October. If anyone is having difficulty accessing or using the modules and needs some assistance, please feel free to contact me.

Key Point of the week: When providing feedback to your students, give brief feedback of directly observed encounters throughout the day - with two to three key prioritized points.

Encourage the student to give their own perspective on the situation being discussed *first*. Then follow their response with your perspective. This approach helps to promote clear communication and avoid misunderstandings.

If you have any other questions regarding how to give feedback, please refer to Module 3 for more information.

Thanks again for participating.

Sincerely
Kristen Farrell

Email #3

Hi Everyone,

I hope everyone is enjoying this Thanksgiving weekend. This is another friendly reminder about the online PEP modules.

Tip of the week: In the Module 4 entitled “Understanding and Fostering Clinical Reasoning” there is a section at the end of the module titled “Tips and Tools”. Located here are tips and perspectives for both students and instructors to view in order to gain a better understanding of clinical reasoning.

Students Perspectives on clinical Reasoning

“Awareness is a huge part of learning. You can read the definition of clinical reasoning, but until you truly understand it as the backbone of the profession it will be difficult to learn. We as students focus so hard on the SKILLS, that we are unable to see all that goes on behind the scenes.”

Tips from a Student on Clinical Reasoning

Talk out loud while reasoning so your student can hear what is going on in your head. It is difficult for students to follow the steps you take. They happen so fast that the student only sees the end result – missing everything that’s gone on in your head. Students can’t learn simply by watching your actions, try to share your continuous thought revisions.

Encourage ‘what’ and ‘why’ questions.

Ask students the “what” and “why” questions about their clinical decisions has some value, but sometimes it is the worst thing for students because it makes us think...and there is such a high risk of looking foolish! But, students should be encouraged to always ask themselves those questions. If you don’t know **why** you are doing something then you really need to stop and re-evaluate **what** you are doing.

Please refer to the modules for more information on this topic.

Enjoy the rest of your long weekend.

Sincerely Kristen Farrell

Email #4

Hello Everyone,

Time is dwindling down to complete the online PEP modules. I just wanted to send another friendly reminder to everyone.

Quick tip:

Taking time to examine a critical event that occurs in clinical practice is one of the most effective ways to engage in reflective practice and to learn from experience.

A critical incident can be:

1. An incident that is an extraordinary experience.
2. An incident that went well.
3. An incident that didn't go as planned.

To start teaching how to analyze a critical event, have your students ask themselves the following questions.

1. Discuss the situation briefly and describe details.
2. What did you learn from this situation?
3. How will this affect your future practice?

Sincerely

Kristen Farrell

Email #5

Hi Everyone,

I just wanted to thank everyone again for taking part in my research study. There is potential here to fill a large gap that currently exists at the school of nursing for clinical and lab instructors.

You have roughly one more week to complete the modules and then you will be mailed a post-intervention package to complete. Once I have received these packages back your name will be put in the draw for the gift certificate!

Quick tip:

Conflict occurs frequently in relationships. Conflict between teachers, students and other health care professionals are more common than you think.

A simple exercise to assist you to work through conflicts is to use the OBEFA method.

OBEFA

- Open Statement – “I have a problem . . .”
- Behaviour – “When you do X . . .”
- Effect – “The consequences are Y. . .”
- Feelings – “This makes me feel Z. . .”
- Action – “I would like us to resolve this problem together . . .”

Have a great week!

Kristen Farrell

Email #6

Hi everyone,

Your time is up! I hope everyone has had an opportunity to go through most if not all of the online PEP modules. I will be mailing out packaged the start of the week for everyone to fill out. They should take no longer than 20 minutes. You can drop them off to my mailbox at the school of nursing when you get a chance.

Quick Tip:

The formal evaluation can be a daunting event for both student and preceptor. Yet, this process often has a lasting impact on the student’s development both professionally and clinically.

When meeting with your students for your final evaluation, here are some tips to follow:

1. Give the student balanced feedback, both positive and constructive.
2. Be specific, give examples, use action verbs.
3. Discuss differences in evaluation from your evaluation to the students self evaluation.
4. Indicate whether performance expectations were met and identify areas for future improvement, complete in ink and sign.

