

ROLE MODELLING BY PRECEPTORS

PRECEPTORS' ROLE MODELLING OF SENIOR B.Sc.N. STUDENTS
EXPLORED THROUGH REFLECTIONS OF FACULTY

By

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TITLE: Preceptors' Role Modelling Of Senior B.Sc.N. Students Explored Through Reflections of Faculty

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Abstract

Preceptorship is an experiential learning approach whereby a senior B.Sc.N. student, a direct care Registered Nurse (preceptor), and a faculty member collaborate to successfully facilitate a students' learning in a clinical course. Preceptors act as both clinical teachers and professional role models to students. Role modelling can be a powerful experiential teaching-learning strategy. The objective of this cross-sectional survey was to examine students' viewpoints about role modelling by their preceptors during senior clinical courses, as viewed through faculty members' reflections. A conceptualization of preceptors as stage role models was developed, providing a unique perspective that includes role modelling typology, re-examination of "negative" role modelling, and intentionality. Data were collected and analyzed using Q-methodology procedures. By-person factor analysis revealed that students' priorities for role modelling by preceptors vary. Four distinct student viewpoints emerged: the importance of explicit teaching (Factor 1), the significance of socialization behaviours (Factor 2), the foundations of practice knowledge and skills (Factor 3), and the pivotal role of preceptor authenticity (Factor 4). The findings also highlighted the importance of harnessing role modelling as an intentional teaching-learning strategy, including use of critical reflection on the part of the role model and the learner, and being explicit about what is being role modelled. Implications for education, clinical practice, and future research are discussed.

Keywords: role modelling, preceptor, experiential learning, clinical teaching, Q-methodology

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Declaration of Academic Achievement

I declare that I, Vanessa Cavalieri, am the author of this thesis. This copy includes all final revisions as accepted by the Supervisory Thesis Committee and examiner. I understand that this thesis will be made electronically available to the public.

Chapter 1: Introduction and Background

Introduction to the Study

This chapter provides an overview of the major concepts relevant to the overall objective of the study, including experiential learning, preceptorship, and role modelling. This chapter is meant to introduce the reader to the relationships among these concepts and to provide background about the term ‘role model’. Detailed theoretical discussion about role modelling as a clinical teaching-learning strategy is presented in Chapter 2.

The overall objective of this cross-sectional survey was to examine senior nursing students’ viewpoints, about role modelling by their preceptors (practicing Registered Nurses [RNs]) during senior level undergraduate professional practice (clinical) courses, as expressed by faculty.

The term ‘role model’ is typically applied to individuals who exemplify desirable traits and characteristics, and are admired, respected, or revered because of them. It is a term that implies that others will consciously choose to emulate the identified role model. As such, role modelling is well recognized as a powerful, and pervasive, teaching-learning method, especially in the context of experiential learning (Agarwal, Sonnad, Beery, & Lewin, 2010; Armstrong, 2008; Barker & Pittman, 2010; Charneia, 2007, Charters, 2000; Coates & Gormley, 1997; Cruess, Cruess, & Steinert, 2008; Healy, 2011; Jochemsen-van der Leeuw, van Dijk, van Etten-Jamaludin, & Wieringa-de Waard, 2012; Kenny, Mann, & MacLeod, 2003; Malpas & Corbett, 2012; Murray & Main, 2005; Wright & Carrese, 2002).

Role models are pivotal in any practical, work-based, experiential learning. Albert Bandura (1986) stated that, “of the many cues that influence behavior, at any point in time none is more common or informative than the actions of others” (p. 206). Within educational programs for the health science disciplines, such as nursing, role modelling is essential to

professional practice skill development, learning the tacit ‘art’ of the health profession, and being socialized into the chosen health discipline.

Detailed definitions of key terms used throughout this thesis are found in Appendix A. For clarity, the terms ‘role modelling’, ‘preceptorship’ and ‘experiential learning’ must be explained in relationship to one other. First, role modelling is not a teaching-learning *approach* in and of itself, but rather is a teaching-learning *strategy*. Preceptorship is an example of a specific experiential teaching-learning *approach*, which relies heavily on role modelling. Currently, it is the major educational approach for professional practice education for future health care practitioners in the westernized world. Experiential learning is a foundational teaching-learning approach, broadly defined as an active "process whereby knowledge is created through the transformation of experience" (Kolb, 1948, p. 41). In other words, experiential learning offers a student the opportunity to observe, apply, analyze, explore, and reflect, all of which are influential avenues through which knowledge is acquired and skills are developed (Clark, 2009; Silberman, 2007).

In relation to this thesis, preceptorship is defined as “a largely experiential approach to [education in professional practice (clinical) courses], in which a reciprocal teaching-learning relationship is established among a senior undergraduate nursing student, a RN (known as a preceptor) with whom the learner is partnered, and a faculty member” (Bott, Mohide, & Lawlor, 2011, p. 35). In this way, a preceptorship triad is comprised of a B.Sc.N. (nursing) student, a faculty member, and an experienced RN (preceptor). Together, they collaborate to enable the student to meet the professional practice course requirements.

At McMaster University’s School of Nursing, this educational approach allows students to gain crucial ‘real life’ professional experience ‘in real time’ by working with preceptors for 24-36 hours per week in two senior level designated professional practice courses.

Simultaneously, students work with a faculty member to ensure that the course objectives, including conceptual knowledge and skills are enacted. For example, faculty members provide feedback about the development and completion of students' written assignments, engage in scheduled, focused dialogue throughout the course; attend three scheduled meetings with the student and preceptor, and debrief and reflect on the student's preceptored experience.

In this model, preceptors act as clinical teachers, fulfilling specific role functions, such as assessing for learning needs and progress. Preceptors also are professional role models for students. Preceptors and students work alongside each other in 'real life' clinical environments, rather than in simulated or lab-based learning environments. Therefore, preceptors' role modelling results in a set of contextual and situational nursing experiences that students can use to guide further growth and development as neophyte nurses. It is through preceptors that students learn the tacit knowledge, or 'art' of nursing (Malpas & Corbett, 2012; Newton, 2010; Terry & Carroll, 2008). Positive outcomes associated with preceptorship include enhanced critical thinking, clinical reasoning, and performance (Myrick, 1998; Myrick, 2002; Myrick & Yonge, 2002), improved professional skill development, an overall improved preparation for practice (Corlett, Palfreyman, Staines & Marr, 2003), and successful socialization into the nursing profession (Bahn, 2001; Gray & Smith, 1999).

Experiential Learning in Nursing Education

Background and current applications of experiential learning in nursing education are provided prior to detailed discussion of role modelling, because experiential learning provides the foundation for role modelling as a teaching-learning strategy,.

Apprenticeship. Florence Nightingale developed the British apprenticeship model of nurse training in 1860, which is still known as the first formal example of the integration of experiential learning into nursing education (Harper, 2009). Nightingale is revered as the

originator of the world's first formal curriculum for nursing students, through which she mandated that nursing students undergo a year of practical (technical) training, known as apprenticeship, under the supervision of a ward sister (Harper, 2009). This 'on the job' practical training took place in the hospital, and was augmented by lectures.

As Dornan (2005) pointed out, the Oxford English Dictionary defines an apprentice as 'a learner of a craft, bound to serve, and entitled to instruction from, his or her employer for a specified period' (p. 93). Given this definition, it becomes clear why the apprenticeship model has been critiqued for its focus on ritualistic, rather than scientifically-based care; its lack of congruence with the changing nursing workforce at the time; and its rigidity (Dornan, 2005; Glen, 2009). Perhaps the most resounding critique relates to its heavy emphasis on service rather than learning. Indeed, while the apprenticeship model no longer exists in its original form, modern trends in undergraduate nursing education, such as preceptorship, continue to reflect experiential learning as a purposeful, and necessary, component to professional practice courses.

Key differences between preceptorship and apprenticeship include the one-to-one nature of preceptorship, and the key focus on meeting the student's learning needs, rather than the student providing a service. However, it is of interest that 'the new apprenticeship', a term gaining popularity in the medical literature, focuses on the development of professional identities through role modelling (Dornan, 2005). With this much emphasis on role modelling as a teaching approach in experiential learning, advancement in the use of role modelling should be an imperative in educational research.

Modern Experiential Learning. Currently, experiential learning in nursing education occurs in clinical organizations or agencies that are simultaneously involved in education and the delivery of patient care (Yardley, Teunissen, & Dornan, 2012). This form of learning can be

thought of as a series of steps or events, the process described by Burnard's (1987) epistemological theory of experiential learning. Burnard adapted John Dewey's concept of experiential learning to describe the way in which nursing students gain the knowledge needed to successfully transition from student to professional nurse. Burnard felt that experiential learning was best described as a combination of types of learning. Table 1 compares the experiential learning terms used by Burnard in 1987 to current terms used in the McMaster Mohawk Conestoga B.Sc.N. Program.

Table 1
Comparison of Experiential Learning Terms

Burnard (1987)	McMaster Mohawk Conestoga B.Sc.N. Program (2013-2014)	Meaning
Propositional Knowledge	Problem-Based Learning, Concept-Based, Theoretical Knowledge	Knowledge gained through means such as lecture, textbook/digital resources, contact with experts, working with peers, or individual, self-directed research.
Practical Knowledge	Professional Practice	Knowledge gained through observation of, or contact with professionals, or experts. Psychomotor skills are developed.
Experiential Knowledge	Experiential Knowledge	Application of existing knowledge base (both theoretical and practical) to people, objects, or content. Reflection on the meaning of this knowledge occurs as the student transforms knowledge to knowing. Encompasses thinking and acting like a nurse.

Propositional knowledge was described by Burnard as comprehension of relevant facts acquired through textbooks, evidence-based resources, and experts in the field. Practical knowledge referred to the “smooth performance of a practical or interpersonal skill” (Burnard, 1987, p. 190), while experiential knowledge was gained by *applying* the practical knowledge. In this way, Burnard (1987) framed experiential learning as a layered process, with each type of knowledge depending on the previous level.

Burnard's (1987) theory outlined a sequence of events beginning with having an experience, sharing, discussing, and reflecting on the experience (representative of ‘real-life’

nursing), and then formulating an independent nursing practice. One positive feature of this theory is that Burnard emphasizes the importance of reflection in experiential learning. A second is that Burnard defined the relationship between all three types of knowledge as interrelated, including speculating that experiential knowledge may be powerful enough to change a students' perspective on the propositional and practical knowledge that had previously been mastered.

Though conceived in 1987, Burnard's theory accurately echoes current thinking about the integration of experiential learning in nursing education, where a student works with a faculty member to gain theoretical knowledge, and a preceptor to develop professional practice nursing actions, both leading to application of propositional and practical knowledge, and learning through experience. The framework below depicts the experiential learning cycle employed by the McMaster University Preceptorship Program; a cyclical, adapted version of Burnard's process, reflecting a step-wise approach to experiential learning (Figure 1).

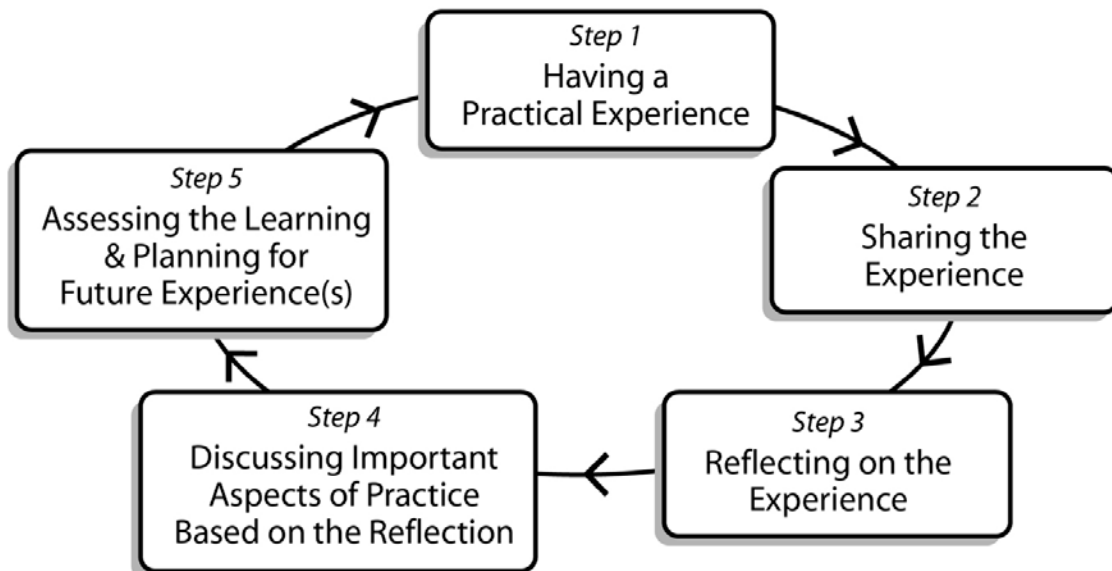


Figure 1. Experiential Learning Cycle. McMaster Mohawk Conestoga B.Sc.N. 2013-2014 Preceptorship Handbook.

While Burnard (1987) did provide an utilitarian theory through which experiential learning can be facilitated, this work does not relate the steps in experiential learning to the importance of role modelling in this teaching-learning approach.

Overview of Role Modelling

In 1957, Robert Merton, an American sociologist, first used the term ‘role model’ when he was conducting observational research about the socialization of Columbia University medical students. He found that students chose to compare themselves to groups of physicians who occupied the social and professional roles that they most aspired to fulfill. Based on this research, Merton was credited with coining the term ‘role model’, in reference to someone who sets a positive example and is worthy of imitation (Holton, 2004).

While the term ‘role model’ was not used prior to Merton’s research in 1957, the semantics of the word ‘role’ date back to at least 1600 (Harper, 2012). Adapted from the French word rôle, the origin of the word in English was predominantly associated with the theatre, defined as the ‘part or character that one takes’ (Biddle, 1986; Harper, 2012). In fact, the posthumous theoretical work *Mind, Self, and Society*, a compilation of lectures by sociologist George Herbert Mead, was among the first to introduce the concept of roles in a sociological context rather than theatrical (Biddle, 1986).

The sociological understanding of roles is grounded in role theory, an explanatory theory that sought to explain social roles by presuming that individuals interpret their social identity in relation to the behavioural expectations associated with their social position (Biddle, 1986). Role theory alleged that these expectations are learned in relation to the people with whom an individual associates, as well as through observation of people with similar social standing (Biddle, 1986; Conway, Lewis, & Robinson, 2008).

Interestingly, the theatrical origins of the word role continue to be reflected in this

sociological interpretation. For example, George Mead referred to individuals who occupy social roles as ‘actors’, and theorized that in society, just as on stage, assumptions are made about humans based on the social role they ‘play’ (Biddle, 1986). Solomon, Suprenant, Czepiel, and Gutman (1985) provided an example of this phenomenon using the role of ‘nurse’. They stated that upon hearing the word ‘nurse’, the general public conceptualizes an individual based on “a relatively standard set of behaviours...” (Solomon et al., 1985, p 102), for example, someone who is altruistic, caring, and selfless. In this example, it can be seen that generally, ascribed social roles lead to expectations similar to “read[ing] from a common script” (Solomon, et al., 1985, p 102).

In order to address both empirical evidence and societal events, role theory has been re-visited and re-interpreted through various ontological lenses, but throughout these changes the foundation of role theory has remained consistent. Role theory is thought to offer a foundation of three basic premises. First, that roles are generated by expectations, second, these expectations are learned through experience, and third, human beings are socially aware of the expectations different roles hold (Biddle, 1986). These fundamentals have allowed role theory to remain a popular theoretical underpinning used in studying human behaviour (Biddle, 1986). Examples of the pervasiveness of role theory include its contribution as an organizing concept in the assessment of social functioning (Blakely & Dziadosz, 2007), its application to the philosophy of observational learning and role modelling in Albert Bandura’s (1977) social learning theory, and more recently, as an underpinning to the updated framework of Martin Fishbein, the integrative model of behavioural prediction (2008).

Additionally, these premises have provided a theoretical foundation that allow for inquiry, redefinition, and refinement of concepts, including the concept of role modelling. However, four complexities of role modelling warranted further exploration in this thesis.

Discussion of the conceptual definition, intentionality, inconsistency, and typology of role modelling is presented below.

Complexities of Role Modelling

Definition. It seems intuitive that discourse on the significance of a role model begins with its definition. Interestingly, this straightforward task became less tangible as the researcher realized that the concept of role modelling is, in itself, complex, and that a comprehensive definition was elusive. As Gibson (2004) noted, the concepts of role model and role modelling are invariably hard to pin down, and have been “inconsistently used and loosely defined” (p. 135). Even more revealing are the words of Robert Merton himself, spoken 37 years after coining the term: “...role model, if I may resort to that once well-defined sociological term now become blurred if not vacuous by frequent and indiscriminate use...” (Merton, 1994).

In constructing the definition of role model for use in this thesis, some examples were considered:

“A person considered as a standard of excellence to be imitated” (Wright & Carrese, 2002, p. 639).

“A person with whom [individuals] identify and pattern their behaviors after...” (Al-Kandari, 1991, p. 9).

“Examples to follow for their way of being and acting as professionals” (Yazigi, Nasr, Sleilaty, & Nemr, 2006, p.40).

It became clear that these definitions, all found in medical or nursing education research, were united by a common idea: association of the term ‘role model’ with a person that provides a positive example to be emulated. Interestingly, many investigators within the health sciences either described role models this way, or, assuming the reader has an instinctual understanding of the term, did not define it at all (Donaldson & Carter, 2005; Elzubeir & Rizk, 2001; Wiseman, 1994).

But, the definitions listed above are flawed in two ways. First, they do not acknowledge the fact that role modelling, in any given situation, is qualified on a spectrum of positivity-

negativity, and second, they infer that role models are chosen by the learner based on certain desirable characteristics, without stipulating that role models themselves are responsible for actively employing role modelling when using it as a teaching-learning strategy.

The absence of a comprehensive definition of role model in the health sciences was particularly troubling given its putative influence as a teaching-learning strategy for experiential learning. Auspiciously, theoretical understanding and a clear definition of ‘role model’ have been given priority in areas outside of the health sciences, for instance, in business and career management (Gibson, 2004; Warhurst, 2011). An example is Gibson’s (2004) proposal for updating the term:

“Active, cognitive constructions devised by individuals to construct their ideal, or ‘possible’ selves based on their own developing needs and goals” (Gibson, 2004, p. 135).

In this definition, recognition of the active, cognitive nature of identifying a role model was better articulated; however, again, there was no discussion of the dimensionality of positive and negative role modelling, or dialogue as to the accountability of role models themselves.

Therefore, by approaching the above-mentioned definitions as axioms, and combining them, a more comprehensive, neutral, and operational definition of role model was arrived at for use in this thesis:

An individual (preceptor), observed by another (nursing student), who may engage in both positive and negative professional, clinical, or personal behaviours that the student is free to imitate, modify, or reject based on emerging personal values or professional/educational goals.

Conceptualizing a role model in this way broadens the scope of the concept to its fullest, becoming inclusive of both positive and negative elements of role modelling, as well as the necessity of employing role modelling as an intentional teaching-learning strategy.

Intentionality. An over-arching difficulty related to role modelling as a teaching-learning strategy is that it is often viewed as a low-level, non-active form of teaching. In nursing

particularly, the body of literature about role modelling consistently portrays it as a non-intentional aspect of experiential learning, rather than as a catalyst to facilitating experiential learning.

It seems nonsensical that, on the one hand, role modelling is identified as essential to acquisition of a professional identity, including development of professional practice knowledge and skills, while on the other hand, it seems to be largely accepted that role modelling is a passive process that occurs, in essence, by chance. The processes of role modelling are not well represented in the literature. As such, no substantial attempt at exploring strategic ways of implementing, prioritizing, or evaluating role modelling as a core component of nursing education have been proposed. This corroborates the suspicion that role modelling is, at present, still largely considered to be a passive teaching strategy.

As an example, Curry, Cortland, and Graham (2011) identified role modelling as a traditional, albeit informal, method of teaching in medical education. However, upon concluding in their qualitative inquiry that third year surgical students preferred direct, explicit teaching within an operating room, there was no attempt to strategize ways of synthesizing both approaches, for example, offering suggestions about making role modelling more active and explicit. Instead, they simply concluded that instructors *could* be made more aware that their actions *may* be potential teachable moments for their students. While this is a valid strategy, it is vague, and as Dornan (2005) stated “the goals of [medical] education are too important to be left to chance or whim, so they must be defined rather than left to happenstance...” (p. 95). This caveat is applicable to nursing education, as well.

This concern has been identified in fields of education beyond the health sciences. As an example, Warhurst (2001) commented that role modelling in schools of business/management is approached as an “incidental form of...learning” (p. 876). Their curricula rely on role modelling

as a casual avenue to achieve desired personal characteristics, such as professionalism, ethical thinking, and strong communication skills (Warhust, 2011). But, as Warhust (2011) explained, the time and resources needed to teach theoretical and practical content leave little room for the strategic use of role modelling. He also stated that, ironically, role modelling itself is central to ‘learning that which cannot be taught’ (Warhust, 2011).

This conundrum is mirrored in nursing education. It seems that role modelling is accepted by the majority as a byproduct to clinical teaching. Instead, role modelling should be thought of as an active and formal teaching strategy, and awarded as much attention as is paid to didactic or formalized teaching techniques. If not, it is possible that “...in the rush to teach formal[ly]...the associated [role modelling] processes of character and identity formation [will be] impoverished” (Warhurst, 2011, p. 875). Paice, Heard, and Moss (2002) echoed this warning: “being a role model is serendipitous...That you have been a role model for a young colleague can come as a surprise, either flattering or alarming, depending on your conscience” (p. 709).

Although nursing students are encouraged to think critically and graduate to function as practitioners who are willing to challenge the norms, it is possible that senior students do not have the knowledge or skill to appraise whether clinical and personal behaviours of their preceptors are (in) appropriate. Furthermore, preceptorship involves a preceptor and a student being assigned to one another, with the preceptor in the summative assessment role. Both situations increase the likelihood that students might model themselves after preceptors regardless of whether the preceptor is an exemplary clinician or teacher. Therefore, it is imperative that intentional use of role modelling include not only being aware of one’s status as a role model, but also involves preceptors being explicit about what is being role modelled. Otherwise, designated preceptors may not recognize the impact and intricacies of role

modelling, and as such, may not approach it purposefully.

This challenge is summed up by Wyber and Egan (2007), who wrote that “there is significant misalignment between the qualities learners profess to admire and the characteristics they ultimately develop” (p. 6). This is also reflected in Ohrling and Hallberg’s (2000) phenomenological study of preceptor experiences, which concluded that for most students, the words and actions chosen by preceptors “...created an understanding in the students of how to communicate with patients, relatives...” (p. 31). In an effort to raise awareness about the idea that often preceptors are unaware of instances where their behaviour has resulted in learning on the part of an impressionable student, Ohrling and Hallberg (2000) emphasized that these examples were not always positive.

Perry (2009b) further expanded on this concept in her interpretive phenomenological study, concluding that “knowingly or unknowingly, [preceptors’] words and actions become living lessons” (p. 36). She inferred that role models convey powerful and long-lasting impressions about nursing, which, in turn, have far-reaching implications for the practices of future nurses. It could be argued, therefore, that exposure to practitioners who utilize role modelling as an intentional teaching strategy may have a cyclical effect as students graduate and become preceptors themselves.

The Process of Role Modelling. As stated earlier, in-depth explorations of the processes of role modelling as a clinical teaching strategy are, in general, lacking. An exception is Cruess et al.’s (2008) clear, step-by- step ‘process of role modelling’, which is specific in addressing the importance of intentional (conscious) use of role modelling by clinical teachers in current health sciences education. The Cruess et al. (2008) model offers a glimpse at some suggested, as opposed to scientifically-based, internal mechanisms of role modelling.

Due to the absence of published literature showing that the process of role modelling

had been empirically tested, it was initially concluded that the model was based on scholarly work. However, personal communication with Dr. Sylvia Cruess (2011) revealed that Cruess et al. (2008) adapted the process of role modelling from its original form, from the empirical work by Epstein, Cole, Gawinski, Piotrowski-Lee, and Ruddy (1998). This was not acknowledged in Cruess et al.’s (2008) published work.

Epstein et al., (1998) conducted a qualitative, thematic analysis of ‘critical incident’ narratives written by fourth year medical students after their completion of a family medicine/community-based clerkship. After rigorous reading and coding of each student’s narrative by two independent raters, they noted that active observation was highlighted in 70% of the collected narratives (Epstein et al., 1998). Because of this relatively high frequency, Epstein et al. (1998) developed a model to depict the medical students’ descriptions of the process of learning through ‘active observation’ of their community-based preceptor (Figure 2).



Figure 2. Active Observation in Clinical Medical Education (Epstein, Cole, Gawinski, Piotrowski-Lee & Ruddy, 1998).

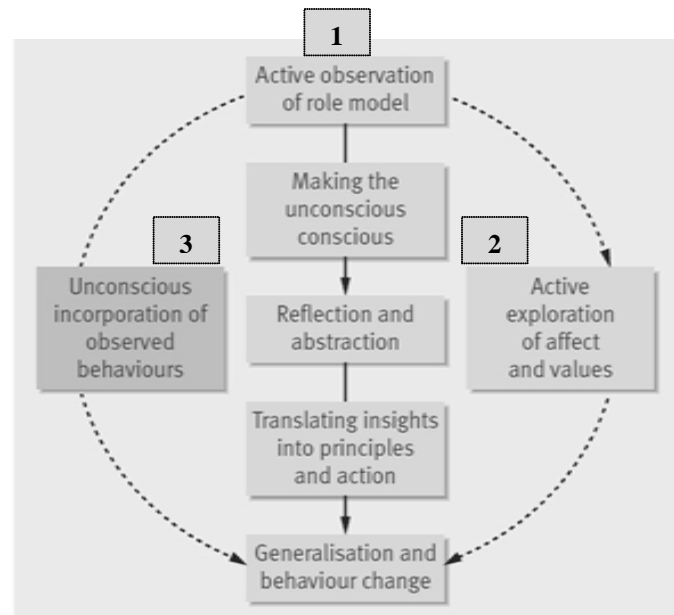


Figure 3. The Process of Role Modelling (Cruess, Cruess, & Steinert, 2008). Note: This figure is cited incorrectly in this publication.

Expanding on Epstein et al.'s (1998) representation of active observation, Cruess et al. (2008) stated that “learning from role models occurs through observation and reflection, and is a complex mix of conscious and unconscious activities” (p. 718). This is congruent with the adaptations they made to Epstein et al.'s (1998) original model, which are presented in Figure 3.

The models are identical except for slight changes. Cruess et al. (2008) changed the wording from ‘active observation of preceptor’ to ‘active observation of role model’, seemingly so that the model could be applicable to learning through observing any role model, not only preceptors. This also widens the scope of the model in its applicability to role modelling, as it implies that, while learners may be assigned to preceptors, learners may select role models within their clinical areas.

A second minor change Cruess et al. (2008) made is the incorporation of dotted lines throughout the entire model. This can be interpreted as depicting that the cognitive processes engaged by active observation are fluid and complex, and that active observation is likely to result in behaviour change on the part of the learner. In this way, despite the decade that separates the models, both Epstein et al. (1998) and Cruess et al. (2008) illustrated the impact of role modelling and began to highlight the cognitive processes that take place within a learner via experiential learning. Indeed, the purpose of many publications by Drs. Sylvia and Richard Cruess is to raise awareness in the medical community of the importance of active use of role modelling (Cohen, Cruess, & Davidson, 2007; Cruess, 2006; Cruess & Cruess, 2008; Steinert, Cruess, Cruess, & Snell, 2005), as well as to lament role modelling as an under-used teaching strategy (Cruess, Cruess & Johnston, 2000; Cruess et al., 2008).

The overall message of Cruess et al.'s (2008) model is that role modelling should be an intentional teaching-learning strategy, because through various cognitive processes, active observation of a role model leads a learner to cognitively internalize the observed behaviour(s).

However, despite Cruess et al.'s (2008) dedication to intentional role modelling on the part of clinical teachers, the model is still realistic in its use of a broad definition of active observation. This allows the model to be applied to situations where role modelling is intentional (such as when a student actively observes a preceptor teaching a skill), but also to situations where a student perhaps overhears, watches from a distance, or observes a preceptor operating in a professional role, but not actively teaching the student. This flexibility is an asset of the model and heightens its relevance to role modelling by nurse preceptors because preceptors are always role modelling, whether they recognize this or not.

Three pathways of role modelling are outlined in this model, each beginning with active observation of a role model and ending with behaviour change (Figure 3, depicted by 1, 2, and 3 in the figure [added by researcher]). The central pathway (denoted by 1 in the diagram) depicts a direct, stepwise progression, through which behaviour change occurs because a role model is actively being observed, fully explaining the reasoning for actions, encouraging a student to reflect on the learning, and offering a student opportunities to apply the new learning. In fulfilling these steps, a student would be able to apply the knowledge, perhaps replicate the behaviour independently, and/or generalize the knowledge to future similar situations.

Unfortunately, this straightforward pathway opens itself to criticism because it perhaps is an oversimplification of what are likely complex processes. In fact, neither Epstein et al. (1998) nor Cruess et al. (2008) referenced scientific or neuropsychological data regarding the actual cognitive processes of observational learning. Instead, their models are representative of what 'appears' to be happening when active observation of a role model leads to behavioural change on the part of the student. Furthermore, the first pathway does not address situations where a learner feels ill at ease about a modelled behaviour. This is an important area to explore, especially in nursing or medicine, disciplines in which self-regulation and ethical

decision-making are central components.

Fortunately, the second pathway (2) draws attention to the role of the student's personal values and attitudes, indicating that a learner may consciously decide whether the modelled behaviour is acceptable. Therefore, the model does not predict that if a student observes a preceptor performing a skill in a way that they disagree with, this role modelling would still result in a behaviour change.

The third pathway (3) allows for the possibility of complexities in observational learning and reinforces the necessity of intentional role modelling. This model uses the term "unconscious incorporation" (Figure 3) to explain situations where students absorb the behaviours of their role models due to prolonged exposure to that behaviour. In fact, the Cruess et al. (2008) article is one of few that asserted that "teachers need to be aware of the conscious and unconscious components of learning from role modelling, so that the net effect of the process is positive" (p.718).

While this model serves to highlight intentionality, or consciousness, of role modelling, a downfall of this model is its depiction of the process by which role modelling works and how learning occurs through some sort of "black box" mechanism. However, the inability to articulate the process of role modelling in more explicit terms may be linked to the next identified complexity of role modelling, inconsistency.

Inconsistency. Even in the instances where role modelling has been adopted as a formalized and intentional teaching strategy, its amorphous nature can convolute its success. By its nature, role modelling encompasses a wide composite of 'ideal' characteristics. This is complicated by the fact that identification of a role model differs from one individual to the next.

Additionally, role modelling is one of the only teaching strategies used where the

teacher is the subject for learning. As each human being is a unique entity with their own set of values and beliefs, irregularity of role models is a common concern. Holton (2004) paraphrased Robert Merton in acknowledging this general difficulty associated with role modelling. He stated that while every person takes on a societal status and becomes invariably connected to a set of expected behaviours, it is “within those sets [that] ambiguities, incompatibilities, and conflicts almost inevitably lurk” (Holton, 2004, p. 514).

The elusive standards of role modelling notwithstanding, it is consistently acknowledged as overwhelmingly potent. For example, preceptors are a known contributing factor in senior students, and new graduates’ preferences for places of employment (Hickey, 2010; Ralph, Walker & Wimmer, 2009; Stagg, Prideaux, Greenhill, & Sweet, 2012). The challenge becomes identifying, articulating, and consolidating specific aspects, or types, of role modelling that will allow for consistent use of role modelling as a teaching-learning strategy while still accounting for individual choice.

Typology. It could be argued, at this point, that given the inconsistency inherent to the concept of role modelling, it may be helpful to identify types of role models. In actuality, a typology of role models was proposed by Bucher and Stelling in 1977, described in Table 2.

Table 2
Bucher and Stelling’s (1977) Types of Role Models

Type of Role Model	Characteristics
Partial	Individual characteristics (knowledge, experience, attitude) that students admire and want to emulate
Charismatic	Inspires the student
Stage	Provides the student with a standard for the next stage of their education or career
Option	Provides the student with alternative professional views
Negative ^a	Negative opinions or ideas

^aNegative role modelling is possible within all the other role model types

In their longitudinal qualitative study, Bucher and Stelling prospectively followed and interviewed students from three different fields (biochemistry, psychiatry, and medicine), as

they ‘became professional’. Through thematic analysis of the interview transcripts, Bucher and Stelling (1977) isolated ‘types’ of role models that were present for various participants.

Bucher and Stelling (1977) defined a *partial role model* as possessing individual and specific skills, knowledge, experience, or attitudes that a learner admires. Normally, a partial role model is selected based on one particular aspect that the learner wishes to imitate. As such, learners may experience a number of partial role models as they undergo their socialization into a profession. For example, nursing students may consider a faculty member as a role model for critical appraisal of research evidence in a classroom setting, and a preceptor a role model for integration of knowledge, skills, and attitudes in the clinical setting.

A *charismatic role model* is someone who inspires a student or any learner, but who is not necessarily related to any particular professional development (Bucher & Stelling, 1977). For example, a student may consider Mahatma Gandhi as someone influential in the development of a moral philosophy or guiding life actions.

A *stage role model* provides the learner with a standard for the next stage of their education or career development (Bucher & Stelling, 1977). The role modelling occurs in the present, but its aim is growth and development for the future. This is the most appropriate type of role model in which to cast preceptors, because preceptors assist senior nursing students in identifying what they should be able to do as post-licensure RNs.

An *option role model* provides a student with alternative professional views (Bucher & Stelling, 1977), which can apply to a nurse preceptor as a primary role model with some of the staff nurses working alongside the student and preceptor acting as option role models.

Negative Role Modelling. With respect to the negative role model ‘type’, there appears to be some confusion in the literature. For example, the *negative role model* is often reported to be an exclusive type of role model, one that should not be emulated. This conceptualization

emphasizes two seemingly common assumptions: first, that role modelling is generally viewed as a positive teaching-learning strategy, and second, that negative role modelling leads to negative learning.

While there is a scarcity of scholarly or empirical papers discussing or investigating negative role modelling in clinical teaching, when it is mentioned, most of the role modelling literature tends to portray ‘bad’ role modelling simply as the absence of positive role modelling. In other words, positive and negative role modelling are treated as mutually exclusive, dichotomous events. Furthermore, there is little exploration of instances of negative role modelling and the effects on learning outcomes. For example, in a study by Wright, Kern, Kolodner, Howard, and Brancati (1998), only 42% of faculty members were considered to be excellent role models by their colleagues and students. The impression given was that the faculty who were not considered exemplary were automatically labelled as poor role models, but neither negative role modelling nor learning outcomes were explored.

Even in studies that recognized negative role modelling as a descriptor at one end of a role modelling quality continuum, and as such possible in any given role modelling situation, the outcome of negative role modelling was still associated with negative learning. For example, Donaldson and Carter (2005) stated that “negative models represent a variant of all the types of models, since each model can provide the observer with negative opinions and actions” (p. 354), but argued that this negative role modelling is detrimental to student learning and should be avoided.

Taking a different view, Cruess et al. (2008) cautioned that the net effect of role modelling in clinical education *may* be negative. Cruess et al. (2008) did not assume that negative role modelling by design leads to negative learning. Rather, they suggested that negative learning is linked to intentionality of role modelling. In other words, if clinical teachers

(including preceptors) are not intentionally role modelling positive behaviours, they *could* be role modelling negative behaviours that are internalized and emulated by their students. In this way, Cruess et al. (2008) outlined a more modern and sophisticated approach to addressing instances of negative role modelling in experiential learning.

Unfortunately, despite Cruess et al.'s (2008) linking of the two important concepts of intentional role modelling and negative role modelling, negative role modelling was still treated as an independent event to either be avoided or compensated for with other learning opportunities. Thus, negative role modelling is still an under-explored facet of role modelling in clinical health sciences education.

Interestingly, Bucher and Stelling (1977) were less emphatic than Cruess et al. (2008) about avoiding instances of negative role modelling. In fact, Bucher and Stelling maintained that *negative* role modelling should not necessarily mean *poor* role modelling, instead making the point that occurrences of negative role modelling may offer a forum for conscious decision-making and professional growth for a student. As such, they propounded that professional development cannot occur in the absence of negative role models, or in other words, that negative role modelling can, in fact, be positive.

