



Gun-Britt Lejonqvist

Clinical Competence

– the Core of Nursing Education





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CLINICAL COMPETENCE - THE CORE OF NURSING EDUCATION



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- the core of nursing education

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“ Nursing is an art: and if it is to be made an art, it requires an exclusive devotion as a hard preparation as any painter’s or sculptor’s work: for what is the having to do with dead canvas or dead marble, compared to having to do with the living body, the temple of God’s spirit? It is one of the Finest Arts: I had almost said the finest of Fine Arts”

(Florence Nightingale 1871, 6)

ABSTRACT

Lejonqvist, Gun-Britt, 2018: Clinical competence – the core of nursing education

Supervisors: Professor emerita Katie Eriksson, PhD, Åbo Akademi University, Docent Riitta Meretoja, PhD, University of Turku, Nursing Director in Research and Science, Helsinki University Hospital, Professor Lisbeth Fagerström, PhD, Åbo Akademi University.

This thesis takes its starting point in caring science viewing caring as the core of nursing, and acknowledging clinical caring science as a humanistic oriented science. The main aim is to define clinical competence and to describe how it can be made visible, evaluated and developed during a bachelor degree nursing education. The thesis is based on three sub-studies and seeks answers to the main questions: 1) What clinical competence is needed in nursing, and how can this competence be made evident? 2) What concepts, definitions and theoretical perspectives are used in recent studies evaluating clinical competence in nursing education? 3) What shapes and expressions does clinical competence take in simulated situations and how can clinical competence be developed by simulation? The approach in the thesis is hermeneutics, and the view on knowledge is open interpreting and understanding the world by looking, describing, valuing and reflecting (Eriksson 2017, 2010, Gadamer 1997, 1996, Helenius 1990). The thesis is anchored in ethos and the ontology formed by Eriksson (Eriksson & Lindström 2007), giving the research the sight and direction.

Clinical competence showed as encountering, knowing, performing, maturing and developing, both as a stage and a process, ontological and a contextual. Ontological competence is relational executed bed-side and transferable between contexts, the contextual being more structural and local requiring contextual knowledge. In evaluating clinical competence three themes were identified; professional practice, clinical skills and reflective practice, and cognitive, affective and psychomotor skills. All three being quite holistic, and having a nursing or a caring perspective. Definitions of the clinical competence vary why being explicit about used definitions and perspectives becomes important. Clinical competence can be evaluated and developed by simulation learning by well-planned scenarios, considering all dimensions of clinical competence. Nursing education should put effort on developing an ontological clinical competence, and continuous evaluation using different methods is needed to cover both the objective and experienced competence of students'. Clinical competence depends on both internal and external factors, on the student's personal qualities and abilities and also on the culture in the context.

Keywords: clinical competence, nursing education, caring science, hermeneutics

ABSTRAKT

Lejonqvist, Gun-Britt, 2018 : Klinisk kompetens – kärnan i sjukskötarutbildningen

Handledare: Professor emerita Katie Eriksson, PhD, Åbo Akademi, Docent Riitta Meretoja, PhD, Turun Yliopisto, Överskötare i forskning och vetenskap, Helsingfors Universitets Sjukhus, Professor Lisbeth Fagerström, PhD, Åbo Akademi.

Denna avhandling har sin utgångspunkt i vårdvetenskap och ser vårdandet som kärna i vården och vårdvetenskapen som humanvetenskapligt orienterad. Syftet är att definiera klinisk kompetens, beskriva hur den kan synliggöras, evalueras och utvecklas i sjukskötarutbildning på kandidatnivå.

Avhandlingen baserad på tre delstudier besvarar följande huvudfrågor: 1) Vilken är den kliniska kompetens som behövs i vården och hur kan den synliggöras? 2) Vilka begrepp, definitioner och teoretiska perspektiv finns som bakgrund till de metoder som används för att evaluera klinisk kompetens? 3) Vilka former och uttryck ses på klinisk kompetens i simulerade situationer och hur kan kompetensen utvecklas genom simulering? Den övergripande ansatsen i avhandlingen är hermeneutisk. Synen på kunskap är öppen, tolkande och förstår världen genom att se, förklara, värdera och reflektera (Eriksson 2017, 2010, Gadamer 1997, 1996, Helenius 1990). Avhandlingen är förankrad i ethos och ontologin formad av Eriksson (Eriksson & Lindström 2007), vilket ger forskningen sin riktning och riktning i kunskapsökandet.

Den kliniska kompetensen visade sig i att möta, att veta, att utföra, att mogna och att utvecklas. Den är både ett tillstånd och en process, ontologisk och kontextuell. Den ontologiska kompetensen är relationell, verkställs vid patientbädden och är överförbar mellan kontexter. Den kontextuella är mer strukturell och kräver kontextuellt kunnande. I evaluering av den kliniska kompetensen hittas 3 teman; professionell praktik, kliniska färdigheter och reflektiv praktik och kognitiva, affektiva och psykomotoriska färdigheter. Alla tre är relativt holistiska, med ett nursing eller caring perspektiv. Synen på klinisk kompetens varierar, varför det blir viktigt vara tydlig gällande definitioner och perspektiv. Klinisk kompetens kan värderas och utvecklas i simulering genom välplanerade scenarier som beaktar den kliniska kompetensens alla dimensioner. I vårduutbildningen borde mer satsas på att utveckla den ontologiska kliniska kompetensen och en kontinuerlig evaluering med olika metoder behövs för att fånga både studenternas objektiva och upplevda kompetens. Den kliniska kompetensen beror på både inre och yttre faktorer, på studentens personliga kvaliteter och förmågor samt på kulturen i kontexten.