Appendix H

Self-Efficacy Towards Teaching Inventory

Retrospective Pre-test/Post-test

Retrospective Pre-Test – Think back to the way you felt at the beginning of the term and rate how confident you were in your teaching skills on a scale of 1 to 4. Please place a check mark in the appropriate box to the first column to the right of the question.

Post-Test – Next, think about how confident you are now in your teaching skills on a scale of 1 to 4. Please place a check mark in the appropriate box to the far right column of the question.

	How you felt before the term				How you feel now			
	Not Confident 1	2	3	Completely Confident 4	Not Confident 1	2	3	Completely Confident 4
How confident are you in your ability to								
1.state goals and objectives clearly for the students								
2. plan lectures and post-conferences								
3. plan discussions								
4. plan exercises								
5. state and cover grading of assignments								
6. deliver lectures and post-conferences								
7. select and use a variety of teaching strategies								
8. initiate group discussion								

9. draw students into discussion									
	Not Confident 1	2	3	Completely Confident 4		Not Confident 1	2	3	Completely Confident 4
10. communicate at a level that matches students ability to comprehend									
11. ask open, stimulating questions									
12. recognize and respect individual differences									
13. manage student disagreements									
14. communicate consistently both verbally and non-verbally									
15. show respect for student ideas and abilities									
16. respond appropriately to students questions									
17. respond to student emotional reactions in lab or clinical									
18. integrate readings into labs and clinical									
19. evaluate student assignments									
20. provide constructive feedback on exams, assignments and OSCE's									
21. develop teaching strategies that promote critical thinking									
22. set clinical expectations that are appropriate for the level of the learner, given the learners academic and clinical									

background										
23. modify clinical and lab strategies based on learner's level of performance										
24. ask questions in a lab or clinical setting that stimulate problem-solving										
25. provide constructive feedback on exams, OSCE's and assignments										
		Not Confident 1	2	3	Completely Confident 4		Not Confident 1	2	3	Completely Confident 4
26. demonstrate confidence in the student										
27. assist student in new patient care and lab situations										
28. stimulate the student to want to learn professional behavior and competence										
29. adjust clinical and lab assignments to individuals level of performance and confidence										
30. use evaluation criteria to determine student's lab and clinical performance										
31. record and use subjective observations as part of clinical and lab evaluation										
32. identify a student having academic or clinical difficulty										
33. direct or advise students who are experiencing academic or clinical difficulty										
34. conclude a student's clinical or lab performance as failing										

35. confront a student with a failing course or clinical grade									
36. utilize self evaluation in teaching									
37. arrange for constructive feedback and suggestions									
38. use evaluations from students to improve teaching									
39. evaluate the outcomes of a lab or clinical course									

From: Nugent, K., Bradshaw, M. & Kito, N. (1999). Teacher-self-efficacy in new nurse educators. *Journal of Professional Nursing, 15(4)*, 229-237.

Appendix I

Post Program Feedback Form

Using the following 4-point scale, please indicate whether you completed the modules. Please place a check mark in the appropriate box. If you check 'None' for any of the modules, please explain.

- | | |
|-----------------|---|
| Fully | I read all the content, watched the video clips, and completed all the activities. |
| Mostly | I completed at least half of the module. |
| A little | I completed less than half of the module. |
| None | I did not look at the module (please explain). |

Module #	Title/Content	Fully	Mostly	A little	None	If None, please explain
1	Orientation – Welcoming the Student, Roles and Expectations					
2	Developing (Really Useful) Learning Objectives					
3	Giving and Receiving Informal Feedback					
4	Understanding and Fostering Clinical Reasoning					
5a	Fostering Reflective Practice					
5b	Advanced Topics in Reflective Practice					
6	Dealing with Conflict					

7	The Formal Evaluation Process					

Was the content of the modules helpful? Please place a check mark in the appropriate box.

Very Helpful Moderately Helpful Not at all Helpful

Module #	Title/Content	Very Helpful	Moderately Helpful	Not at all Helpful
1	Orientation – Welcoming the Student, Roles and Expectations			
2	Developing (Really Useful) Learning Objectives			
3	Giving and Receiving Informal Feedback			
4	Understanding and Fostering Clinical Reasoning			
5a	Fostering Reflective Practice			
5b	Advanced Topics in Reflective Practice			
6	Dealing with Conflict			
7	The Formal Evaluation Process			

1. Would you recommend using the modules as part of the orientation for clinical instructors and lab instructors in the future years?