Building on Bucher and Stelling's (1977) spectrum-like approach to negative role modelling, Gibson (2004) provided an in-depth examination of negative role modelling in his analysis of the role modelling construct in career development. He articulated the shortfalls with current thinking on role modelling, stating: "while the assumption has typically been that role modeling is a process of observing solely positive role models, a more accurate portrayal...is that individuals recognize and learn from *both* positive and negative aspects of their role models" (Gibson, 2004, p. 145).

Unfortunately, outside of Gibson (2004) application of the types of role models has

seldom been taken up. In fact, Bucher and Stelling's types of role models are rarely cited in the role modelling literature. For this reason, it appears that the importance of their typology has been underestimated. A possible reason for this is that while Bucher and Stelling (1977) identified that negative role modelling may provide opportunities for professional development, they did not differentiate this from situations where professional development may be stunted due to repeated negative reinforcement. Their typology of role models hinges on the assumption that both learner and teacher consciously recognize negative role modelling as a descriptor of role modelling quality that lies on one end of a continuum, and as such will utilize it as an avenue for positive learning. This statement further implies the intentionality of the teaching-learning strategy.

Given the emphasis placed on positive role modelling in the health sciences literature, and the unrealistic treatment of negative role modelling as an event to be avoided at all cost, a question for this thesis became, "If role modelling in a particular situation is negative, should it necessarily be considered a poor learning experience?" The researcher decided that the relationship between intentional role modelling, Bucher and Stelling's (1977) types of role models, and the relationship between negative role modelling and positive learning outcomes was important. Therefore, re-conceptualization of role modelling as made up of various types, as an intentional teaching-learning strategy, and as inclusive of a negativity-positivity spectrum, was necessary for this thesis.

Preliminary Conceptual Framework of Preceptors as Stage Role Models

During the synthesis of the literature on role modelling examined to date, particularly, Cruess et al. (2008) and Bucher and Stelling (1977), as well as the initial thinking about the thesis topic, a preliminary conceptualization was developed (Figure 4).

Briefly, its development to this point integrates the types of role modelling that could be

expected to be relevant to the preceptor as a role model (partial, option, stage); the intentional use of role modelling; and an important spectrum of the quality of role modelling, negativity-positivity. Finally, the most applicable types of role modelling to the nurse preceptor role, the stage role model, is featured in a central position of Figure 4.

Because the framework was expected to evolve following the synthesis of ideas at the completion of the literature review, the description of the conceptualization, as finalized, is found at the end of Chapter 2.

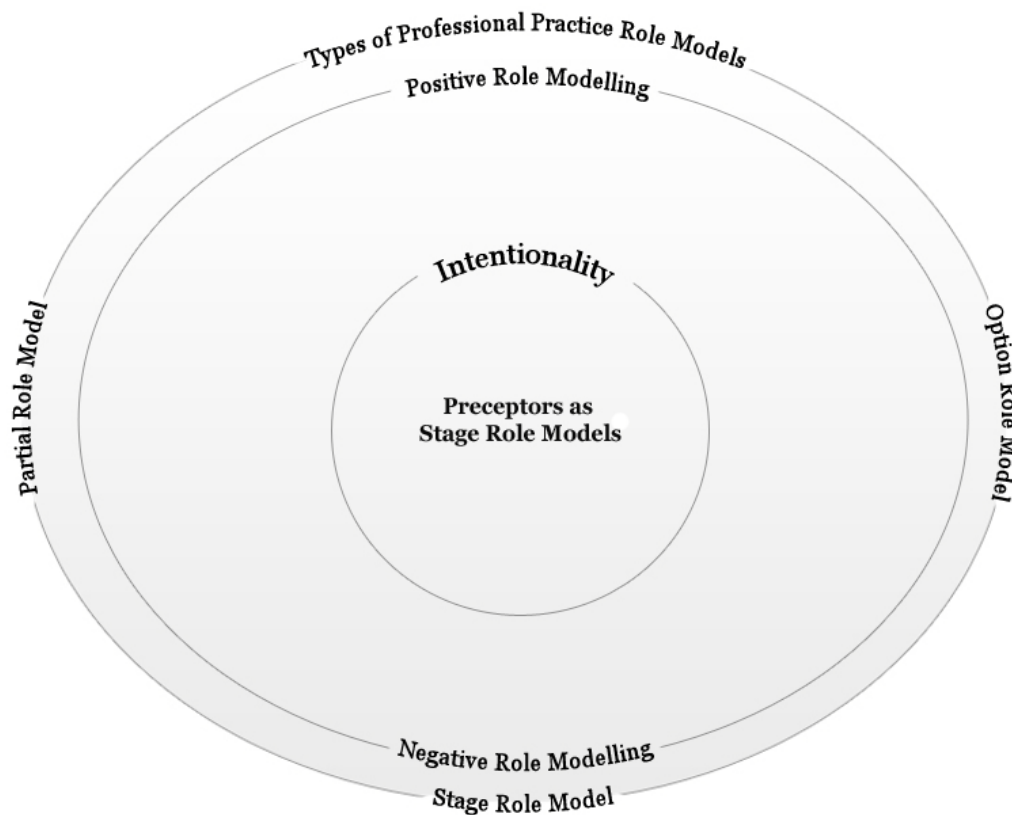


Figure 4. Preliminary Conceptual Framework of Preceptors as Stage Role Models

Role Modelling Outcomes in Nursing Education

Building on the background and complexities of role modelling that have been presented, the relationship between role modelling and the development of three specific target areas in nursing education will be explored.

Professional Practice Knowledge and Skill Development. Once designated as a preceptor, many RNs associate the role primarily with ensuring that “student practice reflects the depth of clinical reasoning and skill acquisition necessary for safe and competent practice” (Paton, 2010, p. 143). Due to the increasingly high acuity, complexity, and fast-pace found within the clinical areas in which Canadian B.Sc.N. graduates are beginning their nursing careers (Vahey, 2005), the trend is that students and preceptors alike associate readiness for entry-to-practice with the development of careful clinical skill and a professional practice knowledge base (Paton, 2010).

Students tend to view their preceptor as an expert clinician who is their primary connection to learning beyond theory, often in complex or unpredictable patient situations (Paton, 2010). Students expect to learn from these experts, through role modelling, how to think and act like a nurse. This way of thinking is historically ingrained in many nurses, particularly those who resonate with Patricia Benner’s from novice to expert nursing theory, which outlined a stepwise progression of the development of clinical expertise (Benner, 1982).

Similarly, Christine Tanner’s (2006) modern clinical judgment model focuses on guiding students to develop clinical judgment by using the steps of noticing patient cues, interpreting patient information, responding to identified patient needs, and critically reflecting on the clinical experience. Thinking like a nurse aims to provide students with the ability to problem-solve, think and reflect critically, and amalgamate different sources of knowledge to deliver high quality and attentive patient care.

In this vein, role modelling by preceptors is linked to acquisition of professional practice knowledge and skill, specifically critical thinking in nursing students and novice nurses (Myrick, 2002), improved practical nursing skills (Corlett et al., 2003; Letizia & Jenrich, 1998), higher student self-confidence, as well as elevated comfort levels with interpersonal

communication (Essers, van Weel-Baumgarten, & Bolhuis, 2012; Freiburger, 2002). None of these aspects could be successfully internalized by nursing students in the absence of role modelling and experiential learning. As Yardley et al. (2012) stated, professional practice experience gained in ‘authentic workplaces’ is the “most important medium through which people learn to practice as healthcare professionals” (p. 161).

Tacit Care. Nursing, perhaps more than most other health science disciplines, is largely associated with a realm of learning that involves observing, and reflecting on, actions that are implicit or intuitive. Dornan (2005) stated that this tacit knowledge is that which cannot be described in words to the same extent that it can be demonstrated. It becomes obvious, then, that an experiential approach is the only appropriate one for this realm of nursing education. When considering education in the light of ‘teaching that which cannot be taught’, preceptors guide students through the realities, and the complexities, of the nursing profession. For example, the term ‘bedside manner’ has long been harmonious with nurses who are compassionate and kind. Preceptors who model this type of communication guide students toward cultivating their own communication styles (Weissmann, Branch, Gracey, Haidet, & Frankel, 2006). In this way, they are role models for the intangible aspects of nursing, such as caring (Nelms, Jones, & Gray, 1993); empathy (Malpas & Corbett, 2012; Tilley & Chambers, 1994); compassion (Newton, 2010), and advocacy (Callery, 1990). In addition to the above, preceptors also act as role models for tasks that are delicate, such as delivering bad news to patients and families (Parathian & Taylor, 1993; Terry & Carroll, 2008). All of these make up the ‘art’ of nursing, a critical aspect of being and becoming a nurse.

Professional Socialization. Traditional definitions of professional socialization refer to learning the culture of a profession, including acquiring the technical and theoretical skills needed for that profession (Dinmohammadi, Peyrovi, & Mehrdad, 2013). Specific to nursing

students, Dinmohammadi, Peyrovi, and Mehrdad (2013) conducted an evolutionary concept analysis of professional socialization, defining it as “a complex, inevitable, diverse, dynamic, continual, and unpredictable process” (p. 32). Essentially, through contact with role models, students begin to informally, and often unconsciously, internalize the values, behaviours, and norms of role models that he or she believes to represent the profession (Gray & Smith, 1999). Bahn (2001) highlighted this importance, stating that while role models in nursing [serve] to embody the ideal professional practitioner, they also drive the process of professional socialization.

In nursing, professional socialization occurs on two levels. The first (micro) involves the student becoming familiar with how to negotiate their interface with patients, families, and other care providers; learning the cultures of specific clinical areas; and honing clinical skills. The second (macro) is wider in scale, and occurs through the students’ interactions with issues at the level of the organization, or in learning about professional practice policies. For example, orienting students to isolation and infection control policies would constitute socialization on a macro level. Both levels are extremely important for entry-to-practice transitions. Socialization helps the student in developing a sense of confidence and belonging within the profession.

If socialization does not occur as expected, there can be dissatisfaction with entry-to-practice experiences and subsequent poor retention in the nursing profession (Duchscher, 2008). Indeed, according to the Canadian Nurses Association [CNA], the issue of nursing student attrition is a long-standing, yet pressing, concern for nursing education (2007). When coupled with the fact that Canadian provinces consistently rank poorly when evaluating RN to population ratios, the future availability of preceptors able to teach and role model for students looks bleak (Registered Nurses’ Association of Ontario [RNAO], 2011).

Skeff and Mutha (1998) reflected on a similar trend being experienced in medical

schools:

...faculty members may have to accept that fewer than half of their teachers will be perceived as effective role models by those they teach... this may provide society with an adequate number of qualified physicians in the short term. In the long run, however, the restriction on the number of available role models may lead to a diminished science and practice of medicine (p. 2016).

This statement, reflecting a faculty perspective, paints a gloomy picture of both the proportion of appropriate professional practice role models for students and the downstream effects that the proportion of effective clinical preceptors is likely to have on health itself. It serves to reinforce the importance of experiential learning and role modelling. Unfortunately, this portrayal is representative of the many current RNs who face clinical contextual challenges, such as time constraints, short staffing, and caring for complex and unstable patients with high patient acuity (Duvall & Andrews, 2010). Because preceptors are asked to take on the roles of both nurse and teacher, questions with respect to preceptorship, such as expectations associated with this role, compound the challenging work environment (Paton, 2010).

Ironically, while the above challenges can be barriers to positive preceptorship and role modelling experiences, they also are the very reason why the experiential learning facilitated by an effective preceptor is so vital. Preceptors who seek out, or create, learning opportunities, while supervising students through the realities of nursing practice, and who also demonstrate clinical competence, caring, and confidence, are exactly the type of professional practitioners who guide the socialization of students into the profession. As Paton, Martin, McClane-Trust and Weir (2004) state with respect to preceptorship, “the retention of registered nurses ... depend[s] partly on adequate investment in their professional development” (p.177). This statement is true for the preparation of senior nursing students, as well as neophyte nurses.

Features of Academic and Clinical Teaching

As stated above, preceptors face the dual challenges of remaining a punctilious clinical

practitioner while also adopting high-level teaching-learning strategies. This is perhaps the chief differential feature between academic and clinical teaching. As Morgan (1991) stated:

Teaching, at best, is a complex act...Clinical teaching, however, differs from traditional didactic instruction and requires a separate set of skills, skills that may not be automatically ensured by competence in one's area of clinical specialization (p. 1238).

Balancing, and prioritizing, the needs of patients and students forces preceptors to develop a set of clinical teaching-learning strategies that are conducive to delivering appropriate care to patients, and are feasible to enact within a hospital or clinical setting (see Table 3).

Table 3
Features of Teaching-Learning Strategies

Instructional Technique	Used in Clinical Teaching	Level of Teacher Involvement with Student	Teacher Time Commitment	Content/ Subject for Learning	Intentionality (Active/Passive)
Online Modules	X	Low	Low	Subject matter	Passive
Lectures	X	Low	High	Subject matter	Active
Active Listening	√	High	High	Professional practice experience	Active
Demonstration/ Return Demonstration	√	Moderate	Moderate	Professional practice skill or nursing action	Active
Discussion	√	High	High	Professional practice experience	Active
Narratives/ Storytelling	√	Moderate	Moderate	Professional practice experience	Active
Questioning	√	Moderate	Moderate	Professional practice experience	Active
Reflection	√	Low	Low	Professional practice experience	Active
Role Play	√	Moderate	Moderate	Professional practice skill or nursing action	Active
Role Modelling	√	High	High	Self ^a	Passive (in majority of cases)

Note. Non-clinical teaching strategies are shown highlighted in grey.

^aRole modelling is the only teaching-learning strategy where the content or subject for learning is oneself.

Table 3 was developed by the researcher to outline some unique features of clinical teaching strategies. It became clear that preceptors' teaching occurs exclusively within a clinical

area, and for the most part, relies on active engagement with students. The content or subject for learning usually is based on the professional practice experience at hand, which offers a forum for preceptors to share or model their clinical expertise and answer student inquiries. Notably, role modelling is the only technique in which the subject for learning is the preceptor themselves. Role modelling also is the only strategy that does not rely on active interpersonal interaction with the student, but rather can be absorbed by a student passively.

As discussed in the ‘Complexities of Role Modelling’ section of this chapter, these intricacies pose a challenge when applying levels of accomplishment to preceptors’ role modelling. Fenton and Szala-Meneok (2010) explored three progressive ‘types’ of academic teaching for university-level educators. *Good teaching* refers to an educator engaging in self-reflection and being receptive and responsive to feedback, while *scholarly teaching* refers to using evidence to better inform themselves of theoretical and practical advances in education. Finally, the *scholarship of teaching and learning* refers to an educator who identifies gaps in the literature and initiates scholarly investigations.

Applying Fenton and Szala-Meneok’s (2010) exploration of these concepts to role modelling by preceptor, it is difficult to define role modelling as *good teaching* because it is not formally assessed or evaluated by students, and because little exists at present for faculty or clinical teachers to assess their role modelling performance or its impact on student learning. Furthermore, currently, the extent of *scholarly teaching* is limited by the available role modelling research. Most of the literature is descriptive, and the studies are often scholarly, methodologically weak, or outdated (see Chapter 2).

Significance of Study

In the spirit of advancing *the scholarship of teaching and learning*, this thesis seeks to explore opinions about role modelling by preceptors as a teaching-learning strategy for senior

nursing students. The significance of this thesis is that the impact of role modelling, on both professional practice knowledge and skill development, tacit nursing knowledge, and socialization, is well documented, yet the educational principles for harnessing role modelling as a teaching-learning strategy remain vague. The concept is ill-defined, and little is known or prioritized regarding ways in which preceptors exert their influence as role models.

Additionally, while for some teachers and students, role modelling is a recognized teaching-learning strategy, often educators treat role modelling as non-intentional. Knowing that preceptors influence the student's success, both as a student and as a post-licensure RN, role modelling is an important area for investigation.

Chapter Summary

As an introduction, this chapter provided an overview of the common threads of role modelling, experiential learning, and preceptorship. Role modelling was highlighted as a complex, important, and poorly understood teaching-learning strategy, particularly in the context of preceptored education. Cruess et al.'s (2008) model depicting the process of role modelling, Bucher and Stelling's (1977) typology of role models, and a re-conceptualized negative-positive spectrum of role modelling quality were described, and integrated within a preliminary conceptual framework of role modelling by preceptors.

Chapter 2: Literature Review

The goal of conducting a literature review is to become familiar with critical aspects of the empirical literature available about the topic(s) of interest, including methodological decisions that inform study design aspects, and important results. Additionally, literature reviews can be conducted about theoretical frameworks and their relationship to the topic of interest. Both types of reviews are presented in this chapter. First, an overview of the selection and description of the theoretical components of this thesis is discussed followed by a review of the literature related to social learning theory (Bandura, 1977). Second, the empirical role modelling literature review is surveyed for thematic topics, and then critically appraised.

Selection Criteria of Theoretical Frameworks

For the purposes of this thesis, a theory is defined as an organized, coherent, and systematic articulation of a set of statements that are communicated in a meaningful whole to describe or explain phenomena (Im & Meleis, 1999). An example of a theory is Albert Bandura's (1977) social learning theory. The terms model and framework are defined as a representation, often pictorial, of a set of global ideas, or processes, about individuals, groups, situations, or events of interest (Dudley-Brown, 1997). The process of role modelling by Cruess et al. (2008) is an example of a model.

The following criteria were developed in order to select a theory, model, or framework to be used to examine role modelling. The chosen theory, model, or framework must first adhere to the above definitions of theory, model, and framework, and second, satisfy McEwen's (2007) criteria for theory evaluation (see Appendix B). Third, it must relate well to both experiential learning and role modelling, and finally, have been empirically tested.

A number of theories were considered with respect to the above selection criteria (Ajzen, 1985, in Kuhl & Beckmann; Ajzen & Fishbein, 1973; Cruess et al., 2008; Fishbein,

2008). Albert Bandura's 1977 social learning theory was the only one that satisfied all four of the selection criteria; therefore, it was used to interpret the results of this study.

Social Learning Theory

Social learning theory, henceforth referred to as SLT, is an explanatory theory that addresses the relationship between cognition (learning) and human behaviour as a function of environmental, social, and personal factors (Bandura, 1977). Bandura proposed that human learning occurs primarily as a function of socializing, because "...most human behavior is learned observationally through modelling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action" (Bandura, 1977, p. 22).

Bandura believed that observation of the relations among people, their behaviours, and their environments provides an influential foundation for human learning. The cornerstone of SLT, then, is the assumption that humans instinctively learn vicariously through observation of social and cognitive behaviours of others in certain environments. Expanding on this principle, SLT also proposes that observational learning is more likely when the observed behaviours appear congruent with the learner's own goals, and are associated with rewards or benefits (Bandura, 1977). In this way, SLT addresses the impact of negative role modelling, stating that negative role models provide learners with a set of behaviours that do not lead to reward, but rather, to punishment or negative outcomes.

While the literature related to this theory demonstrates that observational learning is a powerful means of transmitting patterns of behaviour (including knowledge and skills), it does not imply that learners will imitate an observed behaviour without the individual's conscious thought. Though robotic imitation may be easily inferred from SLT, Bandura's four required self-regulating processes eliminate the assumption that role modelling is rote replication. These

processes are attention, retention, motor reproduction, and motivation (Bandura, 1977). In other words, observational learning requires the learner to be paying attention, to have the ability to recall what was observed, to have practiced/applied the behaviour, and finally, to be motivated to use the learning. According to Bandura (1977), failure to execute, as well as subpar performance in, any of these four areas can result in rejection of the behaviour in question.

While the roles of attention, retention, and reproduction in observational learning are intuitive, the concept of motivation requires some discussion. In keeping with SLT terminology, motivation can be clarified using the concepts of ‘outcome efficacy’ and ‘efficacy expectations’ (Armstrong, 2008). In brief, motivation is directly influenced by whether the learner believes that the given behaviour will lead to a certain, desirable outcome (outcome efficacy); as well an individual’s belief that they are physically, mentally, and emotionally able to perform the behaviour in question (efficacy expectation). Lack of motivation, whether it pertains to a person’s moral objection to a behaviour, or low self-confidence in replicating the behaviour, may lead a learner to dismiss an observed behaviour.

Examples of application of these self-regulation processes to role modelling and preceptorship are provided. A nursing student may be given the opportunity to observe a preceptor perform a nursing skill, but the student may not pay sufficient attention and be unable to recall what was demonstrated to them. As another example, a student may not be afforded the opportunity to practice the skill, or feel unsure of one’s ability to replicate the task. In these instances, it is unlikely that a behavioural change through ‘social learning’ would occur. With respect to motivation, an example of outcome efficacy might be a student’s belief that adoption of the preceptor’s behaviour would help meet the goal of becoming a RN, whereas an example of an efficacy expectation might be a student’s self-confidence in preparedness to make the transition from student to RN.

Despite the conceptual safeguard that Bandura's four cognitive processes provide against automaton-like learning, the situation where a behaviour is initially resisted, but eventually adopted, requires further consideration. Using the language of SLT, reinforcement is a key concept to understanding this experience. "Bandura proposed a theory of learning which acknowledges the effect of such influences as observation, direct experiences, and reinforcement on learning..." (Perry, 1988, p. 21). SLT projected that the likelihood of a learner imitating an identified role model increases with reinforcement, even if the learner initially feels trepidation. For example, initially, a nursing student might question a preceptor's practice, but after observing it repeatedly, eventually adopts it as part of his/her own nursing repertoire. As Callery (1990) stated, SLT "does not discriminate between desirable and undesirable learning; the role model is a learning tool whether of excellence or otherwise" (p. 326) (see Chapter 1, Complexities of Role Modelling, p. 9)

Selected Literature Review: Social Learning Theory

The goal of the literature review was to inform the understanding of SLT and its application and relationship to both experiential learning, and role modelling in undergraduate nursing education. When considering search strategies for this literature review, one complication was the existence of other theories falling under the category of 'social learning', for example, social learning theory by Julian Rotter (Rosenstock, Strecher, & Becker, 1988). Additionally, because of SLT's longevity as a well respected theory in the broader readership realm of education, it was necessary to set selection criteria to ensure that the literature review remained manageable and consistent. Therefore, articles were limited to the following categories: overview, application, critique, or empirical test of Albert Bandura's (1977) SLT as it relates to observational learning (modelling) in the health science (clinical) disciplines.

Search Strategies. A number of databases were searched, including the Cumulative

Index for Applied Health Literature [CINAHL], PubMed, PsycINFO, EMBASE, and the Educational Resources Information Center [ERIC]. Each database was searched from the date of its first inception (earliest possible date) to present. The keywords ‘social learning theory’, ‘experiential learning’, and ‘health education’ were used. Multiple search strategies, including hand searching, were employed. The search produced 366 works with no limits applied. Forty-seven of these works were then retrieved based on the reading of titles and abstracts. After reading of abstracts (and in cases where abstracts were unavailable, the full text), works were excluded for the following reasons. Some were published prior to 1977, hence not pertinent specifically to Bandura’s SLT, while others focused on the use of SLT by health care providers with application to patient care issues. Finally, works were excluded if they did not provide an overview, critique, or empirical test of the theory as it relates to health sciences education.

After exclusion, a yield of six articles was selected for review. Of these, five provided background on the role of SLT in nursing education (Bahn, 2001; Callery, 1990; Charters, 2000; Haddock, 1994; Iwasiw & Goldenberg, 1993). Only one of the six was an empirical study, in which Abbey, Willet, Selby-Penczak & McKnight (2010) aimed to explore second year medical students’ experiences during their first home visits with geriatric patients. They concluded that, through social learning, medical students began to appreciate the richness of working within patients’ homes and were better able to understand the relationships developed between older adults and their medical caregivers (see Appendix C).

Although most of the 47 retrieved works did not directly satisfy the search criteria, many of the articles applied SLT in fields outside of health science education, and therefore allowed the researcher to follow the empirical applications of SLT since its inception in 1977. Consequently, the literature review met the goals of informing the understanding of SLT, and outlining its role in undergraduate nursing education.

Historical Applications of Social Learning Theory. SLT is currently known as one of the most influential explanatory and predictive theories related to learning and development. This seminal theory has been critiqued, augmented, and empirically tested in a wide variety of disciplines, and its adoption as a dominant theoretical underpinning in many studies of learning and the evolution of behavioural development (e.g., deviant behaviour) remains unparalleled. The literature review undertaken for the purpose of this study immediately revealed its wide usage in psychological, sociological, and educational literature.

Interestingly, shifts in the applications of Bandura's (1977) SLT have occurred over time. For example, at the time of its inception in the late seventies, the analysis and empirical testing of SLT were most often used in the psychological and sociological literature, specifically in areas of abnormal mental health behaviours (Karashmer, 1978). Following this, the theory was applied to teaching and learning, for example, in public health (Blair, 1993; Blomquist, 1981; Hofstetter, Hovel, & Sallis, 1990; Mullen, Gottlieb, Biddle, McCuan, & McAlister, 1988), effective leadership (Haddock; 1994), and traditional education (Brusich, 1980). Most recently, SLT has been applied to more specific research questions when compared with earlier works. Examples of this include use of SLT in analyzing residents' learning through observation in community medicine (Abbey et al., 2010), organizing and implementing public health promotion strategies (Goodness & Renfro, 2002), and in remediation of targeted abnormal health behaviours (Do, 2004; Patock-Peckham, Cheong, Balhorn & Nagoshi, 2001; Ward & Gryczynski, 2009).

Social Learning Theory and Nursing Education. One of the most well known quotes about SLT comes from Bandura himself. He stated that "learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them of what to do" (Bandura, 1977, p. 22). This rings particularly true when

discussing education in the health sciences, which involves theoretical and technical training of future health care professionals. Perhaps this is why, as Wiseman (1994) stated, it would not be an exaggeration to say that most educational nursing texts touch on some tenet of SLT.

Unfortunately, the literature applying SLT to clinical education in nursing tends to be outdated (Brusich, 1980; Parcel & Baranowski, 1981). This is likely because, prior to the shift to preceptored education in the late twentieth century, nursing education was associated with apprenticeship and practical learning. Therefore, early research and analyses of clinical nursing education models applied SLT to apprenticeship. While these articles do illustrate the usefulness of SLT in teaching nursing skills, such as ethical caring (Callery, 1990), the focus of the theory in nursing practice education literature does not reflect the philosophic or structural shifts to preceptorship through which nursing education has been transformed. The key differences between apprenticeship and preceptorship are discussed in Chapter 1.

The earliest mention of SLT in conjunction with preceptorship appears in Perry's (1988) article about the possible benefits of moving towards preceptorship as a clinical teaching approach. She recommended that SLT be used as a foundation on which to build a better understanding of how students could learn from preceptors. Unfortunately, while Perry offered a thorough review of SLT as it applies to preceptorship, the article does not take into account current clinical trends, for example, increased patient acuity and subsequent nursing workload. Furthermore, role modelling is not considered.

Three scholarly works reflected the relationship between SLT and modern preceptorship (Armstrong, 2008; Bahn, 2001; Charters, 2000). Unfortunately, none are empirical or original research. First, Charters (2000) reflected on clinical teaching in emergency care from the perspective of a clinical educator and used SLT to highlight the importance of role modelling as a teaching method. Then, in 2001, Bahn analyzed the principles of SLT from the perspective of

a faculty member, highlighting its suitability for clinical learning. Again, while both Charters and Bahn highlighted the parallels between the propositions outlined in SLT and the nature of preceptorship in nursing, both works were scholarly, not empiric.

More recently, Armstrong (2008) used a clinical case study to demonstrate how application of SLT promotes role modelling as a teaching strategy that is both patient and student-centered. The goal of this qualitative study was to prepare experienced midwives for participation in a mentorship program. While mentorship and preceptorship are not synonymous, Armstrong (2008) did highlight social learning through role modelling as a method of engaging cognitive, affective, psychomotor, and reflective domains of learning. She cautioned that midwives must evaluate their own competence and skills because it is their “powerful and influential actions that students will imitate” (p. 603). While this is not an empiric study, this is the most relevant article linking SLT, role modelling, and preceptorship within a health science discipline.

Though SLT is consistently cited as the theoretical foundation for the practice of all observational learning, it has been linked to the experiential learning required for the health sciences disciplines for nearly forty years. As the above overview of the SLT literature indicates, application of SLT to nursing education is sometimes outdated. Therefore, to supplement the use of SLT in analysis and interpretation of the study results, the researcher chose to also utilize Cruess et al.’s (2008) model depicting the process of role modelling (see Chapter 1, Figure 3). The process of role modelling was chosen as an adjunct to SLT for two reasons. First, it is directly applicable to role modelling by preceptors, and second, its origins and intended application lie in medical education. Therefore, it was felt that SLT and the process of role modelling complemented one another, and hence would provide a well-balanced forum for interpretation of the study results (see Chapter 5).

Literature Review

Search Strategies. The goal of each literature search was to retrieve empirical studies addressing role modelling as a clinical teaching-learning strategy within health science disciplines, including qualitative studies that would increase the understanding of student opinions about role modelling by ‘clinical teachers’. While the focus of this study is role modelling by preceptors, the researcher acknowledged that ‘preceptor’ is a term often associated with nursing education. To ensure that relevant scholarly and empirical works were not missed, the term ‘clinical teacher’ or variations of it were also used in the literature searches.

As with the theoretical literature review, the role modelling research literature was collected by systematically searching CINAHL, PubMed, PsycINFO, EMBASE, and ERIC. At the time of the first literature search (November 2011), each database was searched in its entirety (from the first year of the database’s existence to present), while subsequent searches were limited to the date of the last search to present. Keywords, such as ‘role model or role modelling’, ‘experiential learning’, ‘preceptorship’ and ‘nursing education’ were used and combined. Multiple search strategies were used, including a manual search of references included in the retrieved studies, and contacting authors. Further details regarding the search strategy, including the specific search terms used among databases, number of results, and inter-library loan requests are available upon request from the researcher (V.C).

Due to the broad nature of the search strategy, a deliberate choice in order to capture wide-ranging descriptions of role modelling, the first literature search yielded a total of 639 works. Based on review of the titles and abstracts of these works, the full text of 67 potentially relevant publications were retrieved. Five hundred and seventy two articles were excluded. Exclusionary reasons were: not reporting original research studies, not focusing on role modelling as a teaching-learning method, or describing nurses or other health care providers as

role models for patient care (e.g., healthy eating, tobacco cessation).

The 67 retrieved articles were organized and stored using *RefWorks*, allowing for the removal of six articles appearing in more than one database. Upon reading the full-text of the remaining 61 articles, 27 did not meet the inclusion criteria listed above, with the majority being non-empiric, anecdotal accounts of the importance of personal role models. Therefore, the total yield of studies retrieved at the time of the initial literature search was 34 (Figure 5).

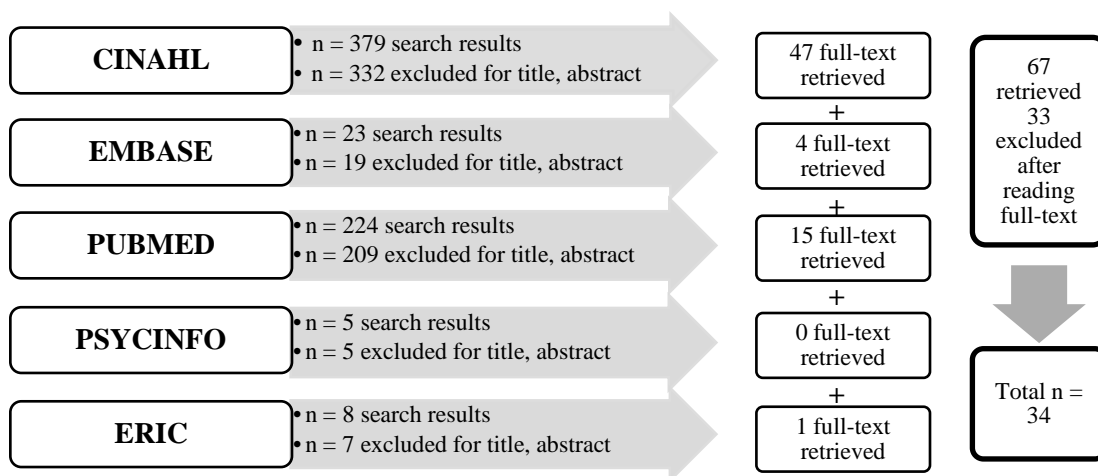


Figure 5. Literature Search Results of Initial Search (November 2011)

Eight months later, a second literature search using the same selection process was conducted and only nine additional studies were obtained from the following databases: five from CINAHL, one from EMBASE, and three from PubMed. In December 2012, a third search was conducted, yielding six new studies (five from CINAHL, one from EMBASE). Finally, at the time of the thesis completion and subsequent defense, a final search was conducted, yielding no new results.

Collectively, four literature searches yielded a total of 49 apposite articles about role modelling by ‘clinical teachers’ among health sciences disciplines. The studies were grouped by type and ordered chronologically, for a total of 26 qualitative inquiries (dating from 1992-2012), 22 quantitative studies (1987-2013), and one mixed-methodology dissertation. Together, these

studies contributed to various aspects of this thesis, for example, as background for the conceptualization of the relationship among role modelling behaviours, for the generation of Q-statements, and for assessing the quality of educational studies investigating role modelling as a teaching-learning strategy. Additionally, the 49 studies allowed the researcher to identify clear and consistent themes present in the role modelling literature.

Survey of the Literature for Thematic Topics. Prior to conducting a critical appraisal of role modelling studies that were central to the research question, all the literature retrieved using the strategies outlined above was surveyed to determine the major thematic topics within the anecdotal, scholarly, and empirical literature. The literature was assessed for strengths and limitations. Three thematic topics emerged: qualities and characteristics of role models; professional practice knowledge, and skill development; and professional socialization.

Qualities and Characteristics of Role Models. In 1994, Hafferty and Franks first discussed the ‘hidden curriculum’, the idea that concepts and content that are not addressed explicitly in a curriculum may still be learned by students. For example, unexpected clinical outcomes may result in an entirely different agenda being impressed upon a student than that which the university and preceptor have intended for them. Recognition of the ‘hidden curriculum’ prompted the widespread assessment of the importance of role modelling in clinical learning. This concept opened up the scope of responsibility for clinical learning from individual clinical teachers to health organizations, communities, and society-at-large (Kenny, 2003). Since then, descriptions of, and reflections about, the ideal conceptual role model have become a popular topic for scholarly literature.

Many descriptive studies report the opinions about valued characteristics of ‘good’ role models. Typically, learners are asked to describe characteristics of their positive role models (Agarwal et al., 2010; Conway et al., 2008; Elzubeir & Rizk, 2001), and in some cases,

individuals identified as exemplary role models are asked to reflect on their role model status (Klunklin, Funashima, & Nakayama, 2011; Wright & Carrese, 2002; Wright et al., 1998). These studies revealed similar results. Specifically, clinical competence, teaching skills, and personal characteristics, such as being approachable, are consistently ranked as important or highly valued qualities of clinical role models (Armstrong, 2008; Curry, Cortland, & Graham, 2011; Conway et al., 2008; Cruess et al., 2008; Gray & Smith, 2000; Illingworth, 2009; Jochemsen-van-der Leeuw et al., 2013; Lewis & Robinson, 2003; Mogan & Knox, 1987; Myrick & Yonge, 2002; Nehring, 1990; Wiseman, 1994; Weissmann et al., 2006; Wright & Carrese, 2002; Wright et al., 1998; Yazigi et al., 2006). While these classifications about key characteristics of good role models are important, descriptive or cross-sectional studies cannot demonstrate a causal relationship, that is, that possessing a characteristic leads to better learner, or other, outcomes.

Two quantitative studies exemplify the quantity of research focused on identifying the characteristics of ideal role models. Klunklin et al.'s (2011) descriptive study, one of the few using a validated scale, explored role model behaviours of nursing faculty members in Thailand by employing the *Role Model Behaviours for Nursing Faculty* scale. This study concluded with five major categories relevant to role modelling, listing characteristics of positive role models. But, they did not expand on the results by proposing ways of actively using role modelling to improve the effectiveness of clinical teaching.

In a 1994 survey, Wiseman identified role modelling behaviours of clinical nursing faculty that undergraduate students considered important. While Wiseman used Bandura's SLT to interpret the descriptive statistics of this study, all 28 role modelling characteristics were reported as 'important' to 'very important' by the nursing students, so that the relative importance of these characteristics were not numerically presented. No strategies were offered related to formal preceptor education, curricular planning, or evaluation measures.

Six qualitative studies also illustrate the prevalence of scholarly publications about ideal role models: two interpretive phenomenological studies by Perry (2009a) and Langridge and Hauck (1998), one qualitative descriptive study by Hayajneh (2011), and two grounded theory designs conducted by Gray and Smith (2000), and Donaldson and Carter (2005) respectively.

Unfortunately, similar to descriptive reports, these study conclusions reinforce, but do not expand, our existing knowledge. The authors do not specify operational strategies from which a reader could infer teaching-learning strategies applicable to experiential learning situations. For example, in a secondary analysis of her original study (Perry, 2009a), Perry (2009b) examined role modelling and concluded that exemplary role models remain optimistic, attend to patient needs, and affirm others. These findings are intuitive, and while Perry (2009b) touched on the importance of role models for learners, she did not include the means of enhancing these behaviours in the study discussion. The other four studies named also listed positive characteristics of role models, but offered no advancement of knowledge.

It is clear that investigation of the characteristics of ideal role models represents a popular area for investigation. Additionally, the ideal role model attributes continually correspond to the same three categories: “the characteristics of role models have been well documented and can be divided into three categories: clinical competence... teaching skills...[and] personal qualities” (Cruess et al., 2008, p. 718). These classifications have been previously identified as encompassing the ‘ideal’ role model characteristics (Boerbach, Lombarts, Keijzerm, Heineman, & Arah, 2012; Elzubeir & Rizk, 2001; Fromme et al., 2010; Ullian, Bland, & Simpson, 1994; Wright & Carrese, 2002). Most studies investigating the qualities or characteristics of role models rank highly at least one of these categories.

In the only systematic review (Jochemsen-van-der Leeuw et al., 2013) about this topic, the authors sought to identify the positive and negative attributes characterizing clinical trainers

(physicians in a supervisory role to interns or residents) as role models. The authors included seven qualitative and ten quantitative studies.

Unfortunately, no meta-analysis was possible due to differing study methodologies and definition of terms among the 17 studies (Jochemsen-van-der Leeuw et al., 2013). However, as with the single studies previously discussed, negative and positive qualities of role models were identified in this systematic review. Again, they reached the conclusion that the identified attributes could be classified into three distinct categories: clinical competence, teaching qualities, and personal qualities. As stated previously, this conclusion supports our existing understanding of the ideal role model characteristics, but does not expand on it. In fact, when considering these findings within the context of the ‘hidden [or implicit] curriculum’, which undoubtedly exposes students to ‘the good, the bad, and the ugly’ of clinical areas, it is not surprising that the consistently desired role model attributes extend beyond explicit aspects of clinical competence to include implicit aspects, such as teaching and personal characteristics.

Although this review was of sound methodological quality (see Appendix D), the 17 studies included within the review were less so. Jochemsen-van-der Leeuw et al., (2013) utilized the Medical Education Research Study Instrument [MERSQI], a critical appraisal tool for medical education research that is well documented as valid and reliable, to assess the quality of the 17 studies. The mean MERSQI score of included quantitative studies was 9.7 (maximum possible score 18), and 8.1 (maximum possible score of 15) for included qualitative studies.

The conclusions of this review, unfortunately, suffered from the same flaws as the studies discussed at the outset of this section. The authors offered extensive lists of positive and negative characteristics of role models, but the review lacked a discussion of teaching-learning strategies to harness role modelling. In this way, this systematic review typifies the body of

literature discussing attributes and characteristics of clinical role models. First, it serves to illustrate that there is an abundance of literature, albeit low-quality, investigating this topic. Second, it reinforces the importance of conceptualizing a role model not only as a clinician, but also as a teacher, and a person. However, it echoes the overall lack of substantial advancement about how to actively translate role model characteristics into intentional role modelling teaching strategies.

While this type of research has been of importance to developing a comprehensive description of the ideal role model, new characteristics are no longer being identified. For this reason, it is suggested that this type of research be forgone in favour of studies that address application of the identified characteristics, and evaluate their effect on student and other outcomes.

Professional Practice Knowledge and Skill Development. The second thematic topic identified recognizes role modelling as the best way of teaching the practical (psychomotor) and tacit knowledge and skills needed to enter practice as a health care professional.

Psychomotor Skills. Most preceptorship literature focuses on the benefits of ‘real life in real time’ experience for nursing students. Narratives from students consistently express the positive impact preceptors have demonstrating, or modelling, desired psychomotor skills (Carlson, Pilhammar, & Wann-Hanson, 2010; Hickey, 2010; Paton, 2010).

Using Ontario as a Canadian example, entry-to-practice competencies for RNs were established to help ensure that safe, ethical, professional, and knowledge-based patient care is being delivered by novice nurses (College of Nurses of Ontario [CNO], 2008). The competencies most often relate to psychomotor knowledge and skills.

Charneia (2007) conducted a mixed-method study in Chicago to explore whether role modelling was viewed as influential for students in learning state-specific entry to practice

competencies. In this study, 24 purposefully sampled nursing students completed a self-administered survey, using a rating scale and open-ended questions to describe the extent to which the students felt that they had learned the essential nursing competencies via role modelling. Students were also asked to describe the extent to which they perceived that their full or part-time instructors' had role modelled those competencies. It should be noted that students' assessments of their own performance have been shown to be irregular and unstable (Eva & Regehr, 2005). Charneia (2007) found that all 24 students felt that 17 of 30 competencies had been adequately taught through role modelling. No differences existed between role modelling of full-time versus part-time instructors.

Providing a more specific example, Murray and Main (2005) concluded that role modelling was useful in teaching either complex or simple clinical skills. They cited the example of using role modelling to teach positioning and transferring of patients, emphasizing that role modelling of this seemingly simple task actually affords students the opportunity to learn not only about body mechanics and safety, but also communication, problem-solving, and teamwork, all of which are important to professional practice knowledge and skill development.

Murray and Main (2005) promoted role modelling as a teaching methodology that supports student learning without removing nurses from the bedside. They offered a three-stage framework to encourage preceptors or mentors to facilitate 'role modelling in action' when teaching psychomotor skills, such as venipuncture, catheterization, personal hygiene care, or positioning and transferring of patients (Murray & Main, 2005, p. 34). The three stages, derived from their role modelling literature review, are i) communication, ii) the nursing process steps, and iii) reflection, whereby the preceptor communicates with the student about their learning needs, facilitates a learning experience, uses active role modelling throughout the task or procedure, and promotes reflection following the experience. These steps are consistent with

elements of the experiential learning cycle used in the McMaster University Preceptorship Program (see Chapter 1, Figure 1). Murray and Main suggested that in order to be used to its maximum potential, role modelling must be intentional on the part of the teacher. The “modelling process must be a purposeful, structured activity in which the [preceptor] is aware of the cognitive, psychomotor and affective abilities being modelled” (Murray & Main, 2005, p. 39). This conclusion approached the need for unambiguous strategies when using role modelling, but did not provide specific ones.

Tacit Knowledge. Tacit care, frequently referred to the ‘art’ of nursing, is popularly referred to as ‘knowledge that cannot be taught’. It is the type of knowledge that students are generally unable to realize without access to role models. Davies (1993) described “role modelling as a means of discovering knowledge embedded in clinical practice” (p. 627).

“Excellence in professional practice is learned in and through experience... Knowledge and skills are essential, but putting them together in a competent and caring response to patients’ needs is learned [through] personal interaction and role modeling” (Kenny, 2003, p. 1209).

Development of tacit knowledge and skills via role modelling is a prevalent theme throughout the role modelling literature. The concept of humanistic behaviours, such as communication, compassion, caring, and empathy being taught exclusively through role modelling remain well-accepted (Callery, 1990; Malpas & Corbett, 2012; Newton, 2010; Weissmann et al., 2006). Unfortunately, the overall quality of these studies was assessed as weak.

In their descriptive qualitative inquiry, Nelms et al. (1993) investigated whether caring in nursing education is learned through role modelling. They concluded that facets of caring, such as strength of the connection between patient and student are indeed taught through role modelling. Empathy also has been shown to be learned through role modelling (Malpas &

Corbett, 2012; Parathian and Taylor, 1993; Terry and Carroll, 2008; Tilley & Chambers, 1994). Using an 84-item empathy construct rating scale, Tilley and Chambers (1994) tested the hypothesis that Scottish nursing students' expressions of empathy would change in response to their preceptors' role modelling of empathy. The instrument was completed pre-clinical practicum and then eight weeks later post-practicum. Fifteen of the 16 students' empathy levels increased, achieving statistical significance at the $p < 0.05$ level.

In studies of other health science learners, Epstein et al. (1998) concluded that role modelling was a fundamental process through which medical students learned community-specific communication skills, while Cote and Leclere (2000) found that establishing a doctor-patient relationship through patient interviews was a skill highly influenced by whether the clinical teacher was viewed as a role model or not.

Professionalism. Preceptors demonstrate professional behaviours, including comportment, respect for others, interprofessional collaboration, and accountability. Because professionalism (or lack thereof) can be difficult to standardize, within the health sciences the concept of 'becoming professional' is largely used. Role modelling is fundamental to internalization of both the meaning of, and demonstration of, professionalism.

Drs. Richard and Sylvia Cruess are particular advocates of the importance of role modelling in bestowing the values of professionalism on medical students (Cruess, 2006; Cruess & Cruess, 2008; Cruess, Cruess, & Johnston, 2000). In their scholarly publications, they examined professionalism as an alliance between health care professionals and the public (Cohen, Cruess, & Davidson, 2007), and provided operational strategies for teaching professionalism (Cruess, 2006). Similarly, Harris (2004) emphasized the relationship between learning professionalism and role modelling, with the intent of reaching preceptors in family medicine.

Park, Woodrow, Reznick, Beales, and MacRae (2010) conducted a multi-site grounded theory study to explore perceptions of how professionalism is learned in the surgical environment. They concluded that role modelling, along with personal values and upbringing, exposure to formal instruction, and structure of the surgical residency were contributors to learning professionalism. Although generally not empirically tested, most authors of scholarly papers on the subject agree that professionalism is an area where implicit knowledge needs to be made explicit through role modelling.

Professional Socialization. The third thematic topic found in the role modelling literature is professional socialization. As stated in Chapter 1, professional socialization is a process of learning the values and attitudes of, and being inducted into, a chosen profession. Three grounded theory studies focusing on professional socialization identified role modelling as a crucial component in making the transition from the student to professional nurse role. The studies are discussed briefly.

The two-fold aims of the three-year, well conducted Scottish grounded theory study by Gray and Smith (1999, 2000) were to investigate the qualities of effective [preceptors] from the undergraduate nursing student perspective, and to develop a theory of professional socialization in nursing students. Constant comparative analysis of in-depth interviews and diaries of the students identified qualities of good preceptors and phases of professional socialization. The phases of professional socialization traced the anxieties associated with the beginning of a preceptored clinical experience, the increase in confidence associated with the working experience, and concluded with the excitement students feel as they develop competence and confidence as future staff nurses. The analysis also led Gray and Smith (2000) to conclude that preceptors have a profound influence on student learning and professional socialization, in particular as good role models who are professional, confident, and caring. Unfortunately, Gray

and Smith (2000) did not go beyond the conclusion that role models are key resources in the professional socialization of nursing students, and did not offer an in-depth analysis of how educators might use role modelling explicitly as a teaching-learning strategy.

Pfiel (1997) and Kelly (1992) also conducted grounded theory studies focusing on professional socialization. Kelly (1992) concluded that nursing preceptors are influential forces in the development of the self-concepts of student nurses, while Pfiel (1997) identified that nursing students feel that role models function within four main conceptual areas: professional socialization, practical skills, managerial skills needed for effective execution of direct patient care, and provision of mutual support. Pfiel (1997) illustrated that in the practice setting, students may choose their own role models rather than identify the RN assigned to be their preceptor as their key role model. These studies may be outdated in relation to more recent curricular trends, but they illustrate the strong relationship between professional socialization and role modelling.

Critical Appraisal

Critical appraisal refers to the systematic evaluation of research to assess its methodological strengths and weaknesses, and subsequently evaluation of its contextual relevance to a topic area (Young & Solomon, 2009). When conducting original research, the purpose of undertaking a formal critical appraisal is to develop a complete picture of the validity, trustworthiness, and usefulness of the available, existing original research that is reflective of the purpose or objective of the proposed research.

As stated previously, 49 studies were retrieved to survey and/or review the literature, for example, to identify prevalent themes about role modelling by clinical teachers. All 49 were read and assessed for their basic methodological strengths and limitations. Of the 49 studies, 15 underwent detailed critical appraisal using a standardized approach for both quantitative and

qualitative studies.

Reasonably, ensuring alignment between the primary purpose(s) or objective(s) of the existing research and the purpose of this thesis was critical to the appropriate selection of studies undergoing critical appraisal. Both qualitative and quantitative studies were selected for critical appraisal if two criteria were met. The first criterion for formal critical appraisal was that the overall study purpose needed to be the investigation of role modelling by health sciences practitioners as a teaching-learning strategy employed within an experiential learning approach in a clinical setting. The second criterion was that the role modelling was enacted by clinical practitioners, employed by the clinical agency or organization, who were performing direct care duties as well as acting as consistent clinical teachers (preceptors), in a one-to-one relationship with a student for a specified period of time (usually the length of a semester-long course).

Using these two criteria, studies were excluded from critical appraisal if they studied role modelling by clinical faculty members who teach groups of students in the clinical setting (Charneia, 2007; Hayajneh, 2011; Klunklin et al., 2011; Langridge & Hauck, 1998; Pfiel, 1997). In studies where the educational approach was unclear, the authors were contacted to clarify the type of teaching format used in the study, and then the two criteria were applied.

Studies selected for appraisal examined role modelling within nursing, medicine, and radiography. Seven were qualitative studies (Conway et al., 2008; Davies, 1993; Donaldson & Carter, 2005; Illingworth, 2009; Paukert & Hsiesh, 2001; Wright & Carrese, 2002; Wyber & Egan, 2007), and eight were quantitative (Agarwal et al., 2010; Al-Kandari, 1991; Elzubeir & Rizk, 2001; Lewis & Robinson, 2003; Maker, Curtis, & Donnelly, 2004; Wiseman, 1994; Wright et al., 1998; Yazigi, et al., 2006). All of these studies utilized experiential learning approaches whereby students worked one-to-one with practitioners for specific rotations or semesters.

Three approaches to critical appraisal were considered for use in this thesis, for example, a qualitative critical appraisal framework designed by Baxter, Charles, & Boblin (2011). Using a tabular format, the reader is prompted to thoroughly describe the research, including study design, reflexivity, theoretical and philosophical influences, data collection, analysis, and results. Then, the reader is asked to assess the study's key strengths and limitations. This approach is dependent on the reader's knowledge and understanding of qualitative research.

In addition, the Critical Appraisal Skills Programme [CASP] checklists were considered (CASP, n.d). There are CASP checklists for specific quantitative study designs, as well as for general qualitative research. As with Baxter et al.'s (2011) approach, this ordered framework prompts readers to provide an in-depth description of study aspects, including both initial screening questions used to rule out serious methodological flaws (e.g. inappropriate study design for the research question), and detailed questions to highlight methodology-specific areas of strength and limitation. The CASP checklists were an attractive option chiefly because they can be used to appraise specific types of studies (see Appendix D for an example of its use with a systematic review). However, there was not a CASP tool specific to cross-sectional or descriptive studies, which constitutes most of the literature reviewed for this thesis.

The final tool considered was the Medical Education Research Study Quality Instrument [MERSQI]. The MERSQI prevailed over the other approaches to critical appraisal for four important reasons: i) its specificity for use in the critical assessment of medical educational (health sciences) studies, ii) sound psychometric properties, including its established reliability and validity (Reed et al., 2008; Reed et al., 2007), iii) standardization of the tool components that allow comparisons across different studies, and iv) its ease of use.

The MERSQI was developed in 2007 by Reed et al. in response to an overall scarcity of

high quality medical education research. It consists of ten research-based items, measured on an ordinal scale (Reed et al., 2007). The items fall into six domains: study design, sampling, type of data, validity, data analysis, and study outcomes. Some domains include multiple items, for example, the domain of sampling assesses both number of institutions studied and response rate. Each item is scored (minimum = 0, maximum = 3), yielding a total maximum possible score of 18 points (Reed et al., 2007). Brief descriptions of how scores are assigned for each item are provided in Table 4. For detailed scoring information of each item and domain, see Appendix E.

Table 4
Description of MERSQI Items

Domain	Item	Content Description
Study Design	Study Design	Established hierarchies of methodology, with randomized controlled trial identified as ‘best’.
Sampling	No. of institutions studied	Number of sites included in study, with higher scores given to multi-site studies, which are generally preferable to single-institution studies.
	Response rate (%)	Response rate (percentage of subjects who completed the evaluation component of the study), with highest score given to $\geq 75\%$ and lowest given to $< 50\%$.
Type of data	Type of data	Type of data collected and measured in study, with higher score given to studies using objective measurement as opposed to subjective measurement.
Validity of evaluation instrument	Internal structure validity	Discussion of psychometric properties of evaluation instrument used in study (ex. reliability, validity).
	Content validity	Discussion of validity of content relevance and coverage included in evaluation instrument.
	Relationship to other variables validity	Discussion of criterion validity (how the evaluation instrument used in study compares to ‘gold standard’ or other measurement tools used to measure same/similar variables).
Data analysis	Appropriateness of analysis	Accuracy and integrity of data analysis with respect to study design and/or type of data collected in study. Data analysis is deemed either appropriate or inappropriate.
	Complexity of analysis	Complexity of analysis, with lower scores given to studies using descriptive analysis only, and higher scores given to studies that go beyond descriptive analysis.
Outcomes	Outcomes	Hierarchy of outcomes, with highest scores going to studies identifying health-care or patient-related outcomes and lowest scores given to studies addressing opinions, attitudes, etc.

Note. Adapted from Reed et al., (2007).

Reliability refers to the ability of a scale to yield the same results when used on different occasions, by various observers. Reliability is appraised by measuring internal consistency, comparing test-retest scores, and assessing inter-rater and intra-rater results (Streiner & Norman, 2006). Appraising validity allows readers to conclude whether an instrument or scale measures what it purports to measure, and therefore whether conclusions drawn about various scores using that scale are legitimate and credible. According to Cook and Beckman (2006), three typologies of validity are traditionally assessed: content validity (assessing whether an instrument or scale evaluates all aspects of the intended topic), criterion validity (evaluation of the correlation of the scale or instrument existing scales or measures), and construct validity (the perceived overall validity of the scale). If an instrument is not reliable, then it cannot be valid. As such, transparent reporting of measures of reliability and validity are fundamental to appraising the quality of any study instrument.

The psychometric properties of MERSQI are outlined briefly here. Internal consistency and inter-rater reliability, as well as content and criterion validity of the MERSQI have been well-documented (Reed et al., 2008; Reed et al., 2007). Internal consistency was established by Cronbach alpha scores of both individual MERSQI items and for all items combined (Reed et al., 2007). Inter-rater reliability was assessed using intraclass correlation coefficients (ICCs) calculated for each MERSQI item, as well as total MERSQI scores. Inter-rater reliability was deemed excellent with ICCs for individual MERSQI items ranging from 0.76 (95% confidence interval 0.67-0.83) to 0.98 (95% confidence interval 0.97-0.99) (Reed et al., 2008). ICCs were calculated based on MERSQI scores assigned to 55 studies by two independent reviewers, both trained to use the MERSQI (Dr. D. Reed, personal communication, February 2012). ICCs were also used to assess intra-rater reliability for all items (Reed et al., 2007). Reed et al. (2008) stated that strong validity evidence includes “internal structure evidence based on factor

analysis and excellent interrater, intrarater, and internal consistency reliability” (p. 904).

Content validity was established for the MERSQI through a comprehensive literature review about research quality in medical education (Reed et al., 2007). Criterion validity was also determined. Correlation was established between global ratings of the studies methodological strength by established authorities, or experts in medical education research, with the reconciled (final) total MERSQI score for each study (Dr. D Reed, personal communication, February 2012).

The MERSQI was designed for application to experimental, quasi-experimental, and observational studies in medical education (Reed et al., 2007), thereby applying only to quantitative research of this nature. However, the topic of this critical appraisal does not lend itself to experimental or quasi-experimental studies. In fact, none of the quantitative role modelling research that was central to this thesis topic was experimental; rather, as discussed earlier, the predominant quantitative study designs identified in the literature were descriptive or cross-sectional studies.

Cross-sectional or longitudinal observational designs are generally considered less rigorous when considering hierarchies of evidence; however, they are the most appropriate for the thesis topic. For the purposes of this thesis, a cross-sectional study was defined as “the observation of a defined population at a single point in time or during a specific time interval” (DiCenso, Guyatt, & Ciliska, 2005, p. 553). A cross-sectional study may be descriptive, for example, describing a defined group of students’ thoughts on available role models at a specific point in time, or comparative, for example, investigating and comparing student and faculty opinions about attributes of positive role models.

The MERSQI was revised to apply to this body of literature. The adaptations can be seen in Table 5. Item 1 (Study Design) was adjusted, as well as one other minor adaptation.

Under the domain of sampling, the third item of the MERSQI assesses response rate. The original MERSQI stipulates that a score of 0.5 be given to studies who have ‘<50% [response rate] or not reported’. For the purpose of this thesis, this item was modified so that studies that did not report a response rate were assigned a score of 0 for that item. A response rate of <50% retained a score of 0.5 for that item.

Table 5
Adaptation of MERSQI for Role Modelling Quantitative Research

Domain	Original MERSQI Items (Score)	Adaptations for Role Modelling Quantitative Research
Study Design	Item 1. Study Design Single group cross-sectional or single group post-test only (1) Single group pre and posttest (1.5) Nonrandomized, 2 groups (2) Randomized Controlled Trial (3)	Item 1. Study Design Cross-sectional, descriptive, single group (1) Cross-sectional, comparative, ≥2 groups (2) Prospective observational, ≥1 groups (3)
Sampling	Item 3. Response rate, % Not applicable <50 or not reported (0.5) 50-74 (1) ≥ 75 (1.5)	Item 3. Response rate, % Not reported (0) <50 (0.5) 50-74 (1) ≥ 75 (1.5)

The other major concern about the MERSQI was the fact that the authors produced a critical appraisal tool for quantitative research, not qualitative studies. Further assessment of the literature revealed that the MERSQI had been adapted by Jochemsen-van-der Leeuw et al. (2013) to appraise qualitative research in their systematic review. Through personal communication with Dr. Jochemsen (2012), it was revealed that the adaptation for qualitative studies consisted primarily of the removal of the domain entitled ‘validity of evaluation instrument’ (item numbers five, six, and seven). This changed the maximum possible score from 18 to 15. Additionally, because the original MERSQI items focus on criteria associated with quantitative research, Dr. Jochemsen found that re-interpretation of items was necessary. Dr. Jochemsen advised that that consensus was easily reached regarding interpretation of the items to suit qualitative work (Dr. R. Jochemsen, personal communication, December 2012).

For the purposes of this thesis, the modification of the MERSQI for use with qualitative research involved the removal of the domain ‘validity of evaluation instrument’ and re-interpretation of four items. Adaptations to the MERSQI for qualitative research are presented in Table 6.

With a modification to the design item of the quantitative MERSQI version and the adaptation of the MERSQI for qualitative research, critical appraisal was possible, thereby providing more consistency in examining the quality of the role modelling literature. Agreement regarding these adaptations was reached between the researcher (V.C.) and thesis supervisor (E.A.M.). Numeric scores applied to both qualitative and quantitative research clearly indicated high, moderate, or low quality research, and allowed the researcher to gain a sense of the overall strength of the body of role modelling literature. Each study was reviewed and rated by the researcher as well as the thesis supervisor. Any disagreements in scoring were reconciled after discussion between V.C and E.A.M.

Descriptions of each of the selected articles with their associated MERSQI score is appended (see Appendix F). In the interest of readability and space, the critical appraisals (breakdown of MERSQI scores) of the selected articles are presented in Appendix G. Highlights of the critical appraisal using the MERSQI for both quantitative and qualitative literature are presented.

Table 6

Adaptation of MERSQI for Qualitative Research

Domain	Original MERSQI Items (Score)	Adaptation for Qualitative Research
Study Design	Item 1. Study Design Single group cross-sectional or single group post-test only (1) Single group pre and post test(1.5) Nonrandomized, 2 groups (2) Randomized Controlled Trial (3)	Item 1. Study Design Specific qualitative methodology, methods not described (1) Specific qualitative methodology described (1.5) Qualitative methodology described and appropriate rationale given (2) Qualitative methodology, appropriate rationale given, and paradigm described (3)
Sampling	Item 2. No. of study sites 1 (0.5) 2 (1) >2 (1.5) Item 3. Response rate, % Not applicable <50 or not reported (0.5) 50-74 (1) ≥ 75 (1.5)	Item 2. No. study sites 1 (0.5) 2 (1) >2 (1.5) Item 3. Sampling Not reported (0) Sample was purposeful and adequate for qualitative methodology (1) Sample was purposeful, data saturation described and achieved (1.5)
Type of Data	Item 4. Type of data Assessment by study participant (1) Objective measurement (3)	Item 4. Type of data Subjective data collected and described by researcher (1) Subjective data collected and interpreted by researcher (3)
Validity of Evaluation Instrument	Item 5. Internal Structure Item 6. Content Item 7: Relationships to other variables	Removed
Data Analysis	Item 8. Appropriateness of Analysis Inappropriate for study design or type of data (0) Appropriate for study design or type of data (1) Item 9: Complexity of Analysis Descriptive analysis only (1) Beyond descriptive analysis (2)	Item 8. Appropriateness of Analysis Inappropriate for study design or type of data (0) Appropriate for study design or type of data (1) Item 9: Complexity of Analysis Descriptive analysis only (1) Interpretive analysis (2)
Outcomes	Item 10: Outcomes Satisfaction, attitudes, perceptions, opinions, general facts (1) Knowledge, skills (1.5) Behaviours(2) Patient/health care outcome (3)	Item 10: Outcomes Satisfaction, attitudes, perceptions, opinions, general facts (1) Knowledge, skills (1.5) Behaviours(2) Patient/health care outcome (3)
Total Score	18	15

Quantitative Role Modelling Literature. Overall, the selected quantitative studies scored a total mean of 9.7, or 54%, of a maximum possible score of 18 points. Total scores ranged from 7.5 to 12. These scores indicated that the quantitative, empiric literature available on role modelling by preceptors is, on average, of poor to medium methodological quality.

Study Design and Sampling. As discussed above, it was anticipated that quantitative studies would likely be cross-sectional surveys or longitudinal, observational study designs, as these are the best and most appropriate choices for the selected role modelling research. Accordingly, seven of the eight studies selected for critical appraisal were cross-sectional studies, with the exception of Wright et al., (1998), who employed what the authors labelled a case-control study. This is an odd design for this topic area because case-control studies are typically used where the outcomes are rare. In this study, 341 physicians in supervisory (teaching) roles throughout Montreal and Baltimore completed a 55-item questionnaire designed for their reflection on their own role modelling behaviours with learners. With all subjects blinded to their status in the study, 165 participants were identified by colleagues as exceptional role models (labelled as cases), while the remaining 276 participants, who had not been named as exceptional role models, were labelled as controls. Unfortunately, this is not reflective of a true case-control study design because the ‘look back’ does not constitute a true examination of exposure over time. For this reason, the MERSQI scoring for Wright et al. (1998) for the study design item reflects a multi-group cross-sectional survey (see Appendix G).

The odd use of the case-control label notwithstanding, Wright et al. (1998) conducted a multi-site, multiple group study, achieving an 83% response rate. Unfortunately, these sampling strengths were not consistent throughout all the quantitative role modelling literature appraised. When appraising the internal validity of the selected literature, sampling issues such as, poor response, recruitment bias, volunteer bias, or missing data were important to consider. For

example, half of the selected studies studied single groups of participants (Agarwal et al., 2010; Maker et al., 2004, Wiseman, 1994; Yazigi et al., 2006), so that any extrapolation to preceptors or students, or application of their conclusions must be undertaken with caution. Additionally, though it is commonly accepted that multi-institutional studies are preferable to single ones (Reed et al., 2007), three studies took place at only one educational site (Elzubeir & Rizk, 2001; Maker et al., 2004; Yazigi et al., 2006). Furthermore, three studies did not report a response rate or provide sufficient data that would permit estimation of it (Lewis & Robinson, 2003; Maker et al., 2004; Wiseman, 1994). While the remaining studies had response rates of 75% or greater, all the studies contained at least one itemized MERSQI methodological flaw related to study design and sampling, with the exception of Wright et al (1998). Appendix F and Appendix G provide specific methodological and scoring details.

Validity of Evaluation Instruments. Study scores in this section are disappointingly low. Only two studies reported any reliability testing (psychometrics) of the measurement instruments (Al-Kandari, 1991; Wiseman, 1994). Both used study-specific tools. Al-Kandari's 1991 doctoral dissertation included depth of detail regarding reliability of the original scales used to measure nursing student and faculty attitudes and behaviours about role modelling. Similarly, Wiseman (1994) described the pilot study focusing on the inter-rater reliability and content validity of the literature-based questionnaire citing 28 behaviours considered by students to be role model behaviours. It is a methodological concern that discussion of reliability was absent from the six remaining studies, because the reader is unable to determine whether the results of these works are reliable, and by extension, valid.

With respect to content validity of the evaluation instruments used, all but one (Maker et al., 2004) described the content and its sources in the measurement tools used. Maker et al. (2004) approached fourth and fifth year residents and requested that they collaboratively define

nine characteristics that ‘make’ a surgical role model. Then, residents ranked their attending physicians on the nine criteria. The process of selecting the nine criteria was not reported.

The remaining seven studies provided sufficient description about the content coverage and content relevance included in their measurement tools. For example, Lewis and Robinson (2003) provided support for the content included in their ‘Rings of Certainty’, a graphic depicting increased centrality of various role model qualities which participants rated as important. Similarly, Elzubeir and Rizk (2001) provided a thorough description of the content included in their literature-based questionnaire.

None of the selected studies reported on criterion validity. Particularly for studies using original, study-specific tools (Al-Kandari, 1991; Agarwal et al., 2010; Elzubeir & Rizk, 2001; Lewis & Robinson, 2003; Maker et al., 2004; Wiseman, 1994; Wright et al., 1998), it is imperative that there be discussion about the measurement instrument’s comparison to the ‘gold standard’ or, in situations where a gold standard is not available, to the instruments that are typically used. The absence of attention to criterion validity prompts the reader to question the degree to which the instruments measured what was intended about role modelling.

Overall, the entirety of the selected quantitative role modelling literature was found to be significantly compromised with respect to reporting of reliability and validity. See Appendix F and Appendix G for specific information regarding each study’s evaluation instruments.

Type of Data and Data Analysis. Accuracy and integrity of data analysis procedures are well-recognized as crucial to study quality (Reed et al., 2007). Appraisal of whether data analysis is appropriate is dependent upon the study design and type of data collected in the study. As stated previously, the studies collected subjective data which was self-reported that was amenable to both descriptive and interpretive statistical analyses. All eight studies employed appropriate data analysis techniques, with the majority moving beyond the level of

descriptive analyses to include interpretive tests, such as Chi-Square, Pearson correlation, and analysis of variance testing when appropriate (Al-Kandari, 1991; Agarwal et al., 2010; Elzubeir & Rizk, 2001; Lewis & Robinson, 2003; Maker et al., 2004; Wiseman, 1994; Wright et al., 1998). See Appendix F and Appendix G for specific details regarding data analysis.

Outcomes. According to Reed et al. (2007), the MERSQI aims to rate outcomes of medical education literature based on Donald Kirkpatrick's four-level evaluation model, used since 1959 for evaluating learning processes. Kirkpatrick's original four steps of evaluation include reaction, or the satisfaction of learners, learning (extent of acquisition of knowledge and skills), behaviour (ability to apply/perform newly acquired knowledge/skills), and tangible results of the learning process (Clark, 2012). Reed et al. (2007) adapted these levels so that outcomes of medical literature are scored from lowest to highest as being a) satisfaction, attitudes, perceptions or opinions, b) knowledge or skills, c) behaviours, or d) a patient or health care outcome.

Due to the nature of role modelling as a topic of investigation, with the exception of Maker et al. (2004), all the included studies reported opinion or attitude outcomes, which fall under the satisfaction level. Maker et al. (2004) went further, reporting behaviours that correlated highly with being a role model, such as using evidence to stimulate critical thinking. As pointed out frequently within this thesis, a major deficiency of the entire body of role modelling literature is the lack of exploration and channeling of opinions about role modelling into strategies to increase intentional, active use of role modelling as a clinical teaching strategy. As it stands, the body of literature reflects the current level of understanding about role modelling.

Qualitative Role Modelling Literature. The selected qualitative studies scored a total mean of 9 (60%) out of the maximum possible score of 15. The total mean score achieved by

the qualitative role modelling research ranged from poor to moderate methodological quality (range of scores equals 7 to 11).

Study Design A key difference between qualitative and quantitative research is that the researcher is often understood as having a central, or even interactive, relationship with the research (Finlay, 2002). Therefore, to increase the integrity of qualitative research, it is anticipated that a researcher reflect on ‘the presence of self’ so that possible subjective influences on the study are disclosed (Sword, 1999). For this reason, it is expected that qualitative research include discussion about the qualitative research paradigm (tradition) chosen by the researcher, as well as how the study design relates to the research question and the researchers’ worldview (Finlay, 2002).

The studies included for critical appraisal lacked the depth necessary for high quality qualitative research. None of the studies selected for critical appraisal described a research paradigm (Conway et al., 2008; Davies, 1993; Donaldson & Carter, 2005; Illingworth, 2009; Paukert & Hsieh, 2001; Wright & Carrese, 2002; Wyber & Egan, 2007). Three studies specified grounded theory as their study design (Davies, 1993; Donaldson & Carter, 2005; Paukert & Hsieh, 2001), but with the exception of Donaldson and Carter (2005), they lacked understanding of appropriate methodological procedures associated with that design. For example, Paukert and Hsieh (2001) did not conclude with a theory representative of the study results and Davies (1993) did not employ theoretical sampling or constant comparative analysis. Similarly, the phenomenology by Illingworth (2009) was not designated as descriptive or interpretive, a fundamental methodological decision.

The remaining studies (Conway et al., 2008, Wright & Carrese, 2002; Wyber & Egan, 2007) were labelled as qualitative inquiries, but with the exception of Conway et al. (2008), the qualitative procedures were not described. Furthermore, none of the studies, with the exception

of Davies (1993), provided a rationale for the selection of the methodology. Therefore, the appropriateness of the study designs was questionable in most cases.

Sampling. Sampling in qualitative research is purposeful, defined by Patton (2002) as the selection of individuals who are able to give great detail and depth about issues that are of central importance to the research question. Because data collection and analysis occur simultaneously in qualitative research, purposeful sampling usually continues until data saturation is reached (De Witt, 2011). This is the point at which no new themes or concepts are emerging from the data. All the studies included for appraisal either specifically stated that they used purposeful sampling, or it could be inferred based on the description of their sampling procedures. However, only Donaldson and Carter (2005) described a theoretical (purposeful) sampling technique or discussed the concept of data saturation as an element in their decision-making. Appendix F and Appendix G provide specific study design, sampling, and associated scoring details.

Type of Data and Data Analysis. All data collected in qualitative research is subjective. As stated above, data collection and analysis occur simultaneously. Therefore, the complexity of the data collected and the procedures used for data analyses are interrelated.

Traditionally, qualitative research is classified as being descriptive or interpretive. The important difference is that with interpretative qualitative research, the researcher seeks out themes and meaning within the data, but also reflects on, acknowledges, and integrates their own personal experience within the data analysis (Wojnar & Swanson, 2007). This varies from descriptive research, where researchers are encouraged to ‘bracket’ or remove their personal worldviews and experiences from the results.