Yes ____

Please explain

No _____

Please explain

2. Did you have enough time to complete the modules?

Yes _____

No _____

If No, how much time would you recommend _____

3. Will you refer to the modules in the future as a reference if an issue arises?

Yes _____

No _____

4. Did you partake in any other professional development activities related to clinical instruction throughout the term?

Yes _____

Please explain

No _____

5. What did you like **most** about the modules?

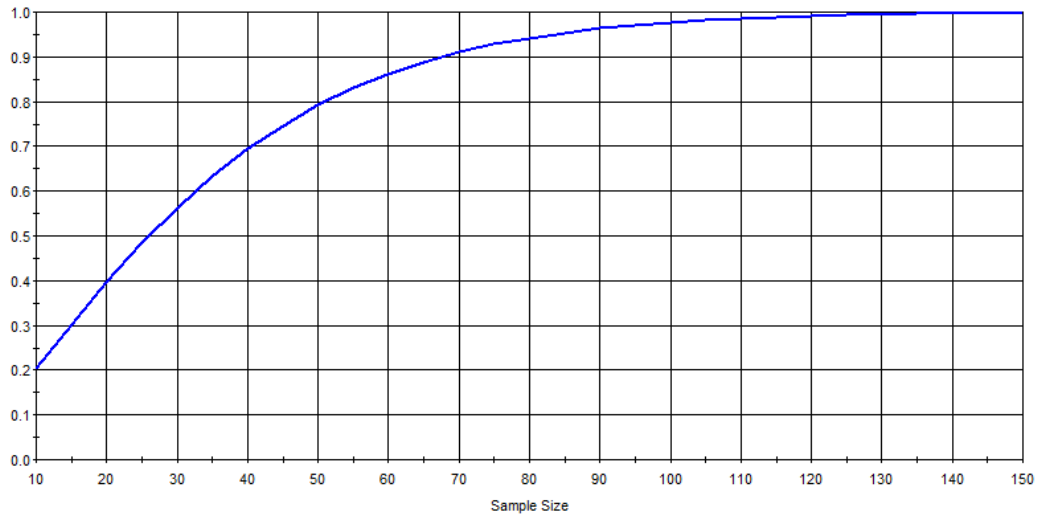
6. What did you like **least** about the modules?

7. Is there anything else you would like to tell us about the modules?

Appendix J

Paired T-Test Power Analysis

Power as a Function of Sample Size



Power as a Function of Sample size																													
Alpha = 0.050, Tails = 2, Mean 1 = 0.400, Mean 2 = 0.000, SD = 1.000																													
N1=	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150
N2=	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150
	0.205	0.303	0.397	0.484	0.563	0.633	0.694	0.747	0.792	0.830	0.862	0.888	0.910	0.928	0.942	0.954	0.964	0.971	0.977	0.982	0.986	0.989	0.991	0.993	0.995	0.996	0.997	0.998	0.998

Software; SamplePower™, v. 2.0 (Dec 2000). Developed by: Borenstein, M., Rothstein, H., Cohen, J., Schoenfeld, D., Berlin, D., & SPSS.

Appendix K

Research Ethics Board Approval

QUEEN'S UNIVERSITY OF ALTH SCIENCES & AFFILIATED TEACHING
HOSPITALS RESEARCH ETHICS BOARD



August 3, 2010

Your Ethics Application was subject to:

- Full Board Review Meeting Date:
- Expedited Review

Ms. Kristen Farrell
School of Nursing
Geacogan Building
Queen's University

Dear Ms Farrell,

Study Title: Effects of an Online Education Program on Self-Efficacy and Knowledge of the Clinical Teacher Role: A Study with Nursing Clinical Instructors
Co-Investigators: Dr. Judy DeWolfe

I am writing to acknowledge receipt of your recent ethics submission. We have examined the protocol and informed consent for your project (as stated above) and consider it to be ethically acceptable. This approval is valid for one year from the date of the Chair's signature below. This approval will be returned to the Research Ethics Board. Please attend carefully to the following list of ethical requirements you must follow over the course of your study:

- **Reporting of Amendments:** If there are any changes to your study (e.g. consent, protocol, study procedures, etc.), you must submit an amendment to the Research Ethics Board for approval (see <http://www.queensu.ca/qa/ethics.htm>).
- **Reporting of Serious Adverse Events:** Any unexpected serious adverse event occurring in the study must be reported within 2 working days or earlier if required by the study sponsor. Adverse or serious adverse events must be reported within 15 days after becoming aware of the information.
- **Reporting of Complaints:** Any complaint made by participants or persons acting on behalf of participants must be reported to the Research Ethics Board within 7 days of becoming aware of the complaint. Note: All documents supplied to participants must have the contact information for the Research Ethics Board.
- **Annual Renewal:** Prior to the expiration of your approval (which is one year from the date of the Chair's signature below), you will be reminded to submit your renewal form along with any new changes or amendments you wish to make to your study. If there have been no major changes to your protocol, your approval may be renewed for another year.

Yours sincerely,

Chair, Research Ethics Board

Date

UNIVERSITY OF ALTH SCIENCES & AFFILIATED TEACHING HOSPITALS RESEARCH ETHICS BOARD (Form 1) - FEB 2009 ✓

Study Code: NURS-252-10

- Investigators please note that if your trial is registered by the sponsor, you must take responsibility to ensure that the registration information is accurate and complete

*DKR
Rec 2010*

ENTERED: AUG 05 2010
SHIPPED: AUG 09 2010

QUEEN'S UNIVERSITY HEALTH SCIENCES & AFFILIATED TEACHING
HOSPITALS RESEARCH ETHICS BOARD



The membership of this Research Ethics Board complies with the membership requirements for Research Ethics Boards as defined by the Tri-Council Policy Statement; Part C, Division 5 of the Food and Drug Regulations, GHRP, and U.S. DHHS Code of Federal Regulations Title 45, Part 46 and carries out its functions in a manner consistent with Good Clinical Practices.

Federalwide Assurance Number : 20FWA00001184
#IRB00001173

Current 2010 membership of the Queen's University Health Sciences
& Affiliated Teaching Hospitals Research Ethics Board

Dr. A.C. Clark	Emeritus Professor, Department of Biochemistry, Faculty of Health Sciences, Queen's University (Chair)
Dr. H. Abdollah	Professor, Department of Medicine, Queen's University
Dr. M. Evans	Community Member
Dr. S. Horgan	Manager, Program Evaluation & Health Services Development, Geriatric Psychiatry Service, Providence Care, Mental Health Services Assistant Professor, Department of Psychiatry
Dr. L. Keeping Burke	Assistant Professor, School of Nursing, Queen's University
Ms. D. Morales	Community Member
Dr. W. Rhee	Emeritus Professor, Department of Pharmacology & Toxicology, Queen's
Dr. B. Simchison	Assistant Professor, Department of Anesthesiology, Queen's University
Dr. A.N. Singh	WHO Professor in Psychosomatic Medicine and Psychopharmacology Professor of Psychiatry and Pharmacology Chair and Head, Division of Psychopharmacology, Queen's University Director & Chief of Psychiatry, Academic Unit, Quinte Health Care, Belleville General Hospital
Dr. L. Tsui	Associate Professor, Department of Paediatrics and Office of Bioethics, Queen's University
Rev. J. Warren	Community Member
Ms. K. Weishaar	L.L.B. and Adjunct Instructor, Department of Family Medicine (Bioethics)
Dr. S. Wood	Director, Office of Research Sciences (Ex-Officio)

Appendix L

Effect Size Calculations

Effect Size – Convert t -test to r -value to determine the effect size (Field, 2005)

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

Effect Size – Self-Efficacy

(Pre-test – Post-Test) – Using t -test values

$$r = \sqrt{\frac{t^2}{t^2 + df}} \quad r = \sqrt{\frac{(6.7)^2}{((6.7)^2 + 20)}} \quad r = \sqrt{\frac{44.89}{64.89}} \quad r = \sqrt{0.6917861} \quad r = 0.8317$$

Effect Size – Knowledge

(Pre-test – Post-Test) – Using t -test values

$$r = \sqrt{\frac{t^2}{t^2 + df}} \quad r = \sqrt{\frac{(4.1)^2}{((4.1)^2 + 20)}} \quad r = \sqrt{\frac{16.81}{36.81}} \quad r = \sqrt{0.4566} \quad r = 0.6757$$

Cohen (1988) Defines Effect Size

Small Effect = 0.2

Medium Effect = 0.5

Large Effect = 0.8