None of the authors included discussion of their personal connection to the research paradigms or research methodologies selected, making it impossible to evaluate whether each

study could be considered descriptive or interpretive. Therefore, for the purposes of this critical appraisal, data that were collected and analyzed using in a descriptive, superficial manner (Illingworth, 2009; Paukert & Hsieh, 2001) were assigned the lowest score for this item.

Studies that provided the reader with a description of the collected data and some interpretations about the study findings were rated as slightly more complex in terms of data analysis (Conway et al., 2008; Wyber & Egan, 2007). For example, Donaldson and Carter (2005) presented a secondary analysis of findings from a grounded theory by Donaldson (2003), but did not refer to the original grounded theory as it related to role modelling.

Only two studies (Davies, 1993; Wright & Carrese, 2002) demonstrated a high degree of complexity with respect to the presentation of the data collected, and the data analyses carried out, including in-depth discussion of the interpretation and possible meanings of the study findings. Appendix F and Appendix G provide further details regarding the data analyses carried out within these studies.

Outcomes. Due to the nature of qualitative research, it was not surprising that the reported outcomes of each study related to perceptions, opinions, and attitudes (Conway et al., 2008; Davies, 1993; Donaldson & Carter, 2005; Illingworth, 2009; Paukert & Hsieh, 2001; Wright & Carrese, 2002; Wyber & Egan, 2007). Accordingly, all studies scored within the satisfaction level of Kirkpatrick's level of learning processes.

Qualitative studies usually report opinions or attitudes as outcomes, but due to the nature of role modelling as an investigative topic, it was expected that the outcomes of the qualitative studies would offer rich, complex, and comprehensive themes or theories about role modelling. Qualitative research offers a forum for analyzing role modelling not available to quantitative research, especially in its flexibility in allowing the researcher to integrate his or her own experiences into in-depth exploration of many aspects of role modelling as a teaching-learning

strategy. Unfortunately, as can be seen throughout the critical appraisal, these studies lacked this level of depth, and they suffered from methodological flaws that compromised the trustworthiness of their findings. They lacked complexity and reflexivity, and did not substantiate our understanding of role modelling as a teaching-learning strategy.

To summarize, critical appraisal of the qualitative and quantitative role modelling literature highlights the methodological weaknesses that challenge the internal validity and generalizability (quantitative), or trustworthiness (qualitative) of the study results. Of particular importance to this thesis is the lack of high quality research examining students' opinions of role modelling by their nurse preceptors that is reflective of the current trends in healthcare, and the modern shifts in nursing undergraduate education.

Finalized Conceptual Framework of Preceptors as Stage Role Models

In Chapter 1, a preliminary framework for the study was developed and briefly summarized (see p. 23, Figure 4). Following the literature review presented in this chapter, the framework was finalized. A detailed description of the completed *Conceptual Framework of Preceptors as Stage Role Models* is presented (Figure 6).

As indicated in the outer ring of Figure 6, the three types of role models advanced by Bucher and Stelling (1977) are relevant to the experiential learning that occurs within clinical courses of educational programs for the health disciplines. A preceptor may be perceived by a student as a partial role model (exhibiting a desirable attitude), an option role model (illustrating an alternative way of practicing nursing at one time or another), or a stage role model (symbolizing the next stage of a student's journey to a professional status). Not only do these types convey some differences in role model functions, they introduce the idea that students may actively choose to learn from different types of role models during clinical courses using a predominantly experiential learning approach.

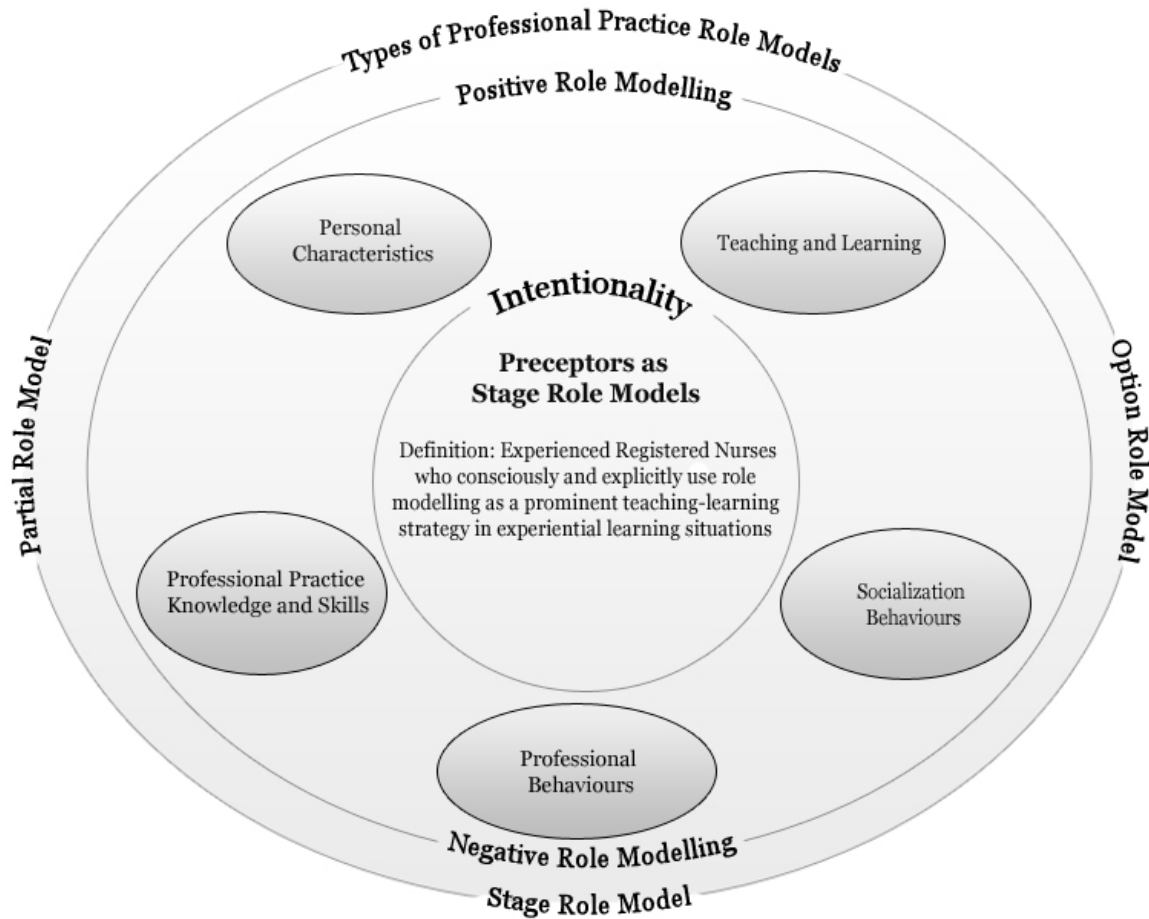


Figure 6. Conceptual Framework of Preceptors as Stage Role Models

The stage role model relates particularly well to key features of role modelling in nursing preceptorship, whereby a senior nursing student is assigned to work (and learn) side-by-side with a specific direct care nurse for substantial periods of time over the duration of a clinical course. Because preceptors provide consistency in role modelling in clinical settings over a concentrated period of time, with the overall goal of facilitating development of the neophyte nurse in order to successfully transition from student to professional status, the stage role model is the obvious role modelling type to be applied to nursing preceptors of students in experientially-oriented clinical courses. Thus, the preceptor, as a stage role model, is centrally framed by the other elements illustrated in the figure. As noted previously, students also may seek out learning from nurses who act as partial or option role models, but the use of these two

types of role models is secondary to the primary use of the stage role model.

The second ring of the framework depicts an important personal attribute of preceptors, that is, the quality of their performance, which is translated into a judgment about any experience involving role modelling. One commonly reads about “positive” role modelling, indicating an instance or episode of favourable performance, or a “positive” role model, implying a person who consistently performs favourably. The converse follows for negative role modelling and/or negative role model. However, it is important to remember that, in actuality, these are not dichotomous concepts. Instead, the quality of the role modelling performance should be viewed along a spectrum or continuum anchored by positivity and negativity. Surely, it would be hard to conceive of a person, as a role model, who *only ever* performed positively or negatively.

Before addressing the next component of the framework, as stated in Chapter 1, it was expected that important role modelling content would be identified through literature review. For this reason, a form of content analysis occurred simultaneously with the literature review and critical appraisal. Though content analysis is usually defined as a methodology used to analyze qualitative data, it is described by LoBiondo-Wood and Haber (2006) as an objective technique used to describe a body of evidence. In this sense, the overall body of role modelling literature was considered, and six key thematic categories emerged as important components of role modelling by preceptors (see Table 7). Three major domains emerged: professional evolution of the student (3), teaching/learning (2), and the role model-learner relationship (1). The corresponding number of role modelling categories is bracketed following each domain.

Table 7
Conceptual Role Modelling Thematic Categories

Domain	Role Modelling Category	Description
Professional Evolution of Student	Socialization Behaviours	Socialization behaviours are intended to acclimate the student to the clinical agency, and staff, and are designed to teach the student about the culture of the nursing profession. An example of a socialization behaviour is providing the student with a ‘cheat sheet’ for the clinical area and introducing them other members of the healthcare team.
	Professional Behaviours	These behaviours represent, for the student, the professionalism associated with nursing. For example, appearing well-groomed at work, using language fitting of a professional, and conducting oneself using general decorum.
	Professional Practice Knowledge and Skill	A preceptor’s competence, caring, and confidence in practice, and continual demonstration of the breadth and depth of nursing knowledge and skills are fundamental to the learning of the student.
Teaching/Learning	Intentional Role Modelling	Both the preceptor and student should be conscious of role modelling as a teaching-learning strategy in experiential learning for the development of professional practice knowledge and skill, learning tacit care, and facilitating professional socialization. Role modelling should be acknowledged as a clinical teaching strategy and used actively by the preceptor and evaluated by the student.
	Teaching/Learning Strategies	Sound knowledge of and skill in applying clinical teaching-learning strategies, for example, seeking out learning opportunities for students, providing prompt feedback in constructive and encouraging ways.
Role Model-Learner Relationship	Personal Characteristics	Personal characteristics of both the student and preceptor, such as approachability, sound communication skills, enthusiasm, and patience are fundamental to the developing of trusting teaching-learning relationship.

Five of the six role modelling thematic categories outlined in Table 7 are represented as spheres surrounding the central element, the stage role model. The sixth category, intentionality, remained in its initial position (surrounding the stage role model), because, although the literature review reinforced the researcher’s interpretation of intentionality, no new insights were revealed.

This concept of intentionality transforms role modelling from a passive teaching-learning strategy to a more active one when preceptors explicitly communicate their cognitive processes (including emotional responses). By way of example, a preceptor may begin a discrete instance of role modelling by saying, “Right now I am role modelling...”. Being over

about what is being role modelled, as well as being aware of one's role model status, should be major features of role modelling to ensure that role modelling is as active a teaching-learning strategy as possible. Incorporating intentionality of role modelling into the preceptors' teaching practices would assist them in maximizing teaching-learning opportunities that might be otherwise missed. Additionally, with respect to the categories outlined in Table 7, awareness of the categories as important components to role modelling in preceptored clinical courses, and approaching role modelling within those categories intentionally, may enhance learning.

Furthermore, the combined use of intentionality and critical reflection can assist the learner in transforming a negative role modelling experience into positive learning. Role modelling inherently involves human frailty and err. Thus, explicitly communicating cognitive processes and teaching points that arise from a negative performance or situation, in combination with the use of critical reflection, a concept promoted throughout any given B.Sc.N. program, can result in positive learning. As discussed earlier in this thesis, the McMaster Mohawk Conestoga B.Sc.N. Program employs the clinical judgment model (Tanner, 2006), and McMaster University's Preceptorship Program applies an experiential learning cycle (see Figure 1) to encourage preceptors and students to engage in critical self-reflection, both in-action and on-action.

With the above concepts in mind, a definition of a preceptor as a stage role model defines a preceptor as an experienced RN who consciously and explicitly uses role modelling as a prominent teaching-learning strategy in experiential learning situations.

The *Conceptual Framework of Preceptors as Stage Role Models* brings together concepts that have broadened the conceptualization of role modelling by preceptors. It identifies stage role modelling as the most applicable type of role modelling for use by direct care RNs acting as preceptors in senior clinical courses that employ experiential learning as the dominant

teaching-learning approach. The use of intentionality identifies the shift of role modelling from a passive to a more active teaching-learning strategy, and when used in combination with critical reflection, even negative role modelling instances may provide a means by which positive learning can occur. The inclusion of thematic categories identified as important elements to role modelling in clinical, experientially-oriented education, provides context for preceptors employing stage role modelling.

In summary, this framework provides a comprehensive conceptualization of role modelling that can be operationalized in preceptored clinical education. With the *Conceptual Framework of Preceptors as Stage Role Models* finalized, it will also guide the categorization of the Q-statements generated for this study and assist with the interpretation of the study results.

Given the absence of high quality research examining various facets of role modelling, it is not surprising that no other models or frameworks illustrating the relationships between key role modelling concepts exist. To the best of the researcher's knowledge, the only diagrammatic role modelling representations are by Cruess et al. (2008), and Wright and Carrese (2002). The "black box" model offered by Cruess et al. (2008) is discussed previously in Chapter 1 (Figure 3). Wright and Carrese (2002) offered a scale-like model (Figure 7), emphasizing a balance existing between role modelling barriers, such as frustration; and role modelling facilitators, such as strong clinical, teaching, and personal skills. The model also represented a threshold of clinical competence that must be met in order for a clinical teacher to be perceived as a role model.

Unfortunately, Wright and Carrese (2002) limited their model to focus on the typical three-part classification of a good role model (clinician, teacher, person). Additionally, while they did address the necessity of intentional role modelling, they defined it as 'consciously

think[ing] about being role models when interacting with medical trainees’ (p. 641). Awareness is important, but it is limited in scope because awareness does not necessarily encourage the use of active strategies for harnessing role modelling. Furthermore, concepts that resound throughout the literature, such as professional socialization, are not addressed in Figure 7.

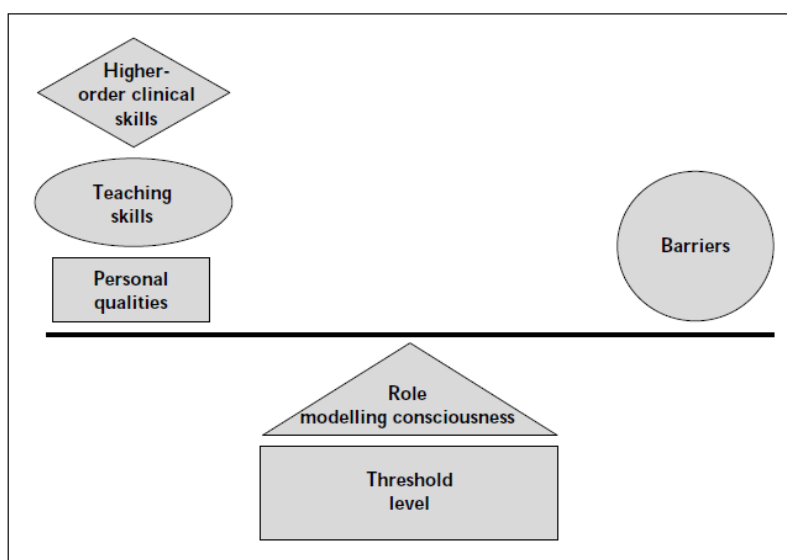


Figure 7. Wright and Carrese (2002) Conceptual Model of Role Modelling

Chapter Summary

This chapter introduced the theory that will be used to analyze role modelling within this thesis. The theoretical literature was described, including historical and modern applications of SLT as it relates to role modelling in nursing education. The empirical literature was surveyed for the identification of four prevalent themes about role modelling, followed by critical appraisal of relevant literature using the MERSQI. It was demonstrated that the overall body of literature tends to be scholarly or descriptive. The finalized *Conceptual Framework of Preceptors as Stage Role Models* was described, including integration of Bucher and Stellings’ (1977) typology of role models, intentionality, and a negativity-positivity spectrum.

Chapter 3: Research Methodology

This chapter provides an introduction to Q-methodology, including detailed discussion of its specific data collection and analyses procedures. Important methodological considerations of this study are described. One of these considerations was the decision to select faculty members as study participants, rather than nursing students. In-depth discussion about the operationalization of Q-methodology follows. Finally, ethical considerations are presented.

Introduction to Q-Methodology

The purpose of Q-methodology is to reveal distinctive opinions, viewpoints, or attitudes about a topic of interest from the perspective of participants of interest (Cross, 2005; Thomas & Watson, 2002). As well, Q-methodology identifies areas of commonality or overlap between participants' points of view. Its value lies in its ability to analyze subjective points of view using a combination of qualitative methods of research, and refined quantitative (statistical) analysis. Introduced by William Stephenson in 1935, Q-methodology has enjoyed a surge in popularity in recent decades, generally attributed to increased sophistication in the statistical analysis component of the method, including freely accessible statistical software specific to Q-methodology (Akhtar-Danesh, Baumann, & Cordingley, 2008).

This method has been chosen for use in this thesis because it is well suited to the exploratory stage of role modelling research. "... Role modeling...represent[s] [a]complex social phenomena that [is] difficult to assess through purely quantitative methodologies..." (Park et al., 2010, p. 134).

In Q-methodology, participants are presented with a set of statements, called a Q-sample. The statements (sentences) pertain to the topic of interest, in this case, role modelling by preceptors. Participants are asked to rank the Q-sample on a quasi-normal distribution. In Figure 8, a Q-methodology quasi-normal distribution is presented with 'anchors' of -4 (Strongly

Disagree) and +4 (Strongly Agree), and scale gradations between the two extremes.

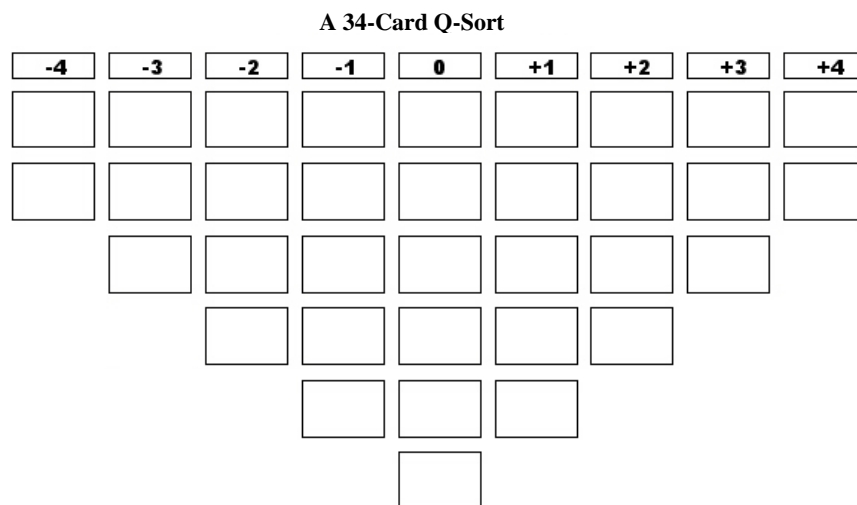


Figure 8. A Q-Sort Grid for Rank Ordering 34 Q-Sample Statements.
 Legend: -4 = Strongly Disagree, 0 = Neutral, +4 = Strongly Agree. Adapted from Akhtar-Danesh et al., (2008).

Concourse (Stage 1)

There are three stages in a Q-methodology study, the first of which is concourse. The concourse stage refers to the collection of all potential opinions, attitudes, and perspectives about the topic area of interest by the researcher (Akhtar-Danesh et al., 2008). This is commonly guided by, but not restricted to, ideas generated by the population of interest and from a literature review. The purpose of the concourse is to itemize and analyze content that will be reflected in the Q-sample.

Extraction of Q-Statements (Stage 2)

The set of statements developed within the concourse stage are meant to be representative of all the different aspects of the topic of interest, which in this study is senior nursing students’ opinions about role modelling by preceptors. In concourse, many statements are often generated. To organize this content, Steven Brown (2011) recommended creating ad hoc categories based on latent or inherent themes present in the concourse. Then, extraction of statements from each category ensures representation that provides breadth, depth, and

complexity in the finalized statements. To increase content validity, the statements gathered in concourse should be extracted, read, and refined by content and/or domain experts. Similarly, the penultimate Q-sample should be reviewed by content and/or domain experts prior to use in Stage 3.

Despite the knowledge that validity is ensured by keeping the statements generated during concourse as close as possible to their original wording, limited literature on the first two stages of Q-methodology exists. This can create challenges in the construction, conceptual organization, and final selection of Q-statements. With this in mind, the novice researcher developed and used some general guidelines for the above activities, outlined in Table 8.

Table 8
General Guidelines for Writing Q-Statements

-
1. Suggested length of a Q-statement is 1 to 3 sentences.
 2. There are no pre-defined proportions for negatively and positively worded statements in the Q-sample.
 3. Any overtly negative statements should include suggestions or ways of overcoming the barrier discussed; however it is not absolutely necessary to have a solution for every statement (N. Akhtar-Danesh, personal communication, January 2012) Example. *Preceptors may be intimidated by an expectation that they need to role model at a level beyond which they think they can achieve, so it is important that the expectations be realistic.*
 4. Terms and sentence construction should reflect a comprehension level that is appropriate for the intended participants and the topic of interest.
 5. Avoid complex sentence structure (e.g. do not use double negatives to avoid confusion/lack of understanding). Example. *A good role model cannot not be supportive.*
 6. Statements should be written from the perspective of the population of interest, in the first person, and in the present tense. Example. *My expectations of preceptors as role models should be realistic.*
 7. In order to keep statements concise, and to ensure clear understanding of the statements, examples, including phrases, can be included along with the statements. Example. *Preceptors should role model behaviours designed to socialize us to the profession. Examples: orienting us to the clinical unit, introducing us to team members, making us feel that we are valued members of the unit's team.*
 8. If the statement consists of more than one sentence, a clear relationship between the sentences should be established. Include only one idea per statement. Example. *Preceptors sometimes have no idea about the impact they have as role models. Preceptors should identify that role modelling has long-lasting effects on students.*
 9. If faced with choosing between two statements, opt for the statement that adds breadth to the finalized set of statements.
 10. It is helpful to categorize the finalized Q-statements if possible. This allows the researcher to compare the categories that the distinguishing and consensus statements (revealed during by- person factor

analysis) fall within for each of the identified factors. This can aid in interpretation of the factors.

Q-Sorting (Stage 3)

In this stage, the rank-ordering of the finalized Q-sample occurs. Often, a brief questionnaire accompanies this stage to provide information that may influence the interpretation of the factors generated during factor analysis (Akhtar-Danesh et al., 2008), for example, age of the participants across the factors. By-person factor analysis of the Q-sample ranking results in factors (groups) or collective viewpoints, from the participants' perspectives.

Research Outline

The overall goal of this study was the exploration of Level IV B.Sc.N. students' opinions about the role modelling of nurse preceptors in professional practice courses. It should be noted that senior nursing students were the intended sample for this study, but the rate of student recruitment was too low to achieve the necessary sample to proceed with analyses. For this reason, the Thesis Supervisory Committee and researcher decided that faculty members could be used as a proxy for student opinions, given their position within the preceptorship triad. In other words, senior student opinions about role modelling were explored through the reflections of faculty members, using their educational experiences teaching Level IV students in preceptored professional practice courses. Please see Study Participants (p. 77) for further elaboration on, and justification for, this methodological decision.

The *primary aim* of this study was to identify groups of Level IV B.Sc.N. students' collective opinions about the role modelling of nurse preceptors, as expressed by faculty who had been in the teaching role within the preceptorship triad.

The *secondary aim* of this study was to describe and interpret the emergent student viewpoints on role modelling by preceptors using 'distinguishing' and 'consensus' statements, and through application of SLT (Bandura, 1977) and the process of role modelling (Cruess et

al., 2008).

Study Design. Q-methodology was used in the context of a cross-sectional survey. Q-methodology was both the data collection method and measurement technique by which opinions were collected and subsequently explored.

Setting. The study was conducted at McMaster University, Faculty of Health Sciences, School of Nursing within the McMaster site of the McMaster Mohawk Conestoga B.Sc.N. Program.

Study Participants. In Q-methodology, the sample, known as the ‘p-set’, is defined as a particular group of people who are theoretically saturated, and who are therefore apt to provide factors in the analysis (Dr. N. Akhtar-Danesh, personal communication, October 2011). It is imperative that selected participants be relevant to the topic of study, and that participants be able to provide clear and articulate viewpoints about the topic area (van Exel & de Graaf, 2005). In this way, as stated previously, the original subjects were to be senior nursing students; however, due to low recruitment within the short and fixed timeframe for data collection, the p-set criteria were re-visited by the researcher and Thesis Committee. Ultimately, full-time, part-time, and clinical faculty employed by the McMaster University School of Nursing who had been assigned to the teaching role within senior level professional practice courses were selected as study participants. The Committee unanimously agreed that obtaining the students’ perspective through faculty members’ eyes would yield valid results.

Justification for selecting faculty as the proxy warrants further elaboration on the role of the faculty member in the preceptorship triad. Faculty members engage regularly with students in professional practice courses in many ways: providing feedback and critique for the students’ written assignments, engaging in regularly scheduled dialogue throughout the course (e.g six one-hour meetings), encouraging and commenting on reflective teaching-learning strategies

(e.g. critical incidents), acting as a confidant, and providing guidance for their students. These activities place faculty members in an excellent position to learn about student experiences and opinions about role modelling by preceptors. Furthermore, in this supporting and guiding role, students typically disclose their experiences and explore their reflections with faculty throughout the professional practice course. In this way, faculty members are rich data sources for students' opinions about preceptor role modelling. In working with numerous senior students during preceptored courses, faculty are exposed to the major preceptor role modelling themes as experienced by students.

Though this description of faculty members in relation to their role with students established the faculty's theoretical relevance to the objective of this research, it was important to examine the literature in order to verify that faculty and senior nursing students share some similarities in their opinions about role modelling by preceptors. Please note that this literature was obtained from the literature review described in Chapter 2, but is elaborated upon here to provide context regarding the decision to select faculty members as study participants.

Three quantitative studies were of particular interest. Mogan and Knox (1987) conducted a cross-sectional survey of seven North American schools of nursing, comparing nurse educators, clinical faculty, and nursing students' responses to the Nursing Clinical Teacher Effectiveness Inventory (NCTEI), a checklist consisting of five categories of questions about teaching ability, nursing competence, personality traits, interpersonal relationship, and evaluation. The psychometric properties of the NCTEI included satisfactory face and content validity, and high internal consistency (Cronbach alpha 0.92) (Mogan & Knox, 1987).

Analysis of the survey data indicated that the 'best' characteristics of clinical teachers ranked similarly between nursing students and faculty members. Both groups perceived the best clinical teachers as good role models, well prepared for teaching, confident, skilled clinicians,

approachable, and able to foster mutual respect. Only three characteristics were not shared by both groups. Students perceived enthusiasm, promotion of student independence, and ability to correct without belittling as contributing to the best clinical teacher, while faculty members felt that breadth of nursing knowledge, ability to communicate clearly, and ability to stimulate student interest were more important. It is important to note that these characteristics are not unrelated. For example, while students' chose enthusiasm and faculty chose ability to stimulate interest in nursing, both of these attributes lead to the outcome of engagement of the learner. Overlapping ideas can also be seen for communicating clearly and ability to connect with students. This provides some evidence that faculty and students think similarly about clinical teachers. For the 'worst' clinical teachers, both students and faculty members agreed with respect to their perceptions of worst teachers as being poor role models, judgmental, and closed-minded. Overall, "both groups agreed that being or not being a good role model was the most critical characteristic differentiating the good from the less desirable clinical teacher" (Mogan & Knox, p. 335).

In Nehring's (1990) American study, use of the NCTEI indicated that faculty and students have similar perceptions of characteristics of the best and worst teachers (seven out of ten shared characteristics for 'best', and five out of ten characteristics shared in their perceptions of the 'worst' clinical teachers).

Both Mogan and Knox (1987), and Nehring's (1990) work found that students and faculty members tended to ascribe similar characteristics to the best and worst clinical teachers. While role modelling was not explicitly stated as a characteristic in the NCETI checklist, both investigators found that role modelling acted as an overarching concept, connecting the qualities and attributes associated with positive and negative role modelling. In both studies, data analysis indicated that role modelling was seen as a lynchpin as to whether a clinical teacher is

considered good or bad by both faculty and students. Therefore, these studies highlighted both the fact that students and faculty tend to think similarly about clinical role models and that role modelling by clinical teachers is recognized as of great importance to both.

In a cross-sectional survey in Indiana, Al-Kandari (1991) examined the perceived important characteristics of role models from the perspectives of both undergraduate nursing students and nursing faculty. Using validated role modelling scales developed by the author, Al-Kandari (1991) found that there were no significant differences between faculty and students when choosing role models. For example, both groups felt that instructors, staff nurses, and preceptors were important role models. Additionally, there were no significant differences between faculty and students' agreement on the important behaviours of a role model. Common themes for both groups were the availability of the role model, authenticity, and patience. Like the two above-described studies, the overall findings of the study further indicated that students and faculty have similar feelings towards role modelling by clinical teachers. Therefore, it was deemed a methodologically sound decision to select faculty members as participants in this study.

Eligibility, Sampling, and Recruitment

Eligibility. In keeping with purposeful sampling, inclusion criteria for this study were outlined as follows. To participate in this study, the faculty member had to be employed by the McMaster University School of Nursing either as a full-time or part-time faculty member, or had to have an academic appointment as a clinical faculty. Participants were required to have been assigned to Level IV student(s) as the faculty member in the preceptorship triad for either of the Level IV professional practice courses within the past three years. The sole exclusion criterion was failure to provide written consent.

Sampling. Convenience sampling was employed. Brown (1993) advised that a sample

size of 40-60 participants is suitable for a typical Q-methodology study, with some needing even fewer. Brown stated that “what is of interest ultimately are the factors with at least four or five persons defining each; beyond that, additional subjects add very little” (Brown, 1993, cited in Akhtar-Danesh et al., 2008, p. 763). This statement re-iterates that the salient aspect of Q-methodology is not the number of participants, but rather the emergence of distinct factors.

For this study, then, a sample size of 30-40 full-time, part-time, or clinical faculty, was deemed acceptable, because this would lead to precise findings and defined descriptors for the resultant factors. Moreover, a sample size of 30 or more could allow for comparison between some subgroups, for example, length of teaching experience (Dr. N. Akhtar-Danesh, personal communication, April 2012). Recruitment yielded 38 participants, a target sample size deemed to be sufficient to proceed with the analyses (Dr. N. Akhtar-Danesh, personal communication, November 2011).

Recruitment. Using blinded email distribution lists, the Office of the Associate Dean (Nursing)/Assistant Dean, School of Nursing (Academic Resources) sent emails to faculty members in the above-mentioned categories of employment on the researcher’s behalf. These emails included a brief overview of the study design, an explanation of the participants’ activity in the study, if they chose to participate, and the researcher’s email address (see Appendix H). The participants were invited to complete a cross-sectional survey in a one-to-one meeting with the researcher. A Letter of Information and Consent was attached to the email to provide information about the study protocol and procedures (see Appendix I). Written consent was obtained during the introductory phase of the data collection meeting with each subject.

Reliability and Validity

Q-methodology was chosen for use in this thesis because it is purposefully subjective,

while remaining a reliable and valid measurement instrument. Lobo et al. (2012) noted that while it might be expected that an individual's viewpoint would change over time, Q-methodology seeks to capture only the most prominent viewpoints, or in other words, opinions that are likely to be long-lasting. Correspondingly, Q-methodology has been reported to consistently score an intra-rater (completion of the same Q-sort by one person at two points in time) reliability score of 0.80 or more (Dennis, 1992). Additionally, as reported by Akhtar-Danesh et al., (2008), the test-retest reliability of a Q-study by Fairweather (1981) was at least 0.90 at an interval of one to two years. Thus it can be seen that 0.80 may be a conservative estimate when considering overall intra-rater reliability of Q-methodology.

Content validity in Q-methodology studies is usually assessed by domain experts and/or literature review, while face validity is maintained by using exact wording (when possible) in the Q-statements based on the concourse stage. With respect to the validity of the completed Q-sorts, it is accepted that there is no applicable criterion against which to measure validity of each participant's responses to the Q-sample statements. Therefore, each completed Q-sort is considered valid in that it is the individual's personal point of view (Akhtar-Danesh et al., 2008).

The increased popularity of Q-methodology in nursing research areas, such as job satisfaction and effective retention strategies (Chinnis, Summers, Doerr, Paulson, & Davies, 2001; Lobo et al., 2012), and research about clinical decision-making (McCaughan, Thompson, Cullum, Sheldon, & Thompson, 2002) are testimonial of its ease of use and acceptability. For example, in studies of nursing education, Q-methodology has been used to examine nursing faculty and student perceptions of professionalism (Akhtar-Danesh, Baumann, Kolotylo, Lawlor, Tompkins, & Lee, 2013), and nursing faculty and student opinions about the use of simulation in nursing education (Akhtar-Danesh, Baxter, Valaitis, Stanyon, & Sproul, 2009;

Baxter, Akhtar-Danesh, Valaitis, Stanyon, & Sproul, 2009).

Measurement and Outcomes

In Q-methodology, the unit of measurement is each completed Q-sort. The Q-sample as assigned by each participant is analyzed using a by-person factor analysis (Akhtar-Danesh et al., 2008), whereby the resultant factors (groups) represent participants with similar patterns of responses at the time of the Q-sort completion. The primary outcome of interest in this study was the emerging factors, while the secondary outcome was the comparative rankings of the ‘distinguishing’ and ‘consensus’ statements among the extracted factors.

Data Collection Procedures

Concourse. As discussed earlier, Q-methodology consists of three discrete stages through which the Q-sample (statements) and the Q-grid are developed. The concourse stage refers to generating Q-statements that are representative of perspectives about the topic area of interest (Akhtar-Danesh, et al., 2008). In this study, the Q-statements were generated by senior students and through a comprehensive literature review (see Chapter 2).

Extraction of Q-Sample Statements. Sixty-four statements were developed in the concourse stage. Four students participated in the generation of statements, contributing 20 statements. Due to the lower recruitment figures and the resultant low number of statements generated, their statements were supplemented with statements derived from the literature about role modelling by preceptors from the nursing student perspective. An example of a statement derived from the literature follows:

- Preceptors should set good examples for students by looking professional, for example, wearing clothes that are appropriate for their work, and keeping neatly groomed hair.

In this study, a comprehensive review of the role modelling literature allowed the researcher to develop the *Conceptual Framework of Preceptors as Stage Role Models* (see

Chapter 2, Figure 6). In this framework, six thematic categories, or components of preceptors' role modelling in experiential situations, were identified: socialization behaviours, professional behaviours, professional practice knowledge and skill, intentional role modelling/attitudes towards role modelling, teaching-learning, or personal characteristics. Correspondingly, all statements generated in the concourse stage also were classified according to these six categories. The researcher and members of the Thesis Committee reviewed the categories and statements for relevance, redundancy, and gaps in content. In this way, the statements were reduced in number, while ensuring content representativeness in each category.

To maintain a high level of face validity, the original wording of the statements was retained, and minor changes made only to ensure the ease of readability and correct grammar. The final set of statements was known as the Q-sample (see Appendix J). A Q-grid was created with the number of cells determined by the 34 statements included (Figure 8).

Q-Sorting. The third stage of a Q-methodology study consisted of the sorting of the Q-sample. Participants met with the researcher individually for one meeting. Written consent was obtained at the outset of the meeting. Participants were asked to fill out a brief demographic form asking a series of close-ended questions including: age interval, gender, type(s) of clinical placement to which that faculty members' students had been assigned, and number of years teaching at least one of the two professional practice courses (see Appendix K). This information was deemed important to the interpretation of any factors that emerged. At the end of the demographic form, but before completing the Q-sort, participants provided their definitions of role modelling. In this way, the participants were not influenced by the role modelling content of the Q-sample.

Following this, the participants were presented with the Q-sample and the purpose of the study was explained. They were asked to place the cards on the template (Figure 8) according to

their feelings, thoughts, and opinions. Because the participants were proxies for the students' perspectives, it was critical that the faculty members kept in mind throughout the sorting activity to represent the student perspective, not theirs as teachers. Therefore, initially the faculty members were asked to reflect on what they have heard about role modelling from their students, and to rank the Q-sample statements in the mindset of whether the statements reflected opinions expressed to them by their students. To further encourage this, each statement began with the following preamble: 'Through my interactions with my nursing students in professional practice courses, students have indicated that:' (see Appendix J).

Each statement was randomly numbered and ordered, and typed on index-sized cards. The Q-sample was placed in the centre of the Q-grid (bristol board) and the participants read through the statements, compared the statements, and then placed each one within a cell. No two cards could be placed in one cell. An intermediate step of dividing the cards into three piles (disagree, neutral, and agree) was introduced. This allowed the participant to increase the steps in the decision-making about card placement. Using this strategy, the participant would distribute the cards into the three above categories, prior to sorting them using the gradations (for example, +4, +3, +2, +1) on the Q-grid. This was an optional strategy only, and 33 of 38 (87%) participants chose to utilize it.

At each of the anchors (positive and negative extremes), the least number of index cards (statements) could be selected, a number which increased as the point of neutrality (0) was approached. Participants could continue to assign Q-statements until they indicated their satisfaction with the Q-statement placement (van Exel & de Graaf, 2005). No other personnel were involved in the assignment of the Q-sample. After each participant was finished, each cell on the Q-grid was filled, and placement of the cards was recorded on a Q-methodology scoring sheet. A chronological study ID was assigned to both the scoring sheet and the demographic

form.

As a concluding activity, participants were asked to provide a rationale for statements they placed in each of the two most positive (+4) and negative (-4) extremes (Strongly Agree, Strongly Disagree). First, those explanatory notes were used to inform the interpretation of the results, and second, they allowed the researcher to check that the participants sorted the statements based on their students' experiences. Participants also were asked whether there were aspects of role modelling by nurse preceptors missing from the Q-sample, for example, other aspects that students have told them about. The subjects were asked for their perspectives on role modelling, for example, whether there were statements the subjects would have ranked differently if they had not been asked to consider the statements based on the students' perspective. The researcher recorded all responses verbatim. To accommodate any ideas or opinions formed as a result of study participation, participants were asked if there were any further comments. On average, it took approximately 30-40 minutes to complete the demographic form (5-10 minutes) and Q-sorting (20-30 minutes).

Data Analyses

The data analyses for this Q-methodology study were carried out using a general statistical software package (Statistical Package for Social Sciences [SPSS]), as well as PQ Method, freely accessible software exclusively designed for use in Q-methodology research. Data analyses occurred using descriptive statistics and by-person factor analysis.

Descriptive Statistics. The demographic data collected to supplement completion of the Q-grid was descriptive, and was analyzed using SPSS. Frequencies were used for categorical data (age categories, type of clinical placement, gender), while means and standard deviations [SD] were used for continuous data (number of years teaching experience, and approximate number of students taught). This descriptive data set was used to enhance the interpretation of

the factors revealed through the by-person factor analysis (see Chapter 4).

By-person Factor Analysis. By-person factor analysis, a technique designed to reveal patterns within a dataset, is the foundation of the quantitative stage of Q-methodology research. It is the means through which Q-methodology allows the researcher to ‘transform subjective statements into an objective outcome’ (Akhtar-Danesh, Brown, Rideout, Brown, & Gaspar, 2007, p. 81). By comparison, with a traditional factor analysis, factors are extracted based on the degree of correlation between *variables*, whereas in Q-methodology, factors are analyzed by *person*, so that factors are extracted based on degree of correlation between the Q-sorts (Akhtar-Danesh et al., 2008). For example, if every participant sorted the Q-sample identically, the correlation between them would be very high and only one factor (or viewpoint) would be revealed. In this way, factors actually represent groups of participants with similar perspectives, opinions, or attitudes at the time of the Q-sort completion. Typically, the number of distinctive factors identified in a Q-sort study ranges from one to seven (Thomas & Watson, 2002).

Discovery of collective opinions about role modelling by preceptors (primary aim) and identification and interpretation of distinguishing and consensus statements (secondary aim) were achieved through by-person factor analysis. Key components of by-person factor analysis are discussed below.

Factor Extraction and Rotation. The first step of by-person factor analysis is the extraction of factors from the data set, completed using an n by n correlation matrix made up of the completed Q-sorts, where n equals the number of participants in the study (Thomas & Watson, 2002). The correlation matrix reveals the degree of agreement between the Q-sorts using correlation coefficients, where +1.00 indicates complete agreement, 0 indicates no agreement, and -1.00 represents total disagreement. The correlation matrix is the cornerstone of the factor extraction process, indicating the extremes to which each individual Q-sort is

correlated (or not) with the others (Du Plessis, 2005).

The correlation matrix mathematically distributes the shared variance between the Q-sorts, extracting the factors accounting for the most variance. Eigenvalues, defined as the sum of the squared factor loading for each factor, often determine whether the factor is extracted (Thomas & Watson, 2002). Usually, factors are extracted if they have an eigenvalue greater than 1.00, because a high eigenvalue generally represents high variance, or distinct, different viewpoints present within the data set. For the same reason, a factor with an eigenvalue of less than 1.00 is usually discarded as irrelevant (Thomas & Watson, 2002).

Centroid method and the principal component method are the two available methods for factor extraction using PQ Method (Akhtar-Danesh, et al., 2008). Both depend on the creation of the correlation matrix discussed above.

Centroid Method. Conceptually, a centroid can be visualized as the “centre of gravity embedded in a correlation matrix” (Stricklin & Almeida, 2010, “What is a centroid?”). This analogy is particularly helpful when visualizing the human body’s centre of gravity, an area where, on average, the majority of weight is carried. Using this parallel, the centroid is “thought of as a kind of grand average of the relationships between all the [Q] sorts...” (Stricklin & Almeida, 2010, “What is a centroid?”). In mathematical terms, the centroid represents a vector fluctuating in length end to end within a data set (Du Plessis, 2005; Stricklin & Almeida, 2010). When using the centroid method, factor loadings, or values expressing the correlation of each individual Q-sort with the centroid are computed. Each factor loading represents the contribution of that Q-sort to the length of the centroid and determines whether the factor will be extracted.

Principal Component Method. When using principal component method, the least number of factors that can be identified while still accounting for the common variance of a set

of variables are extracted, in other words, the *variance* of factor loadings is maximized (Akhtar-Danesh et al., 2013). This differs from centroid method, where the *average* of the factor loadings is maximized. When compared to centroid method, principal component method is thought to be less conducive to facilitating theoretically driven results. For this reason, centroid method is the accepted extraction method of choice for most Q-methodology research. In this thesis, centroid method was used for factor extraction.

Factor Rotation. The initial factors that are extracted typically act as raw material for rotating the original factors to allow for the generation of more precise and relevant factors (Akhtar-Danesh et al., 2008). PQ Method offers two methods for rotation of factors, varimax rotation or manual rotation.

Varimax Rotation. Varimax rotation is chosen when the researcher wishes to maximize the variance between each factor in an attempt to ensure that each participants' Q-sort is associated with only one factor (Thomas & Watson, 2002). It is a complex, iterative process through which variance is mathematically distributed so that each individual Q-sort is strongly correlated with only one factor (Du Plessis, 2005).

Manual Rotation. Manual rotation is appropriate when the researcher wishes to manually manipulate rotation of the originally extracted factors. For example, a researcher may desire to group Q-sorts based on demographic data that is viewed as important in interpretation of the factors (Akhtar-Danesh et al., 2008).

In this study, varimax rotation was selected for use instead of manual rotation. While the centroid method for factor extraction was chosen, in part, to give the researcher flexibility if manual rotation was deemed necessary, varimax rotation was chosen predominantly to ensure that the initial extracted factors were saturated and that all Q-sorts were taken into consideration. Furthermore, the demographic data collected was descriptive and used to enhance

interpretation of the factors but it was not deemed critical to the identification of factors.

Therefore, varimax rotation was the best methodological choice for factor rotation.

Factor Loadings. Following factor extraction and rotation, four distinctive factors were revealed. In this study, 29 of 38 Q-sorts had statistically significantly loaded among the four factors. When Q-sorts do not statistically significantly load on any factor, or when they load on more than one of the identified factors, they are considered ‘confounded’ and are not included in further analysis (Akhtar-Danesh et al., 2008). In this study, no Q-sort loaded on more than one factor. However, nine Q-sorts did not load on any of the four extracted factors, indicating that these nine participants had idiosyncratic views compared to the four distinct viewpoints existing in the data set. It is recognized that these nine participants do, in fact, have a viewpoint pertaining to role modelling by preceptors, however, it did not load significantly on any of the extracted factors, nor was the viewpoint distinct enough to form its own factor (Akhtar-Danesh et al., 2007).

In Q-methodology it is also possible that there are negative and positive statistically significant loadings on one factor. In these situations, the implication is that the identified factor is bipolar, meaning that the factor actually represents two groups of participants, each having an opposite point of view (Akhtar-Danesh et al., 2008). In these situations, the bipolar factor is broken down into two factors, one representing the positive loadings and the other the negative loadings.

Interpretation of Factors

At this point in the by-person factor analysis, quantitative analysis lends itself to qualitative interpretation. Following the strictly mathematical extraction and rotation of factors, interpretation of the factors is completed through interpretation of distinguishing and consensus statements simultaneous with analysis of factor scores.

Distinguishing Statements. The uniqueness of each factor is defined by distinguishing statements, defined as the presence of a statistically significant ($p < 0.05$) difference score (difference between a statement's score on any two factors). In reviewing the distinguishing statements for each of the four identified factors, the researcher was able to identify statements placed by participants at the extreme ends of the Q-grid, and to interpret content areas that were collectively agreed or disagreed with by the sample.

Consensus statements. Q-statements that do not discriminate between any of the identified factors are known as consensus statements, or statements in which there is no statistically significant difference between any factors (all participants have assigned the statements similar scores). These statements guided interpretation as they represented common viewpoints across all factors, or groups of participants.

Factor Scores. A factor score is assigned to each individual Q-statement used in the study (in this study, $n=34$). The factor score, also known as the z-score, is the normalized weighted average score given to each statement based on the rankings of the respondents that defined each factor (Thomas & Watson, 2002). The z-scores are applied to the quasi-normal distribution used in the study (-4 to +4). Analysis of the z-scores within this distribution provide us with an 'ideal' Q-sort for each of the identified factors, representing how a participant would have ranked each Q-statement if they had a 100% loading on that factor (Thomas & Watson, 2002). Factor scores were, therefore, an important consideration in the interpretation and labelling of the factors because they pointed out any outlying statements that warranted particular attention. Usually, these were the statements that are ranked at extreme ends of the distribution.

Ethical Considerations

This research was considered non-invasive, involving minimal risk and including no

vulnerable populations. The ethical principles of Respect for Persons, Concern for Welfare, and Justice are discussed below.

Respect for Persons. The Tri-Council Policy Statement [TCPS], authored by the Canadian Institutes of Health Research [CIHR], the Natural Sciences and Engineering Research Council of Canada [NSERC], and the Social Sciences and Humanities Research Council of Canada [SSHRC] acknowledge *Respect for Persons* as a core ethical principle in research (2010).

Autonomy, defined as “the ability to deliberate about a decision and to act based on that deliberation” (CIHR, NSERC, SSHRC, 2010, p. 8), is the main avenue through which a researcher demonstrates respect for persons. In this study, autonomy was respected by ensuring that all potential participants were aware that participation was voluntary and that withdrawing at any time would not result in any consequences to them. Additionally, electronic and paper copies of the Letter of Information containing complete details of the study was offered to each participant to better inform their decision to participate. Written consent was obtained from participants in the cross-sectional survey.

Concern for Welfare. Concern for welfare is a core ethical principle that is best demonstrated by researchers through efforts to protect participants, or minimize risks (CIHR, NSERC, SSHRC, 2010). While this study was considered non-invasive and of minimal risk, in order to demonstrate concern for welfare, risks were anticipated and strategies to mitigate them explicated.

For example, participants completing the cross-sectional survey may have felt some mild frustration as they sorted the cards, especially if they found that they felt similarly toward two or more statements and experienced some difficulty in ranking them. The level of frustration would not be expected to be higher than that which would be experienced when

playing a board game. This risk was minimized through the promotion of a supportive, quiet environment, and a pace of activity that did not rush the participant.

Faculty who participated in the cross-sectional survey and completed the follow-up activity of providing feedback about the Q-sample may have felt uncomfortable with the statements and what they reflected about the students' opinions of their preceptored experience. This might have limited or altered the perspectives they shared with the researcher. This risk was mitigated by the voluntary nature of the research.

There was a potential risk of inconvenience to participants. This risk was minimized through the following actions. All participants who were approached were aware that their participation was voluntary and may end at any time with no consequence to them, and all meetings were conducted at McMaster University (Health Sciences Building), or at the location of the participant's choosing, at a mutually agreeable time.

Respect for Privacy and Confidentiality is an element of Concern for Welfare; the term confidentiality is defined as "the obligation of an individual or organization to safeguard entrusted information" (CIHR, NSERC, SSHRC, 2010, p. 56). To maintain confidentiality in this study, email messages from all participants were not retained in the researcher's inbox or computer memory after the appropriate data (time, location of meeting) were recorded. All study data entered on a computer were protected by password. Once the study, appropriate academic dissertation and defence are completed, the data will be destroyed. This action will occur in September 2013.

Justice. Justice refers to a researcher's "obligation to treat people fairly and equitably" (CIHR, NSERC, SSHRC, 2010, p. 10). Recruitment and the potential power imbalance between researcher and participant are areas where the consideration of justice is critical (CIHR, NSERC, SSHRC, 2010). To demonstrate awareness of justice, the sample inclusion criteria

developed for this study did not exclude any participant arbitrarily. This study was approved by the Faculty of Health Sciences Research Ethics Board on February 16, 2012 (see Appendix L).

Chapter Summary

This chapter provided an overview of Q-sort methodology, why it was appropriate for this thesis, and presented a detailed account of this study's design, data collection, and data analyses processes. Ethical considerations specific to this study were discussed.

Chapter 4: Results

This chapter provides the results of several types of analyses used in this thesis. In Q-methodology, study results typically refer to the interpretation of the groups, or in statistical terminology, factors, that emerged from the by-person factor analysis. As stated in Chapter 3, data analyses in this study consisted of descriptive statistics and by-person faculty analysis.

First, frequencies and means were computed for the participants' demographic data using SPSS. As discussed in Chapter 3, student viewpoints about preceptor role modelling were sought by proxy from faculty participants. For this reason, the descriptive summary presented describes the sample of *faculty* participants.

Second, PQ Method was used for by-person factor analysis of the Q-sorts. Though faculty were used as proxies in this study, the four factors identified via by-person factor analysis refer to collective *student* viewpoints about role modelling by preceptors. Interpretations of the four factors are presented, including distinguishing statements and factor scores. These are supplemented by verbatim comments made by participants and recorded by the researcher during their Q-sorting. Additionally, the consensus statements and one non-discriminate statement are described and interpreted in the context of the four identified factors.

Descriptive Summary of Participants

As Table 9 illustrates, a total of 38 participants included 16 (42%) full-time faculty and 11 (29%) part-time faculty. The sample also included RNs with clinical faculty appointments at McMaster University (n=11), who are employed by health care agencies where Level IV students have clinical placements. The three types of faculty do not differ in their time commitment to teaching or the teaching responsibilities associated with teaching Level IV professional practice students.

Table 9
Faculty Characteristics

Variable	Frequencies	
	n	Percent
Types of Faculty Appointment		
Full-time	16	42.0
Part-time	11	29.0
Clinical	11	29.0
Gender		
Female	38	100.0
Age Range		
25-30 years	2	5.3
31-36 years	2	5.3
37-42 years	2	5.3
43-50 years	10	26.3
50-55 years	8	21.1
55+ years	14	36.8
Age Distribution Across Faculty Types		
<i>Full-Time</i>		
31-36 years	1	6.3
37-42 years	2	12.5
43-50 years	4	25
50-55 years	3	18.8
55+ years	6	37.4
<i>Part-Time</i>		
25-30 years	2	18.2
31-36 years	1	9.1
43-50 years	4	36.4
50-55 years	2	18.2
55+ years	2	18.2
<i>Clinical Faculty</i>		
43-50 years	2	18.2
50-55 years	3	27.3
55+ years	6	54.5
Types of Professional Placement Course Placements		
Inpatient Services only	18	47.4
Community Care only	3	7.9
Inpatient/Ambulatory	7	18.4
Inpatient/Community	2	5.3
Ambulatory/Community	1	2.6
All of the above	7	18.4

All participants were female, which was not unexpected because there were approximately five eligible male faculty across the three categories within the School of Nursing teaching compliment. When considering the ability of the faculty to act as proxies for the students that they tutor in Level IV professional practice courses, the mean of 11 years teaching ($SD=6.8$, $Range=2-25$) indicated that most participants were experienced faculty. In addition, the eligibility requirement that the subjects had taught professional practice within the

past three years ensured that the subjects could reflect on contemporary student experiences. Almost half of the participants were 43-55 years of age, and 14 (37%) participants were 55 years of age or older. Only 16% of the faculty sample were 25-42 years of age. The participants reported teaching between 2-150 students in Level IV professional nursing courses, with a mean of 34 (SD=29.2, Range=2-150) students per faculty.

The majority (47%) of the faculty taught students assigned to acute inpatient units. This does not necessarily infer the faculty members' clinical background, but rather the type(s) of clinical area(s) where their students typically were placed and assigned to preceptors. Faculty often are assigned Level IV students where they have clinical expertise or experience, and/or have had previous students in placements. For example, seven faculty employed in community health settings taught only students in community placements due to their specialized expertise.

The demographic data not only described the characteristics of the participants, but also assisted in supporting the level of the participants' theoretical relevance, to the topic of interest. In this way, the demographic data showed that the use of faculty as a proxy in revealing collective student viewpoints about role modelling by preceptors could be justified. Therefore, it was suitable to proceed with the by-person factor analysis.

Results of By-Person Factor Analysis

Using PQ Method, centroid method factor extraction and varimax factor rotation revealed four distinct factors. At the time of Q-sort completion, these four factors were representative of groups of participants with four distinct viewpoints present among the faculty participants. For this reason, for the remainder of this thesis, the words factor and group will be used interchangeably. The four factors were defined by at least four participants, and as many as ten participants, a finding indicating statistically robust results (Brown, 1993). Additionally, all four factors were defined by a range of four to seven distinguishing statements with statistical

significance at the $p < 0.01$ level.

A total of nine participants did not load statistically significantly on any of the four existing factors present within the dataset. These nine Q-sorts represented idiosyncratic views on role modelling by preceptors, and therefore were excluded from further analysis and interpretation (Akhtar-Danesh et al., 2008).

Factor Labels. In Q-methodology, factor labels should be concise and permit readers to readily understand the fundamental standpoint that the factor represents. Table 10 provides the factor labels for this study. The factors were named as ‘*explicit teaching enthusiasts*’, ‘*socialization supporters*’, ‘*champions of clinical competence*’, and ‘*advocates for authenticity*’.

These factors accounted for 46% of the variance among the completed factor correlation matrix (see Table 10). While accounting for 46% may not be as high a percent that a traditional factor analysis would yield, in by-person factor analysis, lower variance is acceptable because the priority is to identify apparent viewpoints or preferences, not to account for the largest percentage of variance possible (Valaitis, Akhtar-Danesh, Eva, Levinson, & Wainman, 2007).

Table 10
Factor Labels

Factor Number and Name	Number of Participants Loading on Factor	Variance Percent
Explicit Teaching Enthusiasts	7	13
Socialization Supporters	10	14
Champions of Clinical Competence	8	12
Advocates for Authenticity	4	7
Total	29	46

Factors were labelled using the following process. First, the distinguishing statements and normalized factor scores for each factor were considered and compared to determine areas of high and low priority for each group. After gaining a sense of each group’s viewpoint about student opinions on role modelling by preceptors, participants’ Q-sort scoring sheets were organized according to the factor. Then, the verbatim notes about the rationale for Q-statements

positioned at the extremes [‘Strongly Agree’ (+4) and ‘Strongly Disagree’ (-4)] Q-statements were reviewed. The definitions of ‘role modelling’ provided by each participant on the demographic form also were re-read. In this way, illustrative comments were used to support the initial interpretation of each groups’ role modelling opinions.

Finally, the six role modelling thematic categories (see Chapter 2, Table 7), informing both the *Conceptual Framework of Preceptors as Stage Role Models* and the categorization of the Q-sample were re-visited. These six categories emerged during concourse: socialization behaviours, professional behaviours, professional practice knowledge and skill, intentional role modelling/attitudes towards role modelling, teaching-learning, or personal characteristics. Because the number of statements in the Q-sample representing these six categories was designed to be more or less equal, the distinguishing statements for each factor were easily identified as belonging to distinct role modelling categories. This aided in the interpretation of each factor’s point of view and in the final naming of each factor. Given the uniqueness of each factor, the faculty characteristics provided in Table 11 also guided interpretation of the identified factors by assessing whether distinct demographics characterized each factor.

Factor 1: Explicit Teaching Enthusiasts. The first identified factor was characterized by seven faculty. The majority (57%) were 55 years of age or older at the time of their Q-sort. This factor was comprised of nearly equal representation from each faculty type: three full-time, two part-time, and two clinical faculty. This group of faculty had taught a mean of 32 Level IV students over an average of nine years (see Table 11).

Table 11
Factor-Specific Faculty Characteristics n (%)

Variable	Factor 1	Factor 2	Factor 3	Factor 4
Types of Faculty Appointment				
Full-time	3 (42.8)	4 (40.0)	3 (37.5)	2 (50.0)
Part-time	2 (28.6)	0	5 (62.5)	2 (50.0)
Clinical	2 (28.6)	6 (60.0)	0	0
Total	7 (100.0)	10 (100.0)	8 (100.0)	4 (100.0)
Gender				
Female	7 (100.0)	10 (100.0)	8 (100.0)	4 (100.0)
Age Range				
25-30 years	1 (14.3)	0	1 (12.5)	0
31-36 years	1 (14.3)	0	0	0
37-42 years	0	0	0	1 (25.0)
43-50 years	0	3 (30.0)	4 (50.0)	0
50-55 years	1 (14.3)	3 (30.0)	3 (37.5)	1 (25.0)
55+ years	4 (57.1)	4 (40.0)	0	2 (50.0)
Types of Professional Placement				
Course Placements				
Inpatient Services only	3 (42.9)	6 (60.0)	2 (25.0)	1 (25.0)
Community Care only	1 (14.3)	0	0	1 (25.0)
Inpatient/Ambulatory	0	2 (20.0)	2 (25.0)	2 (50.0)
Inpatient/Community	0	1 (10.0)	0	0
Ambulatory/Community	0	0	1 (12.5)	0
All	3 (42.9)	1 (10.0)	3 (37.5)	0
No. of Years Teaching Experience				
	Range 2-23	Range 3-20	Range 4-25 yrs.	Range 7-25
	Mean 8.9	Mean 10.7	Mean 11.2	Mean 13
	SD 7.4	SD 4.9	SD 7.5	SD 8.1
Estimated No. of Students Taught				
	Range 2-60	Range 6-80	Range 8-150	Range 15-50
	Mean 32	Mean 29.2	Mean 45.8	Mean 31.7
	SD 22.7	SD 22.5	SD 48.2	SD 16

Distinguishing Statements. The distinguishing statements defining the uniqueness of Factor 1 are presented in Table 12. Analysis and interpretation of these 11 distinguishing statements illustrated that faculty felt that students feel deserving of excellent role models, who are knowledgeable about the teaching aspect of the preceptor role. Specifically, this factor valued knowledge and the explicit enactment of clinical teaching-learning strategies.

Enthusiasm for explicit teaching was clearly reflected by the distinguishing statements ranked within the ‘agree’ gradations. The content of these statements included: approachability of a preceptor, the necessity of a preceptors’ non-judgmental assessment of a student’s learning needs, and the importance of a preceptor allowing a student to practice autonomously, while still providing support when needed throughout the professional practice placement. The highest

ranked statements (+3) for this factor, represent explicit use of clinical teaching-learning strategies, and belong to the ‘personal characteristics’ and ‘teaching-learning’ role modelling categories established in the concourse phase.

At the point of neutrality, it was again seen that this group of faculty noted that their students tend to place more emphasis on a preceptors’ quality of teaching, rather than the preceptor’s clinical competence. For example, the students described by this group of faculty are indifferent (scored as 0; neutral) in a situation where the preceptor does not provide nursing care within the accepted standard of practice. Indeed, the most negatively-ranked statement (-3) in the factor falls under the role modelling category of ‘professional practice knowledge and skill’ and indicates that students do not feel implicit learning is the strongest method for teaching things that cannot be readily learned from textbooks or lectures. Instead, these students associate role modelling by preceptors with unambiguous use of specific, recognizable clinical teaching-learning methods geared towards the students’ specific learning needs. One participant loading on this factor stated “*students ... want a preceptor who is a ‘good teacher’ - willing to teach them using direct, didactic teaching strategies*”.

Many participants loading on this factor used the term ‘good teaching’ in providing rationale for their statement placements and definitions of role modelling; for example, “*being a good role model is being a good teacher – a preceptor has to teach the student what they will be doing once finished their undergraduate degree*”. When interpreting Factor 1, it was worthwhile reflecting back on the definition of ‘good teaching’ explored in Chapter 1. Good teaching occurs when the teacher reflects on student feedback and attempts to meet the needs of their students based on positive or constructive feedback (Fenton & Szala-Meneok, 2010). This conceptualization seems fitting in the context of Factor 1, in that these faculty taught students who designated preceptors as role models when they ‘personalized’ their teaching to meet

individual students' learning needs.

Table 12
Distinguishing Statements for Factor 1

No.	Statement	Factor Scores ^a			
		1	2	3	4
31	If preceptors are not approachable (like not engaging students, or not working collaboratively with students), it is hard to see those preceptors as good role models.	3	0	2	1
29	Preceptors who are good role models conduct non-judgmental assessments of students' skill and knowledge, and will teach to an appropriate level of expectation.	3*	0	-1	-1
28	To be good role models, preceptors have to balance giving students their 'wings' (increasing their autonomy as the students increase their competence), and at the same time providing guidance and support when needed.	2*	4	0	0
14	When they see preceptors doing things that the students think are inappropriate, it is stressful because students don't know what action to take. For example, if a preceptor's practice is not within acceptable standards, students need to remember not to pick up those practices.	0*	-3	4	-2
2	The important learning moments often come from their relationships with their preceptors, working together, sharing knowledge and skills, problem-solving, and interacting with staff.	0*	3	2	2
1	When they begin their 4 th year professional practice courses, they see their preceptors as role models. The preceptors inspire students as they are about to begin careers as professional nurses.	-1	1	1	-2
18	While students do not choose their preceptors, they do choose their role models.	-1*	0	0	4
30	Preceptors must feel comfortable working and communicating with the students' tutors. This helps students feel that their preceptors are well connected to the nursing program.	-2	-4	-4	0
4	Preceptors convey powerful and long-lasting impressions about becoming a nurse and entering the profession.	-2*	3	0	0
17	One extremely important role modelling behaviour is being supportive of both the people with whom the preceptors' work, and the nursing students who they precept.	-3	-1	-1	1
10	Role modelling by preceptors is the strongest method for teaching the 'art of nursing'; in other words, the things that can't be readily learned without experiencing them. For example, preceptors model the realities of nursing in 'real life' and 'real time'.	-3*	1	3	1

^a Negative scores denote disagreement (or less agreement) with the statement.

p<0.05, * indicates significance at p<0.01

The negatively scored distinguishing statements for this factor further indicated that students in alliance with this factor would typically view their preceptors as a pivotal role model or guide as they transition into the nursing profession based on explicit, rather than implicit, teaching. For example, this group strongly disagreed that role modelling by preceptors was the strongest way of learning the 'art' of nursing.

Illustrative Remarks. Illustrative comments provided by the participants who loaded on

Factor 1 served to highlight this group's partiality to explicit teaching.

- *“Enthusiasm about, and knowledge about, good teaching has been re-iterated by many students as the most important role modelling behaviour”.*
- *“Students assume that preceptors are confident nurses, but believe that [being a] good teach[er] is difficult for preceptors to do well. Students tend to view preceptors as role models when they see that the preceptor is able to create learning for them”.*
- *“Students feel that their clinical experiences are spoiled if the preceptor does not understand the curriculum, how to teach, and the importance of doing a fair assessment of their learning needs”.*

Factor 2: Socialization Supporters. In contrast to the somewhat balanced representation of full-time, part-time, and clinical faculty comprising Factor 1, Factor 2 depicted the viewpoint of ten faculty, six of whom held academic clinical faculty appointments, and four who held full-time positions. This group of participants taught, on average, 30 students per faculty member over a mean of 11 years. All of the participants who loaded on this factor were 43 years of age or older and were evenly spread across the three age categories of 43-50 years, 50-55 years, and 55 years or over (see Table 11).

Distinguishing Statements. Table 13 presents the distinguishing statements of Factor 2. Analysis and interpretation of the 12 distinguishing statements revealed that the students represented by this factor view role modelling by preceptors as most rewarding when focused on socialization to the realities of nursing for RNs.

As discussed in Chapter 1 and 2, professional socialization relies heavily on role modelling and experiential learning (Bahn, 2011; Dinmohammadi et al., 2013, Duchscher, 2008; Gray & Smith, 1999). As one participant stated, *“students are most enthusiastic about professional practice simply because by Level IV, they crave experience”*. This was clearly indicated by the statements that the participants ranked as ‘Strongly Agree’ (+4). These participants related role modelling by preceptors with experiential learning activities, such as observing caring and therapeutic communication, working directly alongside preceptors with a

variety of patients, sharing professional practice knowledge and skills, and observing ‘real life’ clinical problem-solving. The two statements ranked as moderately positive (+3) belong to the ‘socialization behaviours’ category, and indicated that the type of student represented by this factor recognizes the powerful, long-lasting impact that unexpected, autonomous, ‘real-life’ clinical experience has on the transition from student to registered professional. The most highly rated statements (+4) belong to the role modelling categories of ‘professional practice knowledge and skill’ and ‘teaching-learning’.

The participants loading on this factor indicated that their students do not believe that an important aspect of role modelling is the preceptor’s behaviour toward the students. Statements about the personal characteristics of preceptors, such as approachability or enthusiasm for working with students were ranked as neutral (0) for this group. These participants described students who believe that role modelling by preceptors should prepare senior students to work in real-life conditions, even if this preparation involves less than optimal interactions. For example, the most negatively (-2) ranked statement by this group was: “Students can tell when preceptors don’t really want to work with learners. Students find it hard to learn and become more confident when they feel that they are seen as being a burden.” This group somewhat disagreed (-2) with this statement. It may be that this factor recognizes that students do add to the workload of preceptors because preceptors generally have the same patients as nurses without students, and have the added responsibility and time commitment of teaching.

Table 13
Distinguishing Statements for Factor 2

No.	Statement	Factor Scores ^a			
		1	2	3	4
13	Watching preceptors communicate and show caring with patients, families and staff, teaches students how to initiate and maintain therapeutic relationships, as well as effectively communicate with the nursing team.	3	4	3	-1
28	To be good role models, preceptors have to balance giving students their ‘wings’ (increasing their autonomy as the students increase their competence), and at the same time providing guidance and support when needed.	2	4*	0	0
2	The important learning moments often come from their relationships with their preceptors, working together, sharing knowledge and skills, problem-solving, and interacting with staff.	0	3*	2	2
4	Preceptors convey powerful and long-lasting impressions about becoming a nurse and entering the profession.	-2	3*	0	0
8	Good role models demonstrate that they are life-long learners. They are open to learning from others, even students.	1	0*	-2	3
22	They feel like preceptors should be enthusiastic about working with students, for example, having an ‘I want to work with students’ attitude.	1	0*	2	-3
31	If preceptors are not approachable (like not engaging students, or not working collaboratively with students), it is hard to see those preceptors as good role models.	3	0	2	1
34	Good role models show empathy towards students, providing support and guidance. Student nurses juggle many challenges, including physically and emotionally draining clinical experiences, and having many demands on students’ lives.	0	-1	1	1
32	Preceptors who demean students stand very little chance of having students view them as positive role models, even if they are competent and experienced. It’s hard for students to look past the way preceptors make them feel.	4	-1*	4	3
11	As Level IV nursing students, they feel that they can discern between good nursing practices, and negative ones. If they don’t agree with the preceptors’ practice(s), then they don’t have to imitate those practices.	0	-1	-3	0
15	They feel that preceptors should have sufficient experience on the unit, to ensure that the preceptor-student relationship is not one of “student teaching another student”.	-4	-2*	0	-4
19	Students can tell when preceptors don’t really want to work with learners. Students find it hard to learn and become more confident when they feel that they are seen as being a burden.	4	-2	2	-1

^a Negative scores denote disagreement (or less agreement) with the statement.

p<0.05, * indicates significance at p<0.01

The statement “Preceptors who demean students stand very little chance of having students view them as positive role models, even if they are competent and experienced. It’s hard for students to look past the way preceptors make them feel” was ranked as ‘slightly disagree’ (-1). This indicates that students represented by this factor may accept that demeaning interactions might take place between preceptors and students, and maintain that this does not affect a preceptors’ status as a role model.

Illustrative Remarks. Instructive comments from the *socialization supporters*

included:

- *“Students view preceptors who are sarcastic as preparation for the real world of nursing. Students are aware that anyone who is hired on a clinical floor knows more than they do, so they’ll take their lumps.”*
- *“Respect for [a] preceptor as a competent nurse is how students gauge whether a preceptor is a role model, regardless of if the preceptor is friendly to them. Students understand that preceptors don’t have time for the ‘mushy’ stuff.”*
- *“Students see preceptors as role models for the good, the bad, and the ugly sides of nursing. Students know that preceptors are trying to introduce them to what they’ll face day-to-day in their careers.”*
- *“Many of my students feel that the best thing a preceptor can do for them is let them know how things really are in the nursing profession. These preceptors become role models for the students because they feel like they have become privy to information that wasn’t available to them before.”*

These notes reinforced the significance that this type of student places on using clinical experience to increase their readiness for careers as RNs. The distinguishing statements indicated that these students invest heavily in experiential learning and either do not expect, or are willing to relinquish, the development of mutually respectful relationships with their preceptors as long as they are given opportunities to immerse themselves in the culture, norms, and values of a specific clinical area.

Factor 3: Champions of Clinical Competence. A total of eight faculty loaded on Factor 3. Five faculty taught Level IV professional practice courses part-time, and three were full-time faculty. No clinical faculty loaded on this factor. This group taught more students than those faculty loading on the other factors, with a mean of 46 students per faculty. The mean number of years of teaching experience for this group was 11 years. The majority (50%) of faculty that loaded on this factor were between 43-50 years of age (see Table 11).

Distinguishing Statements. The six distinguishing statements characterizing this factor, provided in Table 14, clearly projected a cohort of students for whom a preceptors’ professional practice competence, including nursing knowledge, practical nursing skills, and quality of patient care, were the benchmarks for being a role model. For participants who loaded on this

factor, the most positively ranked (+4) statement indicated that students experience stress when a preceptors' clinical practice does not meet best practice guidelines or CNO standards of practice. The most negatively ranked statement (-3) further supported the importance of preceptors' clinical competence to students, indicating that some students may not feel like they have the ability to discern good from poor nursing practice. Both of these statements fall within the role modelling category of 'professional practice knowledge and skill'.

The only statement ranked as neutral (0) conveyed that this group accepts that nurses with less experience can be exceptional role models for students. As one participant stated, *“true role modelling occurs when students develop relationships with preceptors, a process that is expedited when the preceptor is young and [relates well] to the student”*.

Table 14
Distinguishing Statements for Factor 3

No.	Statement	Factor Scores ^a			
		1	2	3	4
14	When they see preceptors doing things that the students think are inappropriate, it is stressful because students don't know what action to take. For example, if a preceptor's practice is not within acceptable standards, students need to remember not to pick up those practices.	0	-3	4*	-2
10	Role modelling by preceptors is the strongest method for teaching the 'art of nursing'; in other words, the things that can't be readily learned without experiencing them. For example, preceptors model the realities of nursing in 'real life' and 'real time'.	-3	1	3*	1
15	They feel that preceptors should have sufficient experience on the unit, to ensure that the preceptor-student relationship is not one of "student teaching another student".	-4	-2	0*	-4
8	Good role models demonstrate that they are life-long learners. They are open to learning from others, even students.	1	0	-2*	3
26	Preceptors need to remember that as clinical teachers they are always using role modelling as a teaching strategy. Some preceptors may not always be aware of what, and when, they are role modelling for students.	1	1	-2*	2
11	As Level IV nursing students, they feel that they can discern between good nursing practices, and negative ones. If they don't agree with the preceptors' practice(s), then they don't have to imitate those practices.	0	-1	-3*	0

^a Negative scores denote disagreement (or less agreement) with the statement.

p<0.05, * indicates significance at p<0.01

Illustrative Remarks. According to the faculty who loaded on this factor, students often express that preceptors are seen as role models by students when they begin their fourth year

professional practice courses. For this reason, these students have high expectations of a preceptors' breadth, depth, and scope of professional practice knowledge and skill. As seen in the most highly ranked, most strongly agree (+4) statement, these students experience cognitive distress when preceptors do not meet these expectations. As one participant remarked, "*students expect that they will be provided with the best nurses to learn from. They tend to take it hard when they lose trust in [the] preceptor as a role model for nursing practice*".

For this reason, the researcher focused on rationale addressing the importance of clinical competence and caring, as well as providing more detail about situations where standards of practice are not enacted.

- "*The art of nursing, like showing caring, are stand out moments for students – this is what they look forward to, and expect from their preceptored experience.*"
- "*Good clinical skills stand out for students when they talk about good role models. Even if the preceptor is not well-versed in the teaching-learning strategies used at McMaster, competence and judgment are immediately obvious to students.*"
- "*Students expect preceptor's to be ideal role models as clinicians. They are completely unable to recognize good preceptors with limitations. Instead, they are quick to condemn the preceptor as a bad role model.*"
- "*Many of my students feel distressed when a preceptor is not practicing appropriately, because they feel that the preceptor is automatically no longer a role model.*"

Factor 4: Advocates for Authenticity. The final factor was defined by four faculty participants, two part-time and two full-time. No clinical faculty loaded on this factor. Compared to the other three factors, these participants have taught Level IV professional practice for the longest amount of time, with a mean of 13 years teaching an average of 32 students per faculty (see Table 11).

Distinguishing Statements. The nine distinguishing statements for Factor 4 are presented in Table 15. According to the four faculty characterizing this factor, an important attitude expressed by senior students is that they prefer preceptors who model authenticity, or who openly display their true natures. Authenticity is defined in the Oxford Dictionary (2013)

as the act of being authentic, or “relating to or denoting an emotionally appropriate, significant, purposive, and responsible mode of human life”. This is clearly indicated by the highest ranked positive statements, strongly agree (+4) for this factor, the first of which falls into the role modelling category ‘personal characteristics’. For this factor, behaviours usually associated with authenticity included preceptors admitting when they are unsure about a course of action, or making earnest attempts to form relationships with students. One participant that loaded on this factor stated that *“being viewed as a role model depends solely on a reciprocal trusting relationship between the preceptor and student”*.

This group strongly agreed that that many students view their professional practice experiences as opportunities to meet and learn from many role models. The participants did not believe that students feel restricted to learning from one preceptor, but rather, feel liberated to seek out genuine role models. However, the students represented by Factor 4 do not make allowances for preceptors solely on the basis of their authenticity. As seen by the most moderately disagreed statements for this factor (-3), these students hold all nurses, not only preceptors, accountable to high nursing standards. In this way, these students consider ‘authentic’ role models to be those who embody positive personal characteristics and strive for clinical excellence.

The two moderate negatively ranked statements for this factor (-3) suggest that students have communicated the importance of honesty to their faculty. It is interesting to note that, on one hand, these students are inclined to associate role modelling with the development of mutually respectful relationships between students and preceptors. But, on the other hand, they also value truthfulness in their preceptors, and do not agree that role modelling is defined by enthusiasm for teaching. This strengthens the interpretation that, for this group, authenticity is highly valued as a role modelling aspect.

Table 15
Distinguishing Statements for Factor 4

No.	Statement	Factor Scores ^a			
		1	2	3	4
33	Preceptors who are good role models work from a position of authenticity. They admit when they don't know something, or when something could have been done better.	2	2	1	4
18	While students do not choose their preceptors, they do choose their role models.	-1	0	0	4*
26	Preceptors need to remember that as clinical teachers they are always using role modelling as a teaching strategy. Some preceptors may not always be aware of what, and when, they are role modelling for students.	1	1	-2	2*
30	Preceptors must feel comfortable working and communicating with the students' tutors. This helps students feel that their preceptors are well connected to the nursing program.	-2	-4	-4	0
13	Watching preceptors communicate and show caring with patients, families and staff, teaches students how to initiate and maintain therapeutic relationships, as well as effectively communicate with the nursing team.	3	4	-3	-1*
19	Students can tell when preceptors don't really want to work with learners. Students find it hard to learn and become more confident when they feel that they are seen as being a burden.	4	-2	2	-1
1	When they begin their 4 th year professional practice courses, they see their preceptors as role models. The preceptors inspire students as they are about to begin careers as professional nurses.	-1	1	1	-2
22	They feel like preceptors should be enthusiastic about working with students, for example, having an 'I want to work with students' attitude.	1	0	2	-3*
23	Expectations of preceptors as role models should be realistic. After all, they are meant to help nursing students learn about the realities of being a practicing nurse.	-1	-2	-2	-3

^a Negative scores denote disagreement (or less agreement) with the statement.

p<0.05, * indicates significance at p<0.01

Illustrative Remarks. Enlightening comments about the role of authenticity in preceptor role modelling included:

- *“Authenticity is key. For example, students really value... people in positions of power [admitting] when they don't know [something].”*
- *“Students are not dumb. They know who their role models are. Students all have different qualities they admire – except authenticity. Authenticity is the constant ... hallmark of a role model.”*
- *“Students are aware that they [add to the workload] for preceptors – [a] sense of entitlement notwithstanding, students [feel] most validated when they are able to develop [sincere] relationships with their preceptors.”*

By-person Factor Analysis Consensus Statements. The three consensus statements that did not distinguish among any of the identified factors are outlined in Table 16. These statements ranked similarly among all factors.

Table 16
Consensus Statements

No.	Statement	Factor Scores ^a			
		1	2	3	4
6	Preceptors should set good examples for students by looking professional, for example, wearing clothes that are appropriate for their work, and keeping neatly groomed hair and nails. These set important examples for students.	-2	-3	-2	-2
24	It may be difficult for preceptors to role model positively when they feel too busy, stressed, and/or tired. Preceptors are not perfect, and students should not expect them to be. No one is perfect.	-3	-2	-3	-3
27	They look to their preceptors to give feedback for improvement in ways that leave students feeling encouraged, wanting to learn more, and willing to try again.	2	2	3	3

^a Negative scores denote disagreement (or less agreement) with the statement.

First, all factors disagreed (range -2 to -3) with the notion that students feel that preceptors role model by looking professional. Most faculty participants were in agreement that indifference to long-established standards for professional appearance is a generational trend, for example, current senior students are accepting of preceptors with unconventional hair colour or visible tattoos.

The remaining two consensus statements strengthened the interpretation and labels applied to all factors. For example, the only agreed upon statement (range somewhat to moderately agree +2 to +3) among all the participants that loaded on a factor, stated that role modelling by preceptors is enhanced by preceptors giving feedback to students in a way that is encouraging and motivating. This concept would be important to senior students who value good teaching, realistic socialization, clinical competence, and authenticity. Similarly, all factor groups disagreed (range somewhat to moderately disagree -2 to -3) that students would not find it excusable for preceptors to provide anything less than optimal care during tiring or stressful shifts. Again, this would resonate with students seeking role models who are good teachers, realistic nurses, competent and caring clinicians, or authentic human beings. Students would not find it appropriate for a role model typifying any of these characteristics to lower their nursing standards due to tiredness or stress.

Non-Discriminate Statement. One statement within the Q-sample was identified as a distinguishing statement on all four factors. But because all the factors expressed a level of disagreement with the statement, even though it was a distinguishing statement for each factor, it did not actually discriminate between any of the factors (see Table 17). Therefore, it was recommended by Dr. N. Akhtar-Danesh (personal communication, March 2013) that this statement be removed from each factor group and interpreted as a consensus statement.

Table 17
Non-Discriminate Statement

No.	Statement	Factor Scores ^a			
		1	2	3	4
20	Nurse preceptors may be intimidated by an expectation that they have to role model at a level beyond which they think they can achieve.	-2	-4	-3	-1

^a Negative scores denote disagreement (or less agreement) with the statement.

This statement clearly indicated that senior students are not attuned to their preceptors' thoughts or feelings during the preceptored placement. Many participants provided rationale for their strong disagreement with this statement, with the recurring explanation being "*this is not on student's radar – they never think about how their preceptor[s] [feel]*".

Chapter Summary

This chapter provided a descriptive summary, including frequencies and means, of the participant characteristics. Additionally, the four distinctive factors revealed by the by-person factor analysis were described, including presentation of statistically significant distinguishing statements and verbatim transcripts of illustrative comments provided by the participants. The four factors were labelled as '*enthusiasts for explicit teaching*', '*socialization supporters*', '*champions of clinical competence*', and '*advocates for authenticity*'. Three consensus statements and one non-discriminate statement that was considered as a consensus statement, were described.

Chapter 5: Discussion and Conclusions

This chapter presents a discussion about the research findings of this thesis. First, the four identified Q-methodology factors are explored within the context of the research literature and other scholarly publications on role modelling. Second, using the *Conceptual Framework of Preceptors as Stage Role Models* developed for this thesis, interrelated elements of the four factors are discussed. The study results are examined using SLT, and the process of role modelling. The chapter closes with comments about the relevance and implications of the study findings for education and educational administration, clinical practice, and future research, as well as overall strengths and limitations of the study, plans for dissemination, and final remarks.

Supporting Evidence for the Study Findings

As stated in Chapter 2, the role modelling literature depicts three aspects of role modelling as all being important for an ‘ideal’ clinical role model (clinical teachers, including preceptors): clinical excellence, teaching skills, and personal characteristics (Boerbach et al., 2012; Cruess et al., 2008; Elzubeir & Rizk, 2001; Fromme et al., 2010; Jochemsen-van der Leeuw et al., 2013; Ullian et al., 1994; Wright & Carrese, 2002). While these three domains are all significant, there is no evidence demonstrating their relative importance. In contrast, this study identified differing viewpoints (factors) about role modelling, of greater or lesser importance depending on varying students’ perceptions, as viewed through faculty members’ perspectives.

The *explicit teaching enthusiasts* pointed to the importance of teaching and learning, while the *socialization supporters* indicated the significance of socialization behaviours. The *champions of clinical competence* favoured fundamentals of practice knowledge and skills as the most prominent viewpoint, and finally, the *advocates for authenticity* cited authenticity as a pivotal personal characteristic. In this way, the study results advance our knowledge about

viewpoints on role modelling by preceptors. Rather than the typical, overly simplistic understanding of key characteristics that are advocated as important for all role models, this study indicates that student viewpoints, as expressed by faculty, vary. In other words, when it comes to role modelling by preceptors as a teaching-learning strategy for senior nursing students, “one size” does not “fit all”. Evidence supporting the study findings emerging from the four factors is presented below.

Explicit Teaching Enthusiasts. In this study, Factor 1 clearly linked role modelling to the preceptors’ ability to enact explicit, student-specific, clinical teaching strategies. One faculty participant who loaded on Factor 1 stated that for senior students, “*the preceptors’ clinical competence is taken for granted, [while] their teaching prowess is less predictable*”. The student viewpoints represented by Factor 1 associated teaching aptitude with the preceptors’ use of explicit teaching strategies.

As discussed in Chapter 1, an experiential learning cycle is currently in use at by the B.Sc.N. Preceptorship Program at McMaster University (Figure 1). In the third step of this model, students and preceptors reflect on practical experiences that have been shared, a crucial step in transforming the unconscious, or implicit, to the conscious. When applying this cycle to Factor 1, it appeared that the *explicit teaching enthusiasts* may not be utilizing self-reflection as a pathway to fully recognizing the value of implicit learning opportunities. The students represented by the viewpoint in Factor 1 may not reflect the expectations of self-directed learning, whereby students also assume some responsibility for actively seeking out their own learning opportunities to satisfy their learning needs. Clearly, it would be unrealistic to expect preceptors to make all implicit learning opportunities explicit.

Several qualitative and quantitative studies illustrated students’ predisposition to explicit teaching skills. In their prospective qualitative inquiry investigating the qualities and skills of

exemplary pediatric educators, Fromme et al., (2010) noted that over half of all interview and focus group responses related to ‘the teaching skills’ domain. They concluded that role modelling and teaching excellence were interrelated and of particular importance to the medical students and residents who participated in their study.

The grounded theory study by Donaldson and Carter (2005) concluded that Scottish nursing students sought out role models who employed explicit teaching strategies, such as demonstration and provision of timely feedback. Both of these studies illustrated that knowledge about clinical teaching strategies and expert enactment of them is of high importance to nursing and medical students when considering role modelling. Hayajneh (2011) utilized the qualitative critical incident technique to describe the teaching behaviours of nursing clinical instructors that positively affected the clinical learning for nursing students. Hayajneh concluded that ten teaching behaviours epitomized nursing instructor role models, including utilizing explicit clinical teaching strategies, such as demonstration when required by a student.

Socialization Supporters. The salient student point of view illustrated by Factor 2 is the desire that preceptors enact role modelling behaviours designed to help socialize students to the nursing profession. Indeed, the relationship between professional socialization and role modelling is a well-supported concept within the role modelling literature (Kelly, 1992; Ousey & Johnson, 2007; Pfiel, 1997). Duchscher (2008) used grounded theory to develop a theoretical framework in response to the insecurities of nursing students who are making the transition to professional nurse, particular with issues of socialization. Role models were identified as important in facilitating the new nurses’ ability to develop their professional selves. Similarly, Gray and Smith (2000) conducted a grounded theory study to explore the phases of professional socialization in senior nursing students, concluding that role models are of pivotal importance in facilitating the successful transitions from student to professional.

Given the high acuity and increasing complexity of institutional and community-based nursing care, it is understandable that the students represented by Factor 2 want to be exposed to the reality of their future workplaces in order to gauge their preparedness (Duchscher, 2008). A number of authors identified that effective professional socialization is of foremost importance to students' successful employment as RNs (Fothergill Bourbonnais & Kerr, 2007; Luhanga, Dickieson, & Mossey, 2010).

Champions of Clinical Competence. Factor 3 indicated a sub-group of students who viewed role modelling by preceptors as their main avenue for developing professional practice knowledge and skill. In fact, the *champions of clinical competence* represented students who appeared to value a preceptors' clinical competence so highly that it acted as the deciding variable as to whether or not a preceptor would be considered a role model.

The perspective of Factor 3 is seen in the conceptualization of role modelling emerging from Wright and Carrese's (2002) qualitative inquiry (see Chapter 2, Figure 7). The researchers found that physicians identified as role models by their colleagues indicated that a minimum level of clinical expertise was required before a physician should be considered as a potential role model for students.

“I think you have to have clinical skills... or no one is going to even begin to think of you as a role model. But if you only have those things, you're not a role model either. So I think there are a group of skills or virtues that are permissive and then there are those which allow the permitted to have an impact on other people” (Wright and Carrese, 2002, p. 641).

While this study focused on the level of clinical competence of physicians required before role modelling is used as a teaching-learning strategy, Wright and Carrese's (2002) conceptualization is applicable to nursing. Indeed, throughout all the health sciences literature on role modelling, clinical expertise is a well-supported pre-requisite for role modelling in professional practice education (Boerbach et al., 2012; Elzubeir & Rizk, 2001; Fromme et al.,

2010; Jochemsen-van-der-Leeuw et al., 2013; Ullian et al., 1994; Wright & Carrese, 2002; Wright et al., 1998). Role modelling is also an expectation of the academic programs using a preceptored approach to senior professional practice education. The viewpoint of Factor 3 is a notable theme within the role modelling literature.

Advocates for Authenticity. The theme of the Factor 4 loadings was the importance of authenticity. When comparing this finding to the role modelling literature, authenticity is most often discussed as a facet of the three qualities or characteristics of ‘ideal’ role modelling: clinical, teaching, and personal characteristics. For example, in their systematic review, Jochemsen-van-der-Leeuw et al. (2013) found that honesty and integrity were frequently cited characteristics of positive role models. Likewise, Hayajneh (2011) listed the ability of preceptors to convey genuine concern in patients as motivating role model behaviour by clinical nursing instructors, while Hoare, Mills, and Francis (2012) emphasized the importance of a mutually satisfying relationship between learner and teacher. This way of thinking about authenticity differs from this study’s findings, in that the viewpoint represented by those loading on Factor 4 does not view authenticity as a discrete personal characteristic, but rather as a way of being in which authenticity permeates preceptors’ clinical competence and teaching skill.

Perry (2009b) offered a more in-depth look at the importance of authenticity in role modelling. In her phenomenological study, staff nurses identified peers whom they considered to be excellent role models for staff members. Four identified themes arose from the data: providing genuine affirmation; forging sincere, meaningful connections with colleagues; paying close attention to unspoken needs of patients; and actively thinking of oneself as an authentic role model for colleagues (Perry, 2009b). All of these themes directly reflect various forms that authenticity can take in nursing, ranging from support of colleagues and students, to the role of authenticity in caring for patients. Perry’s (2009b) findings about authenticity more closely

reflect those of this study than the literature that depicts it as a discrete personal characteristic.

Application of Results to Role Modelling Conceptual Framework

The previous section identified that, for the most part, the literature supported the interpretation of each of the four factors identified in this study. What the previous section could not show is the interrelatedness of each of the thematic role modelling categories within the *Conceptual Framework of Preceptors as Stage Role Models* developed for this thesis (see Chapter 2, Figure 6). Therefore, this section discusses the connections between the five thematic categories included in the framework as they relate to the four factors identified.

Teaching and Learning. When situating the *explicit teaching enthusiasts* within the conceptual framework, the faculty-derived student views about role modelling highlight the category of teaching and learning as the most important role modelling category. Certainly, preceptors' abilities to enact explicit teaching-learning strategies are grounded in knowledge of teaching-learning principles. But, it would be difficult for preceptors to be 'good teachers' if they did not role model clinical expertise and professionalism within their own practice. Additionally, explicit teaching by preceptors could be interpreted as enthusiasm for teaching, which would relate more to personal characteristics of preceptors than teaching skills. In this way, the teaching and learning category is related to other role modelling categories presented in the *Conceptual Framework of Preceptors as Stage Role Models*.

Socialization Behaviours. If the *socialization supporters* were presented with the conceptual framework, they would likely identify the category of socialization behaviours as the most important aspect of role modelling for their students. But, according to Gray and Smith (2009), some important socialization behaviours include a preceptor orienting a student to the clinical unit and to members of the health care team (teaching and learning), providing a student with pertinent information about various routines of the clinical area (professional practice

knowledge and skills), and introducing a student to important policies and procedures of relevance to the clinical floor (professional behaviours). Therefore, the role modelling categories of clinical competence, personal characteristics, and professionalism are highly connected to any socialization behaviours that preceptors demonstrate to students.

Negative Role Modelling. For Factor 2, preceptor role modelling encompasses behaviours that offer students an honest introduction to nursing, even less than optimal interactions. Therefore, when considering the *socialization supporters* in relation to the *Conceptual Framework of Preceptors as Stage Role Models*, the variable nature of negative and positive role modelling became very important. As one participant who loaded on Factor 2 stated, “*my students feel closest to being a real nurse when they work side-by-side with a preceptor during particularly harrowing shifts. A preceptor who is openly annoyed [abrupt] or tired is maybe the best kind of role model for students – because despite [their frustrations], they’re still there.*” In other words, these students are inspired by preceptors who offer them a candid picture of “real” nursing, even when an example might be negative. In this way, it appears that the students represented by Factor 2 are able to differentiate between positive learning gained through negative experiences in the work environment, and a preceptor whose behaviour is negative.

Unfortunately, this understanding of negative role modelling is typically not shared. As discussed in the first two chapters of this thesis, negative role modelling is usually defined as the absence, or opposite, of positive role modelling, but in fact, negative role modelling is a descriptor of the quality of role modelling as it occurs on the positivity-negativity spectrum. As the *socialization supporters* highlighted, instances of negative role modelling can be valuable, even inspirational. Despite the fact that the *socialization supporters* represent students that have the insight to transform elements of negative role modelling into positive learning, it appears

that the majority of this study's faculty participants continue to define role modelling as setting a positive example. All but one of the participants' definitions of role modelling, provided at the outset of the interview, focused on positive role modelling or did not address the issue of the quality of the role modelling. The one participant whose definition mentioned negative role modelling felt that it should be avoided: "*Role modelling can be positive or negative. But we obviously prefer positive because this exemplifies how student[s] should [behave] when carrying out their work*".

This way of thinking also was noted when considering the consensus Q-statement, "It may be difficult for preceptors to role model positively when they feel too busy, stressed, and/or tired. Preceptors are not perfect, and students should not expect them to be. No one is perfect." See Chapter 4, Table 16. All the participants who loaded on the factors moderately disagreed (range -2 to -3) with this statement. One important application of the findings of this thesis, then, is that students and educators alike, including faculty and preceptors, should become open to the valuable learning that may result from negative role modelling experiences in professional practice courses.

It should be noted that the researcher recommends that negative role modelling episodes or events be situated within the experiential learning cycle, as discussed in Chapter 1. Namely, an instance of negative role modelling should be shared or discussed by the student with either the preceptor or the faculty, and reflected upon through some form of dialogue (face-to-face, phone, journal). In this way, meaningful learning can result from an instance of negative role modelling. As Dewey stated, "we do not learn from experience...we learn from reflecting on experience" (Dewey, 1933, p. 73). Otherwise, an experience is simply an activity. Helping the student to learn from reflection is fundamental to a preceptor's approach to negative role modelling, as a preceptor needs to be aware of a negatively perceived incident.

Additionally, it is of import that a balance exists between behaviours that are designed to offer students realistic preparation for their nursing, and those that would constitute a lack of professionalism. For example, students represented in Factor 2 seemed to accept behaviours that were demeaning to them in some way as part of having ‘pragmatic’ expectations about what preceptors’ role modelled. Needless to say, while precepting a student can be challenging, not least because “the preceptor is still expected to maintain the level of [patient care] productivity that existed before the preceptorship...” (Barker & Pittman, 2010, p. 145), students should not accept demeaning behaviours as tolerable.

Of particular importance are the consequences of frequent or continual negative role modelling. The consequences include: failing to develop a sense of identity as a nurse; losing the connection and commitment to the nursing profession (Hickey, 2010), or leaving nursing altogether (Luhanga et al., 2010). Another serious consequence of recurrent negative role modelling that is not included in the types of disconnections listed above, is the adoption of the negative professional behaviours and less than adequate standards of nursing practice by the neophyte nurse. It is therefore very important that senior students understand that, “while conflict is an inherent part of nursing”, and indeed health care in general, antagonistic behaviour, such as demeaning comments or being made to feel like a burden, is not (CNO, 2009, p. 3).

Having indicated some serious consequences of chronic negative role modelling, it is important to place the framework’s negative-to-positive spectrum of the quality of role modelling into context. The framework is meant to indicate that occasional examples of negative role modelling that relate to an important teaching point have the potential for positive learning, and may even be transformational for a student. This aspect of the framework is not meant to imply that continual negative role modelling is conducive to positive learning

experiences. Related to the Factor 2 responses indicating some degree of acceptance of demeaning behaviours, socialization to the profession, a process of learning the professional culture by observing the norms, values, and behaviours of those within the profession, should be exemplary.

Professional Behaviours. There are numerous discussions in the literature that advocate for role modelling as the exclusive means to teaching professionalism (Cohen, Cruess, & Davidson, 2007; Cruess, 2006; Cruess & Cruess, 2008; Cruess, Cruess, & Johnston, 2000; Harris, 2004; Park et al., 2010). With this notion in mind, it would be expected that the four Q-statements under the category of ‘professional behaviours’ (see Appendix J) would be distinguishing statements among the factors. Yet, all the participants of this study were neutral about the four statements discussing professional behaviours. Only one of the statements was a distinguishing statement for two factors (Factors 2 and 4): “Good role models demonstrate that they are life-long learners. They are open to learning from others, even students”. The *advocates for authenticity* strongly agreed (+3) that preceptors should role model a continuous desire to learn, but for the two remaining factors, they either ranked this statement negatively or positioned it as neutral.

In addition, the consensus statement “Preceptors should set good examples for students by looking professional, for example, wearing clothes that are appropriate for their work, and keeping neatly groomed hair and nails. These set important examples for students”, highlights a lack of awareness as to the importance of role modelling as it relates to this aspect of professionalism. This statement was ranked as moderate disagreement (range -2 to -3) across all four factors. This is interesting because this Q-statement was the only one that faculty participants’ frequently identified when asked if there were any Q-statements that they would rank differently if completing the Q-sort from the faculty perspective. Of those participants who

saw this Q-statement as being different from their faculty perspective, the majority of faculty participants stated that this statement ‘should’ be ranked at least as somewhat agree (+2).

In the results of Akhtar-Danesh et al.’s (2013) Q-methodology study of perceptions of professionalism, a similar statement was ranked in a way that indicated that McMaster University School of Nursing faculty participants did not believe that professionalism was defined by a dress code, but did think that it was important to be neatly dressed and modestly attired (Akhtar-Danesh et al., 2013). For many faculty members, the preference for maintaining what used to be a professional standard for dress and appearance may be related to the concern about the societal trend to casualization and the extent that it has permeated professional nursing in the westernized world.

The corroboration of the faculty viewpoint outlined in Akhtar-Danesh et al. (2013), and the difference in the ranking of the student perspective reported by some of the same participants, despite their stated disagreement from a faculty point of view, provides evidence of participants bracketing their faculty perspective. It also provides evidence that the faculty participants were able to express students’ points of view as they were directed to do in the study interview instructions.

Professional Practice Knowledge and Skills. When situating the *champions of clinical competence* within the conceptual framework, this factor’s inclination toward the category of professional practice knowledge and skills is clear. However, preceptors’ ability to role model professional practice knowledge and skill encompasses many other role modelling categories. For example, a Canadian definition of competence in nursing practice refers to one’s ability to integrate and apply “the knowledge, skills, judgment and attitude required to carry out the role and work of a Registered Nurse” (College of Registered Nurses of Manitoba, 2013). This definition includes four of the six conceptual categories: professional practice knowledge and

skills, teaching and learning, professionalism, and personal characteristics. Therefore, the students represented by Factor 3 may focus on preceptors' clinical expertise as an indicator for whether the preceptors are role models, however, clinical competence is informed by other role modelling categories.

Personal Characteristics. As noted in Chapter 4, authenticity is defined as a purposeful, responsible, and genuine mode in which a person conducts his or her life. In this way, the *advocates for authenticity* would consider personal characteristics to be the most important role modelling category in the *Conceptual Framework of Preceptors as Stage Role Models*. The viewpoint of students expressed by Factor 4 is that of all possible aspects of role modelling by preceptors, practicing from a position of authenticity is key.

But, the *advocates for authenticity* also provide strong support for the interrelatedness of the role modelling categories. It could be argued that all the role modelling categories presented in the conceptual framework are grounded in the authentic relationships that preceptors develop with both patients and students. For example, a preceptor's professional practice competence is gauged in part by his or her ability to establish therapeutic relationships with patients, while a preceptor's level of accomplishment as a clinical teacher is dependent on forming a respectful relationship with students. Due to the profound role that authenticity plays in nursing, it is interesting that on average, the participants who loaded on this factor have taught Level IV professional practice longer than those loading on any of the other three factors.

In summary, in applying the four factors identified in this study to the *Conceptual Framework of Preceptors as Stage Role Models* of role modelling, it is likely that synergy occurs across two or more of the role modelling categories when role modelling is being used as a teaching-learning strategy. Discussion about different role modelling categories involved in a single role modelling encounter would serve to illustrate the interrelationships among the role

modelling categories.

Theoretical Applications of Results

As discussed in Chapter 2, Bandura's (1977) SLT and the process of role modelling (Crues et al., 2008) were chosen to supplement the interpretation of the study findings.

Application of Social Learning Theory. None of the study participants challenged the paramount role of experiential (social) learning in nursing education. It was well-accepted that professional practice learning occurs primarily as a function of preceptor role modelling in the senior year of nursing education. The results of this study supported the influence of the cognitive sub-processes of observational learning outlined by Bandura (1977) in SLT.

Attention, retention, reproduction, motivation, and reinforcement are discussed in relation to the results of this study.

Attention. According to Bandura (1977, 1986), the attentional phase of social learning relates directly to a student's willingness to observe the role model. In other words, the main variable influencing 'attention' is the perception of a student as to whether a preceptor is, in fact, a role model. Using the results of this study, the four factors identify four role modelling 'benchmarks' for McMaster University senior students that act as the key to the attentional phase: preceptors' use of explicit teaching strategies, ability to promote socialization of a student, demonstration of clinical competence, and/or their authenticity. While each student will prioritize differently, the bottom line, as Charters (2000) stated, whether the preceptor is a role model or not in the student's eyes "play[s] a [key] part in whether the [observed] information is used or discarded" (p. 27).

Retention and Reproduction. The importance of recalling observed clinical teachings, and having opportunities to practice and apply the demonstrated professional practice knowledge or skill were not concepts that were directly reflected in the Q-sample. However,

aspects of these sub-processes were present in the results of this study. For example, one of the Q-statements was: “To be good role models, preceptors have to balance giving students their ‘wings’ (increasing their autonomy as the students increase their competence), and at the same time providing guidance and support when needed.” This statement ranked strongly agreed (+4) by the *socialization supporters* and ranked at moderately agreed (+2) by the *explicit teaching enthusiasts*, indicating that these students value the opportunity to both independently apply, and practice, their nursing knowledge and skills with preceptors.

Motivation. As Armstrong (2008) stated, Bandura’s SLT propounded two elements of motivation: outcome efficacy (a student’s belief that the modelled behaviour leads to a positive outcome for the student) and efficacy expectation (a student’s belief that they are able to replicate the modelled behaviour). Both are reflected in the results of this study. When thinking about outcome efficacy, positive feedback is cited as a common example of ‘reward’ (Charters, 2000). In this study, the connection between motivation and positive feedback can be seen by the ranking (range +2 to +3) of the consensus statement “They look to their preceptors to give feedback for improvement in ways that leave students feeling encouraged, wanting to learn more, and willing to try again.” Irrespective of the role modelling areas that each factor values as most important to role modelling, receiving either positive feedback, or constructive feedback in a positive way, is an obvious source of motivation as described by SLT.

With respect to efficacy expectation, the varying opinions about the statement, “They feel that preceptors should have sufficient experience on the unit, to ensure that the preceptor-student relationship is not one of ‘student teaching another student’” demonstrate this aspect of motivation. Ranked as neutral (0) by the *champions of clinical competence*, it can be seen that students may have doubts as to the competence of neophyte nurses. In nursing, one historically prevalent belief about clinical competence is that expertise is dependent on time and experience,

and that only ‘expert’ nurses are highly proficient clinicians with the ability to deliver intuitive nursing care (Benner, 1982). This may contribute to the neutrality felt by the participants in Factor 3 when considering the clinical competence of a novice nurse.

However, this statement was ranked as strongly disagree (-4) by the *explicit teaching enthusiasts* and *advocates for authenticity*, and disagree (-2) by the *socialization supporters*. Furthermore, a recent trend in the level of experience of preceptors was noted in the McMaster Mohawk Conestoga B.Sc.N. Program Introductory Preceptorship Workshops for the academic year 2012-2013. In the past year, more novice nurses, including former students from the B.Sc.N. Program, were selected to be preceptors (E.A. Mohide, personal communication, March 2013) than in previous years.

This change may reflect the changing demographics of direct care RNs, from seasoned nurses with diplomas in nursing, many of whom are now leaving the workforce, to the less experienced B.Sc.N. prepared direct care RNs. In this way, senior B.Sc.N. students may be more likely to envision themselves as being preceptors in their not-too-distant future as RNs than when seniority in nursing seemed to be the most important criterion for attaining preceptor status (Heffernan, Heffernan, Brosnan, & Brown, 2009). Being able to see themselves more readily becoming a preceptor in the short term may be motivated by both efficacy expectation and outcome efficacy. For this reason, one application of the study findings will be to facilitate curricular change so that senior students are prepared to strategically use role modelling as future preceptors.

Reinforcement. SLT cautions that even in situations where an observed behaviour is initially resisted by the learner, repeated exposure can lead to the behaviour being adopted by the learner. As discussed in Chapter 1, not infrequently, there is a lack of intentionality about the use of role modelling by preceptors. Without the conscious enactment of role modelling by

preceptors, reinforcement of undesirable clinical behaviours can unknowingly occur. A second and related aspect to intentional role modelling and reinforcement is the vulnerability that students experience in new clinical settings. Students may be unable to discern good from poor nursing practices due to their inexperience, thereby increasing the likelihood that students might model themselves after their preceptors, whether the preceptors are competent in specific areas of their practice or not.

Because of the importance of these situations described above, a Q-statement was written specifically targeting student opinions about preceptors and the quality of their practices: “As Level IV nursing students, they feel that they can discern between good nursing practices, and negative ones. If they don’t agree with the preceptors’ practice(s), then they don’t have to imitate those practices.” The results reflected that reinforcement as described by SLT was supported. Both the *explicit teaching enthusiasts* and *advocates for authenticity* ranked this statement as neutral, while the *champions of clinical competence* strongly disagreed (-3) with the statement. The *socialization supporters* ranked this statement as slightly less negative (-1). This is likely because, if given the choice to observe a preceptor practicing within acceptable standards, or bearing witness to the type of nursing care delivered in ‘real life’ (hopefully, not mutually exclusive situations), the *socialization supporters* would prefer the latter. Despite this difference in rank, none of the groups felt that imitation of poor nursing practice was out of the realm of possibility. For this reason, one important application of the results of this thesis is that students, preceptors, and faculty members begin to think about, and evaluate, role modelling as an intentional teaching-learning strategy.

In conclusion, the main sub-processes of SLT were applied to the results of this study. They were employed to posit possible inferences of faculty members’ strong responses to particular statements and also to substantiate the important aspects of role modelling outlined in

Bandura's (1977) SLT.

Application of the Process of Role Modelling. The process of role modelling advanced by Cruess et al. (2008) was selected for use in interpretation of the study results because of its emphasis on the importance of intentional role modelling on the part of clinical teachers (preceptors). In Chapter 1, awareness of one's status as a role model, and approaching role modelling with intentionality were identified as inherent complexities in the use of role modelling as a teaching-learning strategy. But, it is not commonly addressed within the role modelling literature, and therefore, was explored as a concept within this thesis.

Intentionality of Role Modelling. Intentionality is represented in Cruess et al.'s (2008) model by the 'unconscious incorporation of observed behaviours' pathway (a pathway denoted by '3' in Chapter 1, Figure 3). The following Q-statement was included in the Q-sample to investigate the intentionality of role modelling: "Preceptors need to remember that as clinical teachers they are always using role modelling as a teaching strategy. Some preceptors may not always be aware of what, and when, they are role modelling for students".

This statement was identified as a distinguishing statement for both Factor 3 and 4. Interestingly, the *advocates for authenticity* agreed (+2) with this statement, but the *champions of clinical competence* disagreed (-2) with it. The *explicit teaching enthusiasts* and *socialization supporters* both agreed slightly (+1) with this statement. When considering the ranking of +2 given by Factor 4, the moderate agreement may relate to a sense of unease students feel when observing marked differences between times when preceptors are aware that they are role modelling for students, and when they are not.

However, Factors 1 and 2 were also in slight agreement with this statement. It cannot be explained, then, as only relating to preceptors' authenticity. Rather, the question of the impact of intentional role modelling can be more broadly explained by a comment made by a faculty

participant with respect to this statement: *“Preceptors probably aren’t aware that their students have watchful eye[s] and ear[s] out for their preceptor[s] at all times, but they do. Students pattern a lot of what they say and do based on what they see their preceptor[s] doing or not doing.”* On the one hand, this remark emphasizes the importance of preceptors being aware of their status as role models and being explicit about what is being role modelled. On the other hand, it also emphasizes the importance of students discussing implicit role modelling instances with preceptors and together reflecting on the learning opportunity(s) that were presented in the situation.

The responses to another Q-statement allowed the researcher to apply the process of role modelling (Cruess et al., 2008) to the study findings. The Q-statement follows: “They trust that the preceptors know what they are doing, and therefore, may not question preceptors’ methods of practice”. This was not a distinguishing statement for any of the factors; but, its comparative ranking among the factors could still be determined. As indicated by van Exel and de Graff (2005), z-scores represent the responses of a hypothetical participant with a 100% loading on each factor. When the Q-statement z-scores were retrieved from the tabular outputs generated by PQ Method, for this particular statement, the z-scores indicated that the participants loading on all four factors disagreed to some extent with this statement. The z-score for Factor 1 was -0.414, very close to the score of Factor 2 (-0.424), both of which could correspond to a rank of slightly disagree (-1). The z-scores of Factor 3 (-2.016) and Factor 4 (-2.178) indicated that these participants felt more strongly about their disagreement with this statement.

These scores indicated that senior nursing students are willing to question preceptors’ methods of practice in situations where clarification is needed. Responses seem to point to the notion that students who have reached the senior level in their education apply critical thinking, in particular, problem-solving; as well as formulate their own judgments in relation to

preceptors' behaviour. Therefore, the responses to this Q-statement suggested that the second pathway (active exploration of personal values, denoted by '2' in Figure 3) offered by Cruess et al. (2008) is substantiated by the results of this study. As one faculty participant stated, "*Asking questions and accessing research is second nature to McMaster students. They have the ability to explore, both on a personal and academic level, everything that they see in clinical*".

The above Q-statement also highlighted an important facet of intentional role modelling, that is, that making explicit that which is being role modelled helps students to engage in critical thinking, self-reflection, and discussion about a modelled behaviour. Without explicit explanations from preceptors about various modelled behaviours, situations of reinforcement and possible imitation of less than optimal nursing practice (discussed in application of the findings to SLT) become possible. Therefore, in applying SLT and the process of role modelling by Cruess et al. (2008) to the results of this study, two important strategies for using role modelling as a teaching-learning strategy emerged. First, it is crucial that preceptors be conscious of their status as stage role models, and second, approach the use of role modelling as an intentional teaching-learning strategy, that is, communicating what preceptors are role modelling explicitly.

Relevance and Implications of Study

The relevance of this study and its implications for education (including education administration), clinical practice, and research are summarized below.

Education. The results of this study:

- Suggest that there are a number of distinct viewpoints of preceptors' role modelling that may be of importance to different senior students. Understanding each student's perspective may assist in individualizing learning and broadening thinking.
- Support the *Conceptual Framework of Preceptors as Stage Role Models* developed for this thesis. This stage role model framework provides a current and comprehensive

conceptualization of role modelling as an experiential teaching-learning approach in preceptored clinical education.

- Suggest the use of three educational aspects to harness role modelling as an active teaching-learning strategy. These include i) intentional role modelling, ii) emphasizing reflection within the experiential learning cycle (Chapter 1, Figure 1), and iii) re-conceptualizing the traditional view of using negative, as well as positive role modelling, to forge positive learning outcomes.

Distinct Perspectives on Role Modelling. The results of this study advance our understanding of senior students' viewpoints of role modelling by preceptors, as seen through the eyes of faculty. The results reveal distinct differences in the viewpoints expressed by the four identified factors: explicit teaching, socialization behaviours, clinical competence, and authenticity. It is important for preceptors and faculty to understand that students vary in their impressions of the key aspects of role modelling, and to discuss role modelling expectations, needs, and priorities with their students. Also, the application of these four Q-methodology factors to the conceptual framework developed for this thesis illustrated the relatedness of the factors to the themes derived from the literature. Reviewing the thematic categories in which role modelling can take place, for example, professional behaviours, should be part of the discussion between preceptors, faculty members, and students.

Comprehensive Conceptualization of Preceptor Role Modelling. As discussed above, this thesis offers a *Conceptual Framework of Preceptors as Stage Role Models* that synthesizes key aspects of role modelling and the relationships among them. This may be helpful to preceptors and faculty when trying to identify strategic ways of using role modelling within a preceptored professional practice course. It also may help RNs to integrate the elements of stage role modelling into their identities as preceptors.

Because the role modelling aspects of curricula tend to be “hidden”, that is, not an explicit aspect of the written curriculum, the conceptual framework also can assist students in

developing views of role modelling in preceptorship that are more comprehensive than those that are currently being envisioned. Examples of more comprehensive views of role modelling include students noticing their own growth as a result of learning from positive and negative role modelling experiences, and increasing their understanding of preceptors' actions and behaviours as a type of teaching and learning. Some senior students may prioritize one specific aspect of preceptor role modelling, such as clinical competence, but may be unable to conceptualize role modelling as a teaching strategy when it relates to other aspects of the preceptors' responsibilities as direct care nurses, for example, behaviours that are critical to socialization to the profession. Helping senior students to conceptualize role modelling more broadly as a teaching-learning strategy may assist in harnessing learning opportunities more effectively.

Three Strategies for Harnessing Role Modelling. The results of this study:

- Highlight intentionality and awareness as tangible strategies to enhance role modelling.
- Support critical reflection as a key step in experiential learning (role modelling). By definition, role modelling involves a role model and a learner, and reflection in this context includes the preceptor and the student reflecting together, in addition to individual critical self-reflection both in and on-action. Reflection is key to making the unconscious conscious, and the implicit explicit.
- Suggest re-conceptualizing the quality of role modelling experiences on a positive-negative spectrum, and utilizing intentionality to transform instances of negative role modelling into positive learning outcomes.

Intentionality of Role Modelling. This study emphasizes the importance of preceptors becoming aware of the constancy of their role modelling, whether it is explicit or implicit. Further to this, intentionality of role modelling by preceptors is fundamental to the success of strategically using role modelling.

Reflection. Preceptors, faculty, and students should be made aware of the relationship between role modelling, experiential learning, and reflection. Though the experiential learning

cycle in use at McMaster University (see Chapter 1, Figure 1) currently recognizes reflection as the third step in the experiential learning cycle, it is suggested that critical self-reflection on the part of the student be emphasized as the *pivotal* step. As may be occurring with students represented by the Factor 1 viewpoint, a lack of self-reflection may impede the successful completion of the stages of the experiential learning cycle. In turn, this may lead students to focus on what is explicitly modelled, while under-valuing learning opportunities that are role modelled implicitly. Therefore, preceptors or faculty members' encouragement of self-reflection may facilitate students' progress in using the experiential learning cycle to create transformative change. Understanding the significant part that self-reflection plays in experiential learning lends itself to intentional use of role modelling as an experiential teaching-learning strategy.

Re-conceptualizing Negative Role Modelling. It is necessary that negative role modelling be re-conceptualized as a possible component of all types of role models' behaviours. The findings of this study draw attention to the typology of role models offered by Bucher and Stelling (1977). As such, the findings should encourage students, preceptors, and faculty to approach an instance of negative role modelling as an inevitable occurrence in any role model's performance (after all, to err is human), rather than calling it a "type" of role modelling.

From the perspective of nursing educational administration, those responsible for decision-making about the inclusion of concepts within an undergraduate program's curriculum should ensure that experiential learning occurs early in the explicit curriculum. This is so that students can apply the fundamentals of experiential learning to their unique experiences, especially when they begin working with clinical teachers, who may or may not be preceptors. Focusing on role modelling as a teaching-learning strategy should be encouraged to assist faculty in enacting their own role modelling with students, and in providing students with teaching-learning information about role modelling. This should occur whether the faculty are

teaching in academic or professional practice courses. Leadership at the senior level of B.Sc.N. education should ensure that RNs acting as preceptors in clinical courses receive sufficient education about stage role modelling by preceptors, and that students learn how to gain the most from role modelling experiences.

Clinical Practice. Clinically, the results of this study are not only relevant to preceptors, but also to direct care RNs. All RNs working clinically in areas where B.Sc.N. students have placements are role models for nursing students (CNO, 2009b). RNs also may function as stage role models with novice nurses during defined new graduate programs or in RN orientation to new positions, although in the latter situation, the type of role model would likely be partial or optional. Finally, some direct care RNs provide important clinical leadership by role modelling exemplary nursing care for their peers. In this way, RNs providing exemplary care help to develop and maintain high quality care and continuous quality improvement.

Future Research. The literature review for this thesis confirmed the dearth of rigorous research in this area. Not only is our understanding about role modelling limited, but the studies that do exist are typically descriptive, and few include substantial analytic components. Only one study was identified in the health sciences educational research that studied the impact, effectiveness, or causal associations of role modelling and learner outcomes (Boerbach, Lombarts, Scherpbier, & Arah, 2013). Although not a randomized trial, Boerbach et al.'s (2013) study applied statistical models to estimate plausible associations between teaching performance and role modelling. Given the extent to which the health sciences rely on role modelling to teach future practitioners in 'real life; and 'real time', research priorities should include conducting further research to expand our understanding of role modelling within clinical courses, and testing the impact or effectiveness of role modelling teaching-learning strategies.

Replication of this study is recommended, first, to examine the degree of congruence

between the opinions of students obtained indirectly from faculty and those obtained directly from students. Second, replication is recommended to better understand the similarities and differences in triad (preceptors, faculty members, and students) viewpoints about role modelling. In a cross-sectional study involving these three groups, the by-person factor analysis for each group could be examined, and then the resulting viewpoints of the three groups could be compared. Further to this, focus groups, including all three triad members, could be conducted to interpret the specific points of view of the preceptorship triad as an entity. Analysis and recommendations from the focus groups might illuminate triad viewpoints that would strengthen the function of the preceptorship model in supporting student learning.

Study Strengths and Limitations

Methodological Strengths. In employing Q-methodology, a comprehensive literature review and Q-statements written by senior students during concourse contributed to the content and face validity of the Q-sample. Additionally, procedures supported important methodological decisions, such as the selection of faculty members as the p-set, extraction and refining of the Q-statements, adaptation of the MERSQI for quantitative and qualitative critical appraisal, and interpretation of the results.

The study had sufficient statistical power to yield four distinct, statistically robust, factors. Clear relationships were found among the distinguishing statements for each factor, making interpretation straightforward and allowing each factor to be readily labelled.

Interpretation of the factors was aided by the participants' verbatim illustrative comments about the Q-statements ranked at the positive and negative extremes of the subjectivity scale. This methodological strategy permitted a level of interpretation of the findings that would not otherwise have been possible.

Conceptual Strengths. The literature review revealed thematic role modelling

categories that were used to balance the classification of, and number of, Q-statements. The *Conceptual Framework of Preceptors as Stage Role Models* was developed. This framework, along with elements of SLT (Bandura, 1977), and the process of role modelling (Crues et al., 2008) provided support for the findings, in turn highlighting key concepts, establishing relationships, and adding depth to resulting concepts, such as intentionality and negative role modelling.

Limitations. The representativeness of this relatively small sample is lessened because the study was conducted at a single site, and as with many cross-sectional surveys, the sample was non-random and consisted of volunteers.

Due to initial low recruitment of senior students as subjects, faculty members who taught in the preceptored courses were selected as the target population. Thus, the faculty participants provided indirect student viewpoints about role modelling by preceptors. Knowing that this would be a limitation, a number of steps were taken to decrease the extent to which this would bias the results. First, the interview schedule was structured to reinforce the subjects' intended perspective (conveying students' viewpoints), and each Q-statement was prefaced to remind the faculty participants that the statements were to be sorted from the students' perspective (see Chapter 3, Data Collection Procedures, p. 83). Second, as previously stated, subjects were encouraged to identify any specific Q-statements where their own ranking as faculty members would be substantially different from the perspective of students.

While the extent to which the faculty viewpoints accurately reflected those of the students could be viewed as a limitation, faculty members were chosen as a theoretically relevant p-set due to their wealth of experience teaching numerous Level IV students in professional practice courses. Additionally, as previously reported, there was some evidence supporting the argument that the respondents were able to sort the Q-sample from the

perspective of students.

In only one case was the wording of a Q-statement reported to be unclear. One participant was confused by the following statement: “Students can tell when preceptors don’t really want to work with learners. Students find it hard to learn and become more confident when they feel that they are seen as being a burden”. The participant initially interpreted this statement as implying that students become more confident when they feel that preceptors view them as burdensome. The participant asked for clarification, which was given by the researcher. In any future research employing these Q-statements, re-wording of this statement is suggested as follows: “Students can tell when preceptors don’t really want to work with learners. Students find it hard to learn, and to become more confident, when they feel that they are seen as being a burden to preceptors”.

A number of participants experienced tension about placing the Q-statements on the Q-grid (see Chapter 3, Figure 8), stating that there were no statements in the Q-sample which they would assign to a ‘Strongly Disagree’ position. As a possible alternative, it is suggested that the anchors on the Q-grid might be denoted by ‘Most Agree’ and ‘Most Disagree’, although all study participants were able to complete the Q-sort as directed.

The generalizeability of the study results is somewhat limited. McMaster University has a long history of undergraduate baccalaureate nursing education that emphasizes self-directed learning and problem-based learning, and the Program relies less on didactic teaching methods than many other baccalaureate programs in the westernized world. Students in the undergraduate Program at McMaster University may be more assertive about their learning than students in other university schools of nursing, such as those employing largely didactic approaches to teaching-learning.

The comparatively small p-set increases the likelihood that some viewpoints (expressed

as factors) about role modelling may have been missed. The inclusion of statements generated by Level IV students in the concourse stage, and the fact that each participant was asked if any key areas about role modelling were missing in the Q-sample (for which none were identified) minimizes this possibility. Nevertheless, it is possible that aspects of preceptor role modelling that would be important from the students' perspective might have been missed in the Q-sample, resulting in reduced representativeness of the study results.

The extent to which participants' viewpoints remain stable or change over time cannot be determined. However, Q-methodology seeks to capture only the most prominent viewpoints, or in other words, opinions that are likely to be long-lasting (Lobo et al., 2012). Furthermore, it is important to acknowledge that even with secular changes that may occur over time, the study describes the environment in which the opinions were identified and the relevance of the opinions to improving educational strategies at present.

Plans for Dissemination

Participants were notified at the time of their participation that, after the successful completion of the thesis defense, a brief study report would be posted on the McMaster University, School of Nursing website. An email including the brief report will be distributed to faculty at the McMaster site of the B.Sc.N. Program, and the two college sites also delivering the same curriculum (Mohawk College, Conestoga College). Faculty will be directed to McMaster University's Preceptorship Program to learn more about the results. This brief report also will be disseminated to health agency partners associated with the School of Nursing, using a distribution list from the B.Sc.N. Preceptorship Program. A short report also will be posted on Avenue to Learn for senior students beginning their first preceptored course.

To ensure that the findings of this study are distributed to preceptors, key findings of this thesis will be introduced into applicable B.Sc.N. Preceptorship Program workshops. These

workshops target preceptors and provide a forum both for presentation, discussion, and practice. Finally, the findings will be included in the *B.Sc.N. Preceptorship Handbook*, which is revised and updated annually. The contents of this Handbook reach all members of the preceptorship triad.

The findings of this study will be presented to broader audiences using a variety of formats. A number of articles will be written and submitted for peer-reviewed publication regarding: a) the study findings, b) development and application of the conceptualization of preceptors as stage role models, and c) the guidelines for selecting and writing Q-statements.

Additionally, the study results will be disseminated at seminars internal to McMaster University School of Nursing, for example, a *School of Nursing Research Seminar*, which provides an opportunity to discuss methodological topics inherent to research projects, and the *Nursing Education Research Unit* [NERU] presentations.

The researcher also plans to submit the findings to national or international educational and/or scientific conferences, for example, the *International Society of Scholarship of Teaching and Learning Conference* [ISSOTL], or the *International Society for the Scientific Study of Subjectivity Conference*.

Conclusion

In conclusion, role modelling can be a powerful teaching-learning strategy, especially within an experiential learning approach, such as preceptorship. Although pervasive, at present, role modelling often is not employed as a well-defined, comprehensive, or intentional teaching-learning strategy.

This study revealed four distinct student viewpoints about preceptor role modelling, as expressed by faculty members: the importance of explicit teaching (Factor 1: Explicit Teaching Enthusiasts), the significance of socialization behaviours (Factor 2: Socialization Supporters),

the foundations of practice knowledge and skills (Factor 3: Champions of Clinical Competence), and the pivotal role of preceptor authenticity (Factor 4: Advocates for Authenticity). A specific conceptualization of preceptors as stage role models was developed, providing a unique perspective that includes role modelling typology and a re-examination of a negativity-positivity role modelling spectrum. The study also highlighted the importance of employing role modelling as an intentional teaching-learning strategy, including awareness of role model status, use of critical reflection, and being explicit about what is being role modelled. It is hoped that integration of these findings into the preceptorship triad (preceptor, faculty, student) will contribute to more comprehensive views of role modelling, and enhance the use of role modelling as an experiential learning strategy in professional practice courses.

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Appendix A: Definition of Key Terms

Autonomy: “the ability to deliberate about a decision and to act based on that deliberation” (CIHR, NSERC, SSHRC, 2010, p. 8).

By-person Factor Analysis: the method of data analysis unique to Q-methodology, through which factors accounting for the most variance in the data set are identified.

Consensus statement: a Q-statement that is mutually agreed/disagreed upon, or felt neutrally about, by all the identified factors in Q-methodology.

Concourse: the first stage of Q-methodology data collection, in which the researcher collects all potential opinions, attitudes, and/or perspectives about the topic area of interest (Akhtar-Danesh, Baumann, & Cordingley, 2008).

Confidentiality: “the obligation of an individual or organization to safeguard entrusted information” (CIHR, NSERC, SSHRC, 2010, p. 56).

Cross-sectional survey: “the observation of a defined population at a single point in time or during a specific time interval” (DiCenso, Guyatt, & Ciliska, 2005, p.553).

Difference score: the difference between a Q-statement’s score on any two factors.

Distinguishing statement: a Q-statement with a statistically significant ($p < 0.05$) difference score on one factor when compared to all other identified factors.

Experiential knowledge: knowledge gained through direct encounters with people, objects, or content (Burnard, 1987).

Experiential learning: an educational approach where knowledge is gained through experience, active observation, and reflection. Preceptorship is an experiential learning approach where students learn through ‘real life’, ‘real time’ clinical experience, thereby differing from simulated or lab-based settings.

Faculty: in this study, faculty refers to a faculty member (full-time, part-time, or clinical) assigned to a student in a Level IV professional practice course.

Factor: the factors extracted using by-person factor analysis represent groups of participants who shared similar opinions, attitudes, or perspectives about the topic of interest at the time of completion of the Q-sort

Intentionality: approaching role modelling as an active, explicit clinical teaching-learning strategy

Justice: a core ethical principle through which a researcher has an “obligation to treat people fairly and equitably” (CIHR, NSERC, SSHRC, 2010, p. 10).

Minimal risk: “research in which the probability and magnitude of possible harms implied by participation in the research is no greater than those encountered by participants in those aspects of their everyday life that relate to the research” (CIHR, NSERC, SSHRC, 2010, p. 23).

Model/ Framework: depicts a set of ideas about individuals, groups, events, etc. (Dudley-Brown, 1997).

P-set: a particular group of people who are theoretically saturated, and are apt to provide factors.

Practical knowledge: “...knowledge that is developed through the acquisition of skills, often, though not necessarily, of a psychomotor type” (Burnard, 1987, p. 190).

Preceptor: a skilled and professional direct care RN who acts as a clinical teacher and professional role model for senior undergraduate nursing students.

Preceptorship: a largely experiential approach to education in professional practice (clinical) courses, in which a reciprocal teaching-learning relationship is established among a senior undergraduate nursing student, an RN (known as a preceptor) with whom the learner is partnered, and a faculty member (Bott, Mohide, & Lawlor, 2011).

Propositional knowledge: knowledge acquired through textbooks, theories, or models (Burnard, 1987).

Professional practice course: often called clinical courses, some undergraduate nursing programs have adopted the term ‘professional practice course’ in an effort to explicitly raise awareness of the professional nature of this type of learning. Much of the literature cited in this thesis used terms like clinical or practical learning.

Professional socialization: “the process of internalizing and developing a professional identity through the acquisition of knowledge, skills, attitudes, beliefs, values, norms, and ethical standards in order to fulfill a professional role” (Dinmohammadi, Peyrovi, and Mehrdad, 2013, p.27). Common examples in nursing are learning the cultural organization of a nursing unit’s rotation (break times, language, etc).

Q-sample: a set of statements about a topic or content area that the p-set are asked to rank-order.

Q-sort: the act of sorting the Q-sample to explore opinions, viewpoints, or attitudes of a p-set at one particular point in time.

Q-methodology: a methodology used to extract subjective opinions about a research topic of interest.

Role Model: An individual (preceptor), observed by another (nursing student), who may engage in both positive and negative professional, clinical, or personal behaviours that the student is free to imitate, modify, or reject based on emerging personal values or professional/educational goals.

Role Modelling: an experiential teaching-learning strategy whereby an individual (role model) is knowingly and unknowingly observed, and sometimes emulated, by a learner. When applied to professional practice (clinical) teaching, positive and negative behaviours related to teaching-learning, socialization, professional practice knowledge and skills, personal characteristics, and professionalism are modelled. Role modelling is best approached intentionally, so that the role model and the learner are able to engage in dialogue, including reflection, together. Role modelling results in behaviour change on the part of the learner, including skill development and professional socialization.

Role Model Consciousness: being aware of one’s status as a role model

Student: level IV nursing students enrolled in the McMaster Mohawk Conestoga B.Sc.N. Program.

Theory: an organized, coherent, and systematic articulation of a set of statements that are communicated in a meaningful whole to describe or explain phenomena (Im & Meleis, 1999).

Appendix B: McEwen's (2007) Synthesized Model for Theory Evaluation

Theory Description

- What is the historical context of the theory?
- What are the structural components of the theory (does it include assumptions, concepts, and propositions)?
- What are the functional components of the theory (does it describe, explain, predict, or control)?

Theory Analysis

- Examine the content, structure, and function and assess potential for use in practice, research, administration, and education.

Theory Critique

- Upon critical reflection, does this theory serve its purpose? Is it applicable to the content area of interest? Can the theory be used to direct nursing practice or interpret favourable outcomes?

Adapted from McEwen, M. (2007)

Appendix C: Description of Selected Social Learning Theory Literature

Authors and Publication Date	Study Objective	Study Design	Types of Subjects and Setting	No. of Subjects	Data Collection Techniques	Data Analysis and Results	Strengths and Limitations
Abbey, L., Willett, R., Selby-Penczak, R., & Mcknight, R. (2010)	To explore the perceptions and attitudes of medical students during their first introduction to house calls	Qualitative inquiry	2 nd year medical students Setting: Victoria Commonwealth School of Medicine, Richmond Virginia	n=123 students	Pre and post surveys developed based on Bandura’s Social Learning Theory. Prior to house call experience, students completed in writing pre survey questions about attitudes pertaining to geriatrics and house calls. After the experience, post survey written questions completed	Coding of themes, triangulation through multiple analysts, confirmed and audited for credibility. Themes identified by the students: 1) comfort, compassion, and commitment, 2) quality of care, 3) physician challenges, 4) student intentions. Social Learning Theory was important to understanding student learning because physician preceptors were important role models for positive attitudes during the house call.	+ Brief discussion of how Social Learning Theory can be applied to the experience of a medical student’s first house call experience + A model was created to depict the student’s experience, including the themes - Pre-survey not described in detail; post-survey open-ended questions outlined but not assessed for reliability or comprehensiveness - Large sample for a qualitative study, but purposeful sampling not used

Appendix D: Application of CASP to Jochemsen-van-der Leeuw et al. (2013)

Screening Questions

-
1. **Did the review ask a clearly focused question?** *Consider if the question is “focused” in terms of: i) population studied; ii) the intervention given or exposure; iii) the outcomes considered*
 - Clear purpose stated: to systematically review the literature to identify the attributes characterizing clinical trainers as positive and negative role models for trainees.
 - Population: Interns and residents (trainees), and clinical trainers (any physician who supervises the trainee in clinical practice) – review does not stipulate perspective of studies included (trainees, trainers, or both)
 - Intervention: none (research question does not lend itself to an interventional approach)
 - Outcomes: identification of attributes characterizing clinical trainers as either negative or positive role models for trainees
 2. **Did the review include the right type of study?** *Consider if the included studies: i) address the reviewer’s question; ii) have an appropriate study design*
 - Both qualitative and quantitative original studies included
 - All addressed the reviewer’s original question – described attributes of clinical trainers in graduate medical education
 - Hospital and primary care focused studies included
 - Non-original studies excluded
 - Studies focused on medical students (not post medical school graduation) excluded
 - Studies about the role of the clinical trainer as teacher or mentor excluded
- ➔ **Is it worth continuing?**
- This review has a focused question and an in-depth literature search to support the researcher’s conclusions
 - Unfortunately, it is unclear if the purpose of the review is to identify attributes characterizing positive and negative role model attributes from the perspective of the trainee or learner
 - It is, however, likely that this review will yield credible evidence
 - It is likely that the review will serve to support other sources (single studies) that have been included in the author’s literature review

Detailed Questions

-
3. **Did the reviewers try to identify all relevant studies?** *Consider: i) which bibliographic databases were used; ii) if there was follow-up from reference lists; iii) if there was personal contact with experts; iv) if the reviewers searched for unpublished studies; v) if the reviewers searched for non-English-language studies*
 - Search strategy developed by clinical librarian
 - Databases: MEDLINE, EMBASE, ERIC, PsycINFO
 - Articles published in any language included
 - Manual search of references of retrieved articles completed
 - Four specific journals hand searched (*Academic Medicine, Journal of Postgraduate Medicine, Medical Education, Medical Teacher*)
 - Reviewed reference lists of papers presented at Netherlands Association for Medical Education meeting (attended by national experts)
 - No explicit discussion of search for unpublished studies
 4. **Did the reviewers assess the quality of the included studies?** *Consider: i) if a clear, pre-determined strategy was used to determine which studies were included. Look for: a scoring system and/or more than one assessor*
 - **Selection process for inclusion of studies:** completed by two assessors (authors of study); both independently reviewed titles and abstracts of initial search results and eliminated articles after screening against their inclusion criteria. After initial screening was completed and consensus reached, full text of remaining studies retrieved and reviewed. Read independently and assessed for applicability using a pilot-tested form. 17 articles selected.
 - **Quality assessment and data extraction:** 2 assessors used the Medical Education Research Study Quality Instrument (MERSQI) to independently assess methodological quality of each of the 17 studies selected for inclusion.
 - MERSQI is validated and reliable scoring tool designed for experimental, quasi-experimental, or observational (intervention) studies
 - Authors adapted MERSQI for use with qualitative studies (adaptations not explicated in review)

- Mean MERSQI score of included quantitative studies was 9.7 (max possible score 18)
 - Mean MERSQI score of included qualitative studies was 8.1 (max possible score 15)
5. **If the results of the studies have been combined, was it reasonable to do so?** *Consider whether: i) the results of each study are clearly displayed; ii) the results were similar from study to study; iii) the reasons for any variations in results are discussed*
 - No meta-analysis could be performed because the included studies used different methods, techniques, and wording. Qualitative and quantitative studies included.
 - Results were combined, however, as similar role model attributes were found from study to study
 - In fact, attributes of positive and negative role models identified in all studies could be classified into 3 main categories: patient care qualities, teaching qualities, and personal qualities.
 6. **How the results presented and what is the main result?** *Consider: i) how the results are expressed (e.g. odds ratio, relative risk etc.); ii) how large this size of result is and how meaningful it is; iii) how you would sum up the bottom-line result of the review in one sentence*
 - The results are presented in tabular form. Table 1 describes each of the included studies and gives their MERSQI score; however, there is no breakdown of actual scoring of each article so that readers do not know where each article was methodologically flawed. Particularly important as studies were generally rated poor to moderate.
 - Table 2 summarizes the results of each study, identifying conclusions re: most important attributes of positive role models, least important attributes of positive role models, and attributes of negative role models.
 - Table 1 and 2 clear, readable, original sources presented
 - Allows reader to compare study results manually
 - OR, RR, etc. not applicable to purpose of study
 7. **How precise are the results?** *Consider: i) if a confidence interval were reported. Would your decision about whether or not to use this intervention be that same at the upper confidence limit as at the lower confidence limit?; ii) if a p-value is reported where confidence intervals are unavailable*
 - P-value, confidence interval not reported – inappropriate for the study purpose (cross-sectional surveys or qualitative studies most appropriate methodological choice to answer this question).
 8. **Can the results be applied to the local population?** *Consider whether: i) the population sample covered by the review could be different from your population in ways that would produce different results; ii) your local setting differs much from that of the review; iii) you can provide the same intervention in your setting*
 - The included studies were conducted in a wide range of countries and specialties of medicine
 - Clinical trainer role differs from that of a preceptor; not a one-to-one partnership for concentrated period of time
 - Not generalizable to nursing education, differences in clinical teaching approach in terms of structure and function)
 9. **Were all important outcomes considered?** *Consider outcomes from the point of view of the: i) individual; ii) policy makers and professionals; iii) family/carers; iv) wider community*
 - Authors recommend incorporated attributes identified in review into a tool to help trainees evaluate whether to imitate a role model's behaviour as well as for studying the effect of training courses re: role modelling (improvement of clinical trainers)
 - Identify that said tool would need to be validated prior to use
 - No exploration of potential negative or harmful consequences of this suggestion (low-risk)
 - Practicality of widespread dissemination of tool not discussed
 10. **Should policy or practice change as a result of the evidence contained in this review?** *Consider: whether any benefit reported outweighs any harm and/or cost. If this information is not reported can it be filled in from elsewhere?*
 - Quality of search strategy and critical appraisal enhance the validity of these conclusions
 - It would be acceptable if policy or practice change occurred as a result of the evidence in this review, however, it is unlikely because the evidence contained in this review essentially are extensive lists of attributes describing positive and negative role models and there is limited discussion of strategies for harnessing role modelling as a teaching-learning strategy.
 - Strategies suggested include cursory discussion of developing a training course or instrument to assess role modelling – lack of detail

Adapted from Critical Appraisal Skills Programme [CASP] (n.d.)

Appendix E: Medical Education Research Study Quality Instrument [MERSQI]

Domain	MERSQI Item	Score	
		Item	Maximum Domain
Study design	1. Study design		3
	Single group cross-sectional or single group posttest only	1	
	Single group pretest and posttest	1.5	
	Nonrandomized, 2 group	2	
	Randomized controlled trial	3	
Sampling	2. No. of institutions studied		3
	1	0.5	
	2	1	
	>2	1.5	
	3. Response rate, %		
	Not applicable		
	<50 or not reported	0.5	
	50-74	1	
	≥75	1.5	
	Type of data	4. Type of data	
Assessment by study participant		1	
Objective measurement		3	
Validity of evaluation instrument ^c	5. Internal structure		3
	Not applicable		
	Not reported	0	
	Reported	1	
	6. Content		
	Not applicable		
	Not reported	0	
	Reported	1	
	7. Relationships to other variables		
	Not applicable		
	Not reported	0	
	Reported	1	
	Data analysis	8. Appropriateness of analysis	
Data analysis inappropriate for study design or type of data		0	
Data analysis appropriate for study design and type of data		1	
9. Complexity of analysis			
Beyond descriptive analysis		2	
Outcomes	10. Outcomes		3
	Satisfaction, attitudes, perceptions, opinions, general facts	1	
	Knowledge, skills	1.5	
	Behaviors	2	
	Patient/health care outcome	3	
Total Score			18

Adapted from Reed et al. (2007)

Appendix F: Critical Appraisal of Empirical Role Modelling Literature with MERSQI Scores

Characteristics of the Studies Included in Review of Available Empirical Literature about Role Modelling by Nurse Preceptors in Undergraduate Nursing Education								
Authors and Publication Date	Study Objective(s)	Study Design	Types of Subjects & Setting	No. of Subjects	Data Collection Techniques	Data Analysis & Results	Strengths & Limitations	MERSQI Score
Qualitative Role Modelling Literature Ordered Chronologically (n=7)								Max Score 15
Illingworth, P. (2009)	To further develop understanding of the concept of role models	Phenomenology	3 rd year undergraduate nursing students studying mental health Setting: North of England	n = 10	Focus group	Data analysis of emerging themes through coding and categorization 5 themes: enabling attitude, respect towards others, sharing practitioner, functional role, humanism	+ Discussed bracketing as a strategy used to control bias - Does not specify interpretive or descriptive nature of phenomenology - Theoretical sampling not used - Coding done twice but by the same person - No elaboration on themes	7
Conway, A., Lewis, S., & Robinson, J. (2008)	To determine role model formation and interaction, investigate ideal and actual role model attributes, ascertain if differences exist in respect to role model selection from private vs. public health care settings	Qualitative inquiry	3 rd year diagnostic radiography students Setting: University of Sydney, Australia	n=13	Semi-structured interviews about the ideal traits of role models, student perception of role models in clinical placements, and the future direction of role modelling in radiography	8 concepts: approachability, communication, knowledge, care for patients, negative work ethic, student focused, shared experiences, impression of clinical setting	+ Presents a conceptual model (pyramid) depicting role model relationship between student and radiographer + Questions added to interview as concepts emerged - Does not apply grounded theory design except for in decision-making about questions asked in interviews - No theory presented at conclusion - May not be generalize able to other health care professions	8
Wyber, R., & Egan, T. (2007)	To establish the nature of role modelling experiences for house officers in New Zealand (NZ)	Qualitative inquiry	General practitioners who were educated in NZ at least 10 years ago, and current house officers learning in NZ Setting: NZ	n=12 GPs n=13 house officers	Semi-structured interviews	Multiple readings of transcripts to identify themes, coding and analysis discussed among authors 3 relationships used to identify role models: perspective of students, patients, and medical profession	+ Includes illustrative excerpts from participants - Retrospective (no discussion about curricular or secular changes over past 10 years) - No description of coding process - May not be generalizeable to NA	8

Authors and Publication Date	Study Objective(s)	Study Design	Types of Subjects & Setting	No. of Subjects	Data Collection Techniques	Data Analysis & Results	Strengths & Limitations	MERSQI Score
Qualitative Role Modelling Literature Ordered Chronologically (n=7)								Max Score 15
Donaldson, J.H., & Carter, D. (2005)	To investigate the preparation of adult diploma and baccalaureate nursing students	Secondary analysis of grounded theory	Baccalaureate and diploma nursing students from two institutions in Scotland Setting: Scotland	n=42 [bacc. students (n=20), diploma nursing students (n=22)]	Individual interviews, focus groups	Constant comparative analysis, theoretical coding and analysis Students in this study sought out role models who would allow them to observe and practice modelled skills and/or behaviour, and who provided feedback	+ Included some grounded theory hallmarks ,such as theoretical sampling and constant comparative method + Purposeful sampling + Results grounded theoretically in SLT - No relation of the original grounded theory developed in dissertation to role modelling - Role model is not defined	10.5
Wright, S.M., & Carrese, J.A. (2002)	To better understand role modelling using insights from physician role models	Qualitative inquiry	Physicians, identified as exemplary role models Settings: Johns Hopkins Hospital, Bayview Medical Center, Baltimore, USA	n=29	Semi structured interviews, taped and transcribed verbatim	Editing analysis style – transcripts coded, categories identified, conceptual model developed Domains of effective role models identified: personal qualities, teaching skills, role modelling, clinical attributes, barriers to RM, RM consciousness, value of multiple role models	+ Included interview guide + Conceptual model developed for RM + Member checking of conceptual model with ~50% of the participants + Detailed description of sample - No description or rationale of qualitative methodology - Student perspective not examined	11
Paukert, J.L., & Hsieh, G. (2001)	To examine how interns perceived their learning experiences and the influence of role models to that learning experience	Qualitative inquiry (authors do not explicitly state this is a grounded theory, but mention that analysis is consistent with grounded theory method)	Residents, reflecting on their internship Setting: McGill University, Montreal, CA	n=10	Critical incident interviews	Transcribed interviews coded for factors related to resident learning Participants felt poor role modelling occurred when faculty was not supportive or when too much responsibility/autonomy was given. Positive role models were supportive and directive	- Retrospective - Unclear sampling description - No theory presented as a result of study findings	7.5

Authors and Publication Date	Study Objective(s)	Study Design	Types of Subjects & Setting	No. of Subjects	Data Collection Techniques	Data Analysis & Results	Strengths & Limitations	MERSQI Score
Qualitative Role Modelling Literature Ordered Chronologically (n=7)								Max Score 15
Davies, E. (1993)	To explore how observation of clinical role models helps students to uncover more tacit aspects of nursing (knowledge embedded in clinical practice)	Grounded theory (Glaser and Strauss)	1 st year diploma nursing students Setting: Australia	n=6	Unstructured interviews conducted after 3 separate 1-week blocks of clinical experience in the first year	Thematic analysis using coding, memoing, and drawing 6 tacit knowledge areas where role modelling was influential: holistic care, dependence, interactions with students, benefits, conflicting needs, client's choices	<ul style="list-style-type: none"> + Purposeful sampling described + Rationale given for grounded theory design + Comprehensive analysis of themes - Detailed overview of methodology not provided - Did not utilize theoretical sampling or constant comparative analysis, both hallmarks of grounded theory - Outlined themes, rather than theory, at conclusion - Interview data based on one week of each clinical placement 	11
Quantitative Role Modelling Literature Ordered Chronologically (n=8)								Max Score 18
Agarwal, R., Sonnad, S.S., Beery, J., & Lewin, J. (2010)	To determine residents' attitudes about characteristics, and influence of, role models in academic radiology	Cross-sectional survey	Siemens AUR Radiology Resident Academic Development (SARRAD) and non SARRAD academic radiology residents Settings: Radiology residency training programs, USA	n=30 SARRAD residents, 103 non-SARRAD residents	Emails sent to SARRAD participants (35) with link to survey as well as requesting that SARRAD participants forward the survey to all of the residents in their respective university programs	Chi-square testing to determine statistically significant differences between groups Mann-Whitney tests to detect differences in responses to Likert-scale questions The most desired characteristics of role models: availability, enthusiasm, integrity, positive attitude. Only 56% of residents felt that there were sufficient role models in academic radiology. More than 67% of the residents felt they would stay in academic radiology, if there were more role models.	<ul style="list-style-type: none"> + Defined role model in survey + Appropriate statistical tests described - No discussion of development of tool, or decision-making process of questions and content to be included in survey - No reliability or validity testing of the questionnaire discussed - Possibility of self-reporting bias, volunteer bias 	10

Authors and Publication Date	Study Objective(s)	Study Design	Types of Subjects & Setting	No. of Subjects	Data Collection Techniques	Data Analysis & Results	Strengths & Limitations	MERSQI Score
Quantitative Role Modelling Literature Ordered Chronologically (n=8)								Max Score 18
Yazigi, A., Nasr, M., Sleilaty, G., & Nemr, E. (2006)	To identify the characteristics and learning impact of role models as perceived by interns and residents in Lebanon	Cross-sectional survey	Interns and residents (n=100) Setting: Medical Faculty of Saint-Joseph University, Lebanon	n=90 surveys returned, 90% response rate	Sent to entire cohort of interns and residents	Frequencies of positive and negative role modelling characteristics, Chi-square test identified frequency of characteristics among groups of responders, Jonckheere-Terpstra test to identify differences in ranking role model characteristics between interns, residents Mann-Whitney test to identify differences in ranking role model characteristics between specialties 97% of responders had contact with positive role models, 96% with negative role models. Characteristics identified most frequently and ranked most highly by trainees were related to acquisition of clinical skills in positive role models and to inadequate collaborative efforts in negative role models	+ Defined role model in questionnaire (as well as negative role model) ,did not just assume that the absence of positive role modelling equaled negative role modelling + Thorough description of questionnaire content + Appropriate statistical tests used - Possibility of volunteer and self-report bias - Little information about validity and reliability of CanMEDS included - Needed to provide more information about how role modelling items were systematically chosen from the literature	8
Maker, V.K., Curtis, K.D., & Donnelly, M.B. (2004)	To define characteristics or criteria of a surgical role model from the perspective of surgical residents	Cross-sectional survey	4 th and 5 th year surgical residents Setting: Department of Surgery, University of Illinois, Chicago USA	n=847 surveys analyzed	Residents defined 9 criteria that made a surgical role model. Residents then ranked each attending (n=49) according to those 9 criteria on a 3- point scale. An extra question about professionalism and mutual respect was added	Pearson correlation and stepwise multiple regression to determine relationship between 9 criteria and being seen as a role model 9 criteria correlated positively with being a role model (p<0.01). The 4 criteria that correlated best with role model were stimulates critical thinking with use of literature, demonstrates skills and decision making in the OR with confidence, provides feedback, and allows autonomy for students to make decisions	+ Did provide an operational definition of surgical role model at conclusion of study + Appropriate statistical tests described + Suggests that faculty be evaluated in this context - Unclear where professionalism and mutual were added to the 9 characteristics - Unclear process through which 9 criteria decided - Survey could be interpreted as an evaluative measure of students, introducing bias	7.5

Authors and Publication Date	Study Objective(s)	Study Design	Types of Subjects & Setting	No. of Subjects	Data Collection Techniques	Data Analysis & Results	Strengths & Limitations	MERSQI Score
Quantitative Role Modelling Literature Ordered Chronologically (n=8)								Max Score 18
Lewis, S.J., & Robinson, J.W. (2003)	To identify the attributes of a generic role model in medical radiations sciences, to determine if the medical radiation workplace provided suitable role models, and to identify personal role model traits perceived by medical radiation practitioners	Cross-sectional survey	Diagnostic radiographers, radiation therapists Setting: Setting: University of Sydney, Australia	n=66 (43 rad., 23 therapists)	25-item structured interview tool - 'Rings of Certainty' (a concentric image outlining various attributes of role models rated by participants)	Descriptive statistics used to determine workplace suitability for role modelling and to identify personal role model traits perceived by both groups Diagnostic radiography sample indicated their best role modelling traits were in patient care and advanced imaging skills, but radiation therapists nominated patient care skills Interpretive analysis (Chi-square) compared difference between the scoring of both groups. P >0.05 for each analysis. A definition of a generic role model for diagnostic radiography and radiation therapy was established	+ Addressed difficulty of defining role model and provided definition to be used in this study - Unique measurement instrument, provided support of its use - Limited field of practice therefore may not be applicable to most health science disciplines - Did not incorporate any student or mentee perspective to confirm or deny the picture of the generic role model	9.5
Elzubeir, M.A., & Rizk, D.E.E. (2001)	To identify characteristics which students, interns, and residents look for in their role models	Cross-sectional survey	Medical students Group 1: 3 rd -6 th year students, Group 2: interns Group 3: residents Setting: United Arab Emirates	n=96 possible 120 Group 1=66 Group 2= 17 Group 3 = 13	Respondents completed a 45-item questionnaire containing characteristics in categories decided based on literature, personality, clinical, research, teaching skills, and community service. Participants could add up to five other characteristics that described physician role models.	2-tailed t-test compared between groups of students. Content analysis for qualitative portion (description of role models) analyzed and categorized into themes Personality, teaching, and clinical skills ranked as the top 3 factors. Research skills and community service ranked least important. 21 characteristics were revealed through the qualitative analysis and clustered into 3 themes: role model as teacher, as physician, and as person.	+ Description of questionnaire development (characteristics of excellent role models identified through literature) + Questionnaire reviewed for ESL clarity + Definition of role model used in questionnaire given + 80% response rate - No description of reliability or validity testing of instrument - Small sample - Not generalizable to Western countries	10

Authors and Publication Date	Study Objective(s)	Study Design	Types of Subjects & Setting	No. of Subjects	Data Collection Techniques	Data Analysis & Results	Strengths & Limitations	MERSQI Score
Quantitative Role Modelling Literature Ordered Chronologically (n=8)								Max Score 18
Wright, S. M., Kern, D. E., Kolodner, K., Howard, D. M., & Brancati, F. L. (1998)	To identify attributes that distinguish physicians as role models	Case-control	Physicians reflecting on their own role modelling behaviours with students Setting: 2 hospitals in Montreal and 2 in Baltimore, USA	n=341 completed questionnaire while unaware of case-control status n= 165 cases (identified by staff members as excellent role model) n=276 controls (physicians who taught residents but who were not named as role models)	55-item questionnaire	Chi square, t-tests, odds ratio determined with 95% confidence interval 5 attributes were independently associated with being named as an excellent role model: spending more than 25 percent of one's time teaching, spending 25 or more hours per week teaching and conducting rounds when serving as an attending physician, stressing the importance of the doctor-patient relationship in one's teaching, teaching the psychosocial aspects of medicine, and having served as a chief resident.	+ Multivariate analysis + 83% response rate + Blinding of participants to their case or control status - Convoluted sampling strategies and assignment of case/control status - Unconventional study design for a widespread outcome - Retrospective, unreliability possible due to memory lapse - No discussion as to how 55-item questionnaire developed (but construct validity of tool discussed) - Self-report	12
Wiseman, R. F. (1994)	To identify role modelling behaviours of clinical nursing faculty that undergraduate students consider important	Phase 1: Instrument Development Phase 2: Cross-sectional survey	Nursing students Setting: Mid-Atlantic USA School of Nursing students, St. Petersburg, Florida	n=208 junior and senior nursing students completed full study	Questionnaire created in Phase 1 using 2 groups, 28 students provided a description of a faculty member who they thought of as a role model, and 131 completed the subsequent questionnaire to pilot it	Descriptive statistics, ANOVA with post hoc Tukey Both groups of students rated all 28 characteristics as important to very important Students were able to make judgments about which behaviours they choose to practice	+ Large sample + Open-ended and close-ended survey data + Appropriate statistical analyses + High reliability testing of questionnaire (n=0.95) + High internal consistency of sets of role modelling behaviours - No reported response rate	9.5

Authors and Publication Date	Study Objective(s)	Study Design	Types of Subjects & Setting	No. of Subjects	Data Collection Techniques	Data Analysis & Results	Strengths & Limitations	MERSQI Score
Quantitative Role Modelling Literature Ordered Chronologically (n=8)								Max Score 18
Al-Kandari, F. (1991)	To compare students and faculty perspectives on the people who are selected as actual role models for nursing students, the people who are selected as ideal role models for nursing students, the length of time involved in knowing that role model, the factors that contributed to the selection of a particular person as a role model, and the perceived important behaviours of people who are selected as role models	Cross-sectional survey (PhD dissertation)	Nursing faculty and students Setting: 3 nursing schools offering baccalaureate degree in Indiana, USA	Group 1: undergrad 1st and 2 nd semester nursing students (n=205) Group 2: nursing faculty (n=39)	2 role model scales developed to measure attitudes (Attitude Scale) and behaviours (Behaviour Scale) from student and faculty perspectives	Descriptive statistics ANOVA, mean scores reported for both groups and compared, Chi-square tests to analyze and compare nominal data No sig. diff between the status of selected actual role models for students & faculty. No sig.diff between status of selected ideal role models for students & faculty. Sig. diff between length of time students have known their selected most influential role model and the length of time faculty think they have known them. (Fac, short term, Students, long term). Sig.diff between students and faculty's opinions of factors contributing to selection of role models. Students chose 'knowledge', faculty chose 'enthusiasm'. No sig.diff between students and faculty's agreement on the important behaviours of a role model. Common themes were genuine interest, available, patient.	<ul style="list-style-type: none"> + Reliability & validity testing well explained, acceptable results + ANOVA appropriate as non directional hypotheses identified - Samples of students and faculty uneven - Literature review did not offer any critique or identify gaps - Scales poorly explained (began with discussion of two scales, Attitude and Behaviour, then seperated Attitude into 2 factors) - Hypothesis testing results not summarized in text - Did not clearly describe the differences in status or position titles for faculty - Faculty sample mostly full time (doesn't reflect current models and staffing in nursing education) 	12

Appendix G: Breakdown of MERSQI Scoring of Empirical Role Modelling Literature

Quantitative Role Modelling Literature
 Ordered Chronologically Most Recent to Most Dated (n=8)

MERSQI Domain		MERSQI Item (Score)		Agarwal et al., (2010)	Yazigi et al., (2006)	Maker et al., (2006)	Lewis et al., (2004)	Elzubeir & Robinson, (2003)	Wright et al., (2001)	Wiseman, (1998)	Al-Kandari, (1991)
Study Design	Item 1. Study Design Cross-sectional, descriptive, single group (1) Cross-sectional, comparative, 2 or more groups (2) Prospective observational, 1 or more groups (3)										
		Item 1 Score		1	1	1	2	2	2	1	2
Sampling	Item 2. No. Sites 1 (0.5) 2 (1) >2 (1.5)										
		Item 2 Score		1.5	0.5	0.5	1.5	0.5	1.5	1.5	1.5
		Item 3: Response Rate (%) Not reported (0) <50 (0.5) 50-74 (1) ≥ 75 (1.5)									
		Item 3 Score		1.5	1.5	0	0	1.5	1.5	0	1.5
Type of Data	Item 4. Type of Data Assessment by study participant (1) Objective measurement (3)										
		Item 4 Score		1	1	1	1	1	1	1	1
Validity of Evaluation Instrument	Item 5. Internal Structure Not applicable Not reported (0) Reported (1)										
		Item 5 Score		0	0	0	0	0	0	1	1
		Item 6. Content Not applicable Not reported (0) Reported (1)									
		Item 6 Score		1	1	0	1	1	1	1	1
		Item 7. Relationships to other variables Not applicable Not reported (0) Reported (1)									
		Item 7 Score		0	0	0	0	0	0	0	0
Data Analysis	Item 8. Appropriateness of Analysis Inappropriate for study design or type of data (0) Appropriate for study design or type of data (1)										
		Item 8 Score		1	1	1	1	1	1	1	1
		Item 9: Complexity of Analysis Descriptive analysis only (1) Beyond descriptive analysis (2)									
		Item 9 Score		2	1	2	2	2	2	2	2
Outcomes	Item 10: Outcomes Satisfaction, attitudes, perceptions, opinions, general facts (1) Knowledge, skills (1.5) Behaviours (2) Patient/health care outcome (3)										
		Item 10 Score		1	1	2	1	1	1	1	1
		Total Score		10	8	7.5	9.5	10	11	9.5	12
		Maximum Possible Score		18	18	18	18	18	18	18	18

Qualitative* Role Modelling Literature Ordered Chronologically, Most Recent to Most Dated (n=7)

MERSQI Domain		MERSQI Item (Score)		Illigworth, (2009) Conway et al, (2008) Wyber & Egan, (2007) Donaldson & Carter, (2005) Wright & Carrese, (2002) Paudert & Isich, (2001) Davies, (1993)						
Study Design	Item 1. Study Design Specific qualitative methodology not described (1) Specific qualitative methodology described (1.5) Methodology described and rationale given (2) Methodology and associated paradigm described (3)	Item 1 Score	1.5	1.5	1	1.5	1	1.5	2	
Sampling	Item 2. No. Sites 1 (0.5) 2 (1) >2 (1.5)	Item 2 Score	0.5	0.5	1	1	2	1	1	
Type of Data	Item 3. Sampling Not reported (0) Purposeful sampling (1) Purposeful sampling, data saturation described and achieved (1.5)	Item 3 Score	1	1	1	1	1	1	1	
Validity of Evaluation Instrument	Item 4. Type of Data Subjective data described by researcher (1) Subjective data interpreted by researcher (3)	Item 4 Score	1	1	1	3	3	1	3	
*Items 5,6,7: Removed for Qualitative										
Data Analysis	Item 8. Appropriateness of Analysis Inappropriate for study design (0) Appropriate for study design (1)	Item 8 Score	1	1	1	1	1	1	1	
Outcomes	Item 9: Complexity of Analysis Descriptive analysis only (1) Interpretive analysis (2)	Item 9 Score	1	2	2	2	2	1	2	
Outcomes	Item 10: Outcomes Satisfaction, attitudes, perceptions, opinions, general facts (1) Knowledge, skills (1.5) Behaviours (2) Patient/health care outcome (3)	Item 10 Score	1	1	1	1	1	1	1	
Total Score			7	8	8	10.5	11	7.5	11	
Maximum Possible Score			15	15	15	15	15	15	15	

Appendix H: Recruitment and Email Correspondence

Hello,

My name is Vanessa Cavalieri. I am a nursing student in the Master of Science Program here in the McMaster University School of Nursing. For my thesis, I am conducting a study exploring the role modelling of Level IV B.Sc.N. nurse preceptors in professional practice courses. These aspects will be explored through the reflections of faculty tutors, using their educational experiences teaching Level IV students. Aspects to be explored include opinions, perspectives, patterns of thought, or attitudes about socialization, teaching-learning, professional behaviours of role models, attitudes of students about role models, and personal characteristics of role models.

As a faculty member who has worked closely with senior B.Sc.N. students as a member of the preceptorship triad, your experiences discussing and guiding students through their senior professional practice courses are vital to the understanding of how students view role modelling by their nursing preceptors.

Who is invited to participate?

Full-time and part-time faculty, and clinical instructors, who have worked in the role of faculty tutor, within the past three years, with a Level IV B.Sc.N. student as they completed N4J/K07.

What will I be asked to do?

I invite you to complete a survey about students' opinions about role modelling by their preceptors, at a time and location that is convenient for you. This survey will be conducted using Q-methodology. The purpose of Q-methodology is to reveal different attitudes, opinions, or perspectives about a topic of interest, from the point of view of participants of interest. In Q-methodology, the participants are presented with a set of statements and are asked to rank them on a continuum.

For this study, you will first be asked to complete a short demographic information form. Then, I will give you a set of printed index cards, each card with a written statement about role modelling by nurse preceptors. You will be asked to 'sort' these cards onto a Bristol board template, according to how you feel about each statement (for example, do you strongly agree, agree, disagree, or strongly disagree). After you have completed the survey, I will ask you to read through the statements printed on the cards again and provide me with your thoughts about i) if there are things missing from the statements that your students have told you about role modelling by preceptors, and ii) if your perspective on role modelling as a faculty member differs from the themes reflected in the statements. The entire interview, including the completion of the demographic form is expected to take 30-40 minutes.

Why is this study significant?

While we know that role modelling is a powerful teaching-learning technique, it is often used passively or unconsciously by educators. Given that we know that preceptors are influential to student success both in their professional practice courses, and as post-licensure RN's, role modelling by nurse preceptors is an important area to investigate. It is hoped that the study results will enhance scholarly teaching by increasing awareness about views of role modelling. Findings of this study also may help educators identify explicit ways of using role modelling more strategically in clinical education, and assist students in developing more comprehensive and analytical views of role modelling experiences in clinical settings.

A Letter of Information and Consent is attached to this email that will give you an overview of the study and a more detailed look at what your role in it might be. Thank you for taking the time to consider my request. If you are interested, or have any questions, please email Vanessa Cavalieri (cavalieri@mcmaster.ca).

If you have any questions about your rights as a research participant, please call The Office of the Chair, HHS/FHSREB at 905.521.2100 x 42013. Thank you very much for considering this request.

Appendix I: Letter of Information and Consent

Local Principal Investigator:

E. Ann Mohide
 School of Nursing
 McMaster University
 Hamilton, Ontario, Canada
 (905) 525-9140 ext. 22267
 E-mail: eamoh@mcmaster.ca

Student Investigator:

Vanessa Cavalieri
 School of Nursing
 McMaster University
 Hamilton, Ontario, Canada
 Phone: (905) 537-9825
 E-mail: cavalieri@mcmaster.ca

What is the purpose of the study?

In this study, I will explore the role modelling of Level IV B.Sc.N. nurse preceptors in professional practice courses. These aspects will be explored through the reflections of faculty tutors, using their educational experiences teaching Level IV students. Aspects to be explored include opinions, perspectives, patterns of thought, or attitudes about socialization, teaching-learning, professional behaviours of role models, attitudes of students about role models, and personal characteristics of role models. I am hoping to discover groups of opinions, or common viewpoints, about role modelling by preceptors. I am conducting this research as part of my Master of Science (MSc) thesis at McMaster University, and it is being supervised by E. Ann Mohide.

How will the study goal be achieved?

This cross-sectional study uses Q-methodology, a type of measurement instrument that examines different attitudes, opinions, or perspectives from the point of views of the study sample. In Q-methodology, participants sort a set of statements about the topic of interest (in this case, role modelling by preceptors) on a continuum, from Strongly Disagree, through Neutral, to Strongly Agree.

What is a preceptor in the B.Sc.N. Program?

A preceptor is defined as a Registered Nurse (RN) at a health care agency where a Level IV student completes a 13-week professional practice course, with whom the senior nursing student is partnered to work for 24 hours a week. During this timeframe, the preceptor acts as the clinical teacher and role model to the nursing student.

What would be my role in this part of the study?

1. I am asking that you participate in a meeting with me where you will read and think about your opinion of different statements about role modelling by preceptors, and then sort these statements according to your attitude, opinion, or perspective about it on a continuum from Strongly Disagree, through Neutral, to Strongly Agree. After you have completed the sorting, I will ask you to explain why you placed the statements at the extreme positive and negative ends. This activity should take no more than 30 minutes.
2. I am asking that after you have completed the survey, that you provide me with your opinions on the statements that you sorted. I am interested in your opinions on whether there is anything missing from the statements (i.e. other things that your students have told you about role modelling by preceptors), and also whether your own perspective as a faculty tutor differs from the themes reflected in the statements. This activity should take no more than 10 minutes.

How do I sort the statements?

- The first step will be asking you sign the consent form, and then fill out a form with some demographic information, including your age group and gender, the type of clinical placements your students have experienced with a preceptor, and the number of years that you have been working with senior students. You will not be asked to provide any identifying information for yourself or for your students.

- You will be presented with a stack of cue cards that have statements about role modelling and preceptors typed on them. These statements were created by a sample of Level IV students and by the role modelling literature.
- You will also be given a Bristol board template with card placements on it that you will use to ‘rank’ these statements according to whether you think the students you’ve worked with agree, disagree, or are neutral about them. For example, if one statement read: “It is important that preceptors dress professionally when working with a student”, depending on your reflections on working with Level IV students, you would place it in the Strongly Disagree, Disagree, Neutral, Agree, or Strongly Agree area of the board. You will have the freedom to move the cards around until you are satisfied with the ordering, to stack them in any way that helps you to organize them, and there is no time limit.
- When your sorting of the statements is complete, I will assign you an anonymous Study ID, record the card numbers onto a Q-sort scoring sheet, and label both the scoring sheet and the demographic form with the Study ID.
- You will be asked by the researcher to briefly explain the rationale behind your choice of statements falling into the positive and negative extremes (Strongly Agree and Strongly Disagree). You will also be asked your opinions on whether there is anything missing from the statements (i.e. other things that your students have told you about role modelling by preceptors), and whether your own perspective as a faculty tutor differs from the themes reflected in the statements. Your responses will be recorded verbatim by the researcher.

What will be done with my sorting?

From your responses, and those of the other participants (approximately 60), the results will be analyzed, and groups of opinions will emerge.

What happens to my opinions about the statements?

- Written notes will be taken by the researcher about your feedback as you give it, with no identifying information recorded.
- In the Discussion section of my thesis I plan to use the data generated by faculty in a discussion about the comprehensiveness of the students’ statement generation. No identifying information will be included anywhere in the thesis, including the Discussion section.

How do I participate?

- Email me at cavalieri@mcmaster.ca expressing that you would like to participate. Please use an email address that you will frequently check.

What happens after I email you?

- You will receive a response to your email to arrange a mutually convenient time, date, and location for our meeting.

Are there any benefits to participating in this study?

- There may not be direct benefits to you.
- After being exposed to the students’ opinions, you may find yourself thinking more about role modelling and using it more as a conscious mechanism for teaching and learning.
- Advancing knowledge about senior B.Sc.N. students’ opinions regarding role modelling by preceptors may influence the future quality of role modelling by preceptors, and may inform teaching strategies used by educational nursing institutions to address role modelling in their curricula.

Are there any risks of participating in this study?

- Any risks are minimal.
- You may feel some mild frustration as you sort the cards, especially if you find that you feel similarly toward two or more statements and experience some difficulty in ranking them. This frustration would not be expected to be higher than that you might experience when playing a board game.
- You may worry that your students or colleagues (preceptors) might find out how you’ve ranked the statements. The risk of this is very low because you will not be divulging any specific information,

including your name, the students' name, the preceptor's name, or the specific clinical placement in which your students have worked. (See Anonymity below.)

- You may feel some unease if giving follow-up feedback that is constructive, for example, if you think that an important area was missed in the set of statements. This discomfort would not be expected to be any higher than you experience as a member of a healthcare team.
- You may feel uncomfortable with the statements reflecting student opinions about role modelling by preceptors.
- There will be minimal risk of inconvenience, as the Q-sort meeting will be arranged at a convenient time, date and location and will take no more than 30 minutes. There is minimal risk of inconvenience due to the short timeframe (approximately 10 minutes) required to complete the review.

How will my anonymity be protected?

- Your participation will be kept confidential.
- Your email messages will be deleted from my inbox and computer memory.
- Your Q-sort scoring sheet and demographic form will be kept separate from the list with your email address. All materials will be in locked cabinets, accessed only by the Investigators.
- All study information kept on a computer will be protected by a password.

What if I change my mind about being in the study?

- Your participation in this study is voluntary. It is your choice to be part of the study or not.
- You can decide to withdraw at any time, even after signing the consent form or part of the way through the study, there will be no consequence to you.
- You also have the option of requiring that all data already collected (e.g., sorted statements, opinions) be removed.

How do I find out what was learned in this study?

- When the thesis is completed, a brief report discussing the findings of this study will be posted on the McMaster University, School of Nursing, Preceptorship Program Website, and a general e-notice will be sent out directing all faculty at the three Program sites (McMaster University, Mohawk College, Conestoga College) to the website for further information. Publications and presentations arising from this work will be listed on the website, as well.

CONSENT FOR FACULTY PARTICIPANTS

Study Title: Preceptors’ Role Modelling of Senior B.Sc.N. Students
Explored Through Reflections of Faculty

I have read the information presented in the information letter about a study being conducted by Vanessa Cavalieri, supervised by E. Ann Mohide, of McMaster University.

I have had the opportunity to ask questions about my involvement in this study and to receive any additional details that I request.

I understand that if I agree to participate in this study, I may withdraw from the study at any time without consequence to me. I have been given a copy of this form and I will keep a copy of it for my records. I agree to participate in the study.

Please circle your choice for each item.

- 1. *I agree that the order in which I sort the statements (cue cards) given to me by the investigator can be recorded on a scoring sheet.*

Yes No

- 2. *I agree that the rationale I provide regarding my selection of extremely positive and negative statements, as well as the opinions that I provide about the Q-sample statements can be written down by the researcher, and that all identifying information will be removed.*

Yes No

Name of Participant (Printed) Signature Date

Consent form explained in person by:

Name and Role (Printed) Signature Date

This study has been reviewed by the Hamilton Health Sciences/McMaster Faculty of Health Sciences Research Ethics Board (HHS/FHSREB). The REB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call The Office of the Chair, HHS/FHSREB at 905.521.2100 x 42013. If you would like any further general information, please contact:

- Vanessa Cavalieri: cavalieri@mcmaster.ca
- E. Ann Mohide: (905) 525-9140, ext. 22267, eamoh@mcmaster.ca
- Dr. Noori Akhtar-Danesh: (905) 525-9140, ext. 22297, daneshn@mcmaster.ca
- Dr. Colleen McKey: (905) 525-9140, ext. 22305, mckeyc@mcmaster.ca
- Dr. Catherine Tompkins: (905) 525 – 9140, ext. 22241, tompkins@mcmaster.ca

Appendix J: Finalized Q-Sample (n=34)

Category	No.	Statement
		Through my interactions with my nursing students in professional practice courses, students have indicated that: <i>(Preamble to each statement)</i>
Socialization Behaviours	1	When they begin their 4 th year professional practice courses, they see their preceptors as role models. The preceptors inspire students as they are about to begin careers as professional nurses.
	2	The important learning moments often come from their relationships with their preceptors, working together, sharing knowledge and skills, problem-solving, and interacting with staff.
	3	Preceptors should role model behaviours designed to socialize students to the profession. For example, orienting them to the clinical unit, introducing them to team members, and creating a comfortable learning environment.
	4	Preceptors convey powerful and long-lasting impressions about becoming a nurse and entering the profession.
Professional Behaviours	5	Preceptors should set a good example for students by acting professional, for example, arriving on time for every shift, being respectful of other members of the health care team, using appropriate professional language, and keeping their personal opinions and judgments to themselves.
	6	Preceptors should set good examples for students by looking professional, for example, wearing clothes that are appropriate for their work, and keeping neatly groomed hair and nails. These set important examples for students.
	7	It is very important that preceptors role model effective interprofessional teamwork, after all, teamwork achieves quality patient care outcomes.
	8	Good role models demonstrate that they are life-long learners. They are open to learning from others, even students.
	9	Preceptors should role model effective management of disagreements and conflicts and respond to such situations from as unbiased a point of view as possible.
Professional Practice Knowledge and Skill (Competence, Confidence, Caring)	10	Role modelling by preceptors is the strongest method for teaching the ‘art of nursing’; in other words, the things that can’t be readily learned without experiencing them. For example, preceptors model the realities of nursing in ‘real life’ and ‘real time’.
	11	As Level IV nursing students, they feel that they can discern between good nursing practices, and negative ones. If they don’t agree with the preceptors’ practice(s), then they don’t have to imitate those practices.
	12	As a role model, the most important aspect that preceptors taught students was how to be competent nurses, for example, exercising good clinical reasoning and judgment.
	13	Watching preceptors communicate and show caring with patients, families and staff, teaches students how to initiate and maintain therapeutic relationships, as well as effectively communicate with the nursing team.
	14	When they see preceptors doing things that the students think are inappropriate, it is stressful because students don’t know what action to take. For example, if a preceptor’s practice is not within acceptable standards, students need to remember not to pick up those practices.
	15	They feel that preceptors should have sufficient experience on the unit, to ensure that the preceptor-student relationship is not one of “student teaching another student”.
	16	Role models need to be able to adapt to different patients and different situations.
	17	One extremely important role modelling behaviour is being supportive of both the people

		with whom the preceptors' work, and the nursing students who they precept.
Intentional Role Modelling/ Attitudes Toward Role Modelling	18	While students do not choose their preceptors, they do choose their role models.
	19	Students can tell when preceptors don't really want to work with learners. Students find it hard to learn and become more confident when they feel that they are seen as being a burden.
	20	Nurse preceptors may be intimidated by an expectation that they have to role model at a level beyond which they think they can achieve.
	21	They trust that the preceptors know what they are doing, and therefore, may not question preceptors' methods of practice.
	22	They feel like preceptors should be enthusiastic about working with students, for example, having an 'I want to work with students' attitude.
	23	Expectations of preceptors as role models should be realistic. After all, they are meant to help nursing students learn about the realities of being a practicing nurse.
	24	It may be difficult for preceptors to role model positively when they feel too busy, stressed, and/or tired. Preceptors are not perfect, and students should not expect them to be. No one is perfect.
Teaching-Learning	25	Their preceptor's role modelling helped them think about ways that students want to teach when they become preceptors.
	26	Preceptors need to remember that as clinical teachers they are always using role modelling as a teaching strategy. Some preceptors may not always be aware of what, and when, they are role modelling for students.
	27	They look to their preceptors to give feedback for improvement in ways that leave students feeling encouraged, wanting to learn more, and willing to try again.
	28	To be good role models, preceptors have to balance giving students their 'wings' (increasing their autonomy as the students increase their competence), and at the same time providing guidance and support when needed.
	29	Preceptors who are good role models conduct non-judgmental assessments of students' skill and knowledge, and will teach to an appropriate level of expectation.
	30	Preceptors must feel comfortable working and communicating with the students' tutors. This helps students feel that their preceptors are well connected to the nursing program.
Personal Characteristics	31	If preceptors are not approachable (like not engaging students, or not working collaboratively with students), it is hard to see those preceptors as good role models.
	32	Preceptors who demean students stand very little chance of having students view them as positive role models, even if they are competent and experienced. It's hard for students to look past the way preceptors make them feel.
	33	Preceptors who are good role models work from a position of authenticity. They admit when they don't know something, or when something could have been done better.
	34	Good role models show empathy towards students, providing support and guidance. Student nurses juggle many challenges, including physically and emotionally draining clinical experiences, and having many demands on students' lives.

Appendix K: Demographic Form

Thank you for participating in this research study! Please fill out the following information. If at any point, you have any questions, or if you feel uncomfortable disclosing some information, please bring this to the attention of the interviewer.

1. Please check (✓) the age range that applies to you.
 25-30 31-36 37-42 43-50 50-55 55+
2. Please check (✓) the gender term that applies to you.
 Male Female Prefer not to say
3. Please check (✓) the nature of your appointment with the McMaster School of Nursing.
 Full-time faculty
 Part-time faculty
 Clinical faculty
4. For approximately how many years have you worked with Level IV students in the faculty tutor role while in your teaching role here at the McMaster University School of Nursing?

5. Please estimate the total number of Level IV students with whom you have tutored in professional practice courses?

6. Below is a list of type(s) of Level IV clinical placements in which preceptored professional practice courses are commonly offered. Please do **NOT** name a specific institution, unit, or floor. Please do **NOT** name preceptor(s). Please check (✓) the placement types that typically apply to the students that you have worked with.

Inpatient Services

- | | |
|---|---|
| <input type="checkbox"/> Cardiology | <input type="checkbox"/> Palliative |
| <input type="checkbox"/> Coronary Care | <input type="checkbox"/> Pediatrics |
| <input type="checkbox"/> Complex Continuing Care | <input type="checkbox"/> Perioperative |
| <input type="checkbox"/> Emergency | <input type="checkbox"/> Post Anesthesia Care Unit (PACU) |
| <input type="checkbox"/> Geriatrics | <input type="checkbox"/> Psychiatry |
| <input type="checkbox"/> Intensive Care Unit | <input type="checkbox"/> Rehabilitation (Stroke, Spinal Cord) |
| <input type="checkbox"/> Labour and Delivery | <input type="checkbox"/> Surgery |
| <input type="checkbox"/> Medicine | <input type="checkbox"/> Surgical Oncology |
| <input type="checkbox"/> Neonatal Intensive Care Unit | <input type="checkbox"/> Trauma |
| <input type="checkbox"/> Oncology | <input type="checkbox"/> Vascular Surgery |
| <input type="checkbox"/> Orthopedics | <input type="checkbox"/> Other |

Ambulatory Care

- | | |
|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> Cardiology | <input type="checkbox"/> Pediatrics |
|-------------------------------------|-------------------------------------|

- Coronary Care
- Geriatrics
- Medicine
- Oncology
- Orthopedics
- Psychiatry

- Perioperative
- Post Anesthesia Care Unit (PACU)
- Primary Care (Family Doctor, Clinic)
- Rehabilitation (Stroke, Spinal Cord)
- Same Day Surgery
- Other

Community

- Public Health
- Community (in home) nursing care

7. Please provide your definition of role modelling.

Appendix L: Ethics Approval



HHS/FHS REB: Student Research Committee

Final Approval

Date:	February 16, 2012
REB Number:	12-066-S
Title of Study:	Role Modelling by Preceptors: Senior BScN Students' Opinions
Student PI:	Vanessa Cavalieri
LPI:	Mohide, A.
Version date:	Document:
Jan 23 2012	Application
Feb 8 2012	Protocol
Feb 8 2012	Student Consent (Phase 1)
Feb 8 2012	Student Consent (Phase 2)
Feb 8 2012	Faculty/Preceptor Letter of Information
Feb 8 2012	Announcement Letters (Phase 1 and 2)
Feb 8 2012	Email Correspondence (Phase 2)
Feb 8 2012	Posteriori Email
Jan 23 2012	Demographic Form
Jan 23 2012	Interview Guide (Phase 2)

Dear Vanessa:

We have completed our review of your study and are pleased to issue our final approval. You may now begin your study.

All recruitment and consent material must bear an REB stamp. You may pick up the stamped forms from our office.

Any changes to this study must be submitted as an amendment before they can be implemented. Amendment forms are available on our website.

This approval is effective for 12 months from the date of this letter. If you require more time to complete your study you must request an extension in writing before this approval expires. Please submit an Annual review form with your request.

Please cite the REB number in any correspondence.

Good luck with your research,

Kristina Trim, PhD, RSW
 Chair, HHS/FHS Student Research Committee
 Health Research Services, HSC 1B7, McMaster University

The HHS/FHS SRC complies with the guidelines set by the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans and with ICH Good Clinical Practice.