Sökord: klinisk kompetens, vårduutbildning, vårdvetenskap, hermeneutik

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This thesis is dedicated to my parents. Thank you for the love you gave me.

Borgå in June 2018

Gunn-Britt Lejonqvist

LIST OF ORIGINAL ARTICLES (I-III)¹

ARTICLE I

Lejonqvist, G-B., Eriksson, K., Meretoja, R. 2012. Evidence of clinical competence. *Scandinavian Journal of Caring Sciences*, 26 (2), 340-348.

ARTICLE II

Lejonqvist, G-B., Eriksson, K., Meretoja, R. 2016. Evaluating clinical competence during nursing education: A comprehensive integrative literature review. 2016. *International Journal of Nursing Practice*, 22 (2), 142-151.

ARTICLE III

Lejonqvist, G-B., Eriksson, K., Meretoja, R. 2016. Evidence of clinical competence by simulation, a hermeneutical observational study. *Nurse Education Today*, 38 (1), 88-92.

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1 Introduction

In autonomous caring science concepts are the basis for all scientific work. Clinical competence can be classified as a practice concept, describing caring and nursing in a clinical context. (Eriksson & Bergbom 2017)

Questions about clinical competence in nursing and in nursing education, what it is and how it can be evaluated and developed has been discussed since the work of Benner (1984), and clinical competence is given most space in the curriculum of nursing (Eriksson et al. 2015, WHO 2009). Nevertheless an overall definition of the concept is lacking and most researchers agree upon that it is hard to define. The challenge of defining it has led to the use of numerous concepts describing the phenomenon, as skills, ability, capability and performance.

Concepts are depending on perspectives and given different meanings within the different perspectives. No concepts are free from ontology, but always tied to the worldview and the view of science (Eriksson & Bergbom 2017, Morse et al. 1996).

In this thesis the view on clinical competence arises from the caritative theory as described in the caring science developed at Åbo Akademi University (Eriksson & Lindström 2000). This perspective implies a hermeneutical approach in the search for knowledge. The thesis acknowledges caring as the core of nursing and thereby ethos, the idea of love and mercy, becomes evident in clinical competence. Through practice and ethos a caring communion is created and practice becomes an art, something more than mere techniques and procedures.

1.1 Background

To place the thesis in context a short summary on the development of nursing education in Europe and the Finnish health care system is given

Nursing education in Europe

The European Higher Education area (EHEA) and the European Union (EU) have influenced nursing education throughout Europe with the aim to ensure comparable and compatible systems supporting mobility of nurse students and professionals within the EU Member States. (EHEA 2010, EU 2005) This European collaboration and the Bologna process has led to big changes in the nursing education in Finland, as indeed in the whole of Europe (Collins & Hewer 2014, Lahtinen et al. 2014, Bologna Declaration 1999), and can be seen as the single most important reform affecting every nurse in practice, education and research in the Members States (Palese et al. 2014, Davies 2008). The process has led to a shift in nurse education from vocational to higher education making it more uniform, transparent and efficient so it can react to changes in the labour market, challenges posed by an ageing population and increasing globalization (Collins & Hewer 2014). An increasing number of specialist nurses graduate even if a nursing degree can still be obtained by different educational systems, in schools of nursing, colleges, universities of applied sciences/ polytechnics and universities. The length of a nursing education varies from two to four years and most of the countries within the EU offer education leading to a bachelor's degree. (Lahtinen et al. 2014)

Based on the EU directive (EU/2013/55) The thematic European Nursing Network defined the competency categories covering 180 ECTS of nursing education as; professional values and the role of nursing, nursing practice and clinical decision-making, nursing skills,

interventions and activities, knowledge and cognitive competencies, communication and interpersonal relationships and leadership, management and team abilities (WHO 2009, Marrow 2006). The Scandinavian countries having similar social and health care structures were encouraged to collaborate on educational programmes, research and teacher and student exchange by the Nordic Council of Ministers 2009. The plans for nursing education in the Nordic countries also have many similarities, they are nationally based and set standards for the nursing education and they are in line with the general competences taking shape in the Bologna process. (Råholm et al. 2010)

In the Scandinavian countries Finland, Sweden, Norway and Iceland nursing / caring science is the main subject in nursing education. The nursing / caring science influences mainly came from the United States of America during the period 1970-1980, and among the most quoted theorists were Peplau, Henderson, Abdellah, Rogers and Watson (Eriksson 1988). Two traditions nursing and caring co-exist (Laiho 2010). The caring tradition was introduced by the Finnish theorist Katie Eriksson during the 1980's (Eriksson 1987a) and the Norwegian theorist Kari Martinsen (Martinsen 1990), and later Karin Dahlberg from Sweden (Dahlberg 1995) and Sigrídur Halldórsdóttir from Iceland (Halldórsdóttir 1996). The caring tradition has spread within the Nordic countries especially through the postdoctoral Nordic network founded at Åbo Akademi Vasa (Arman et al. 2015, Råholm et al, 2010). The network grew and is still growing. (Eriksson & Lindström 2012),.

In compliance with the EU directive (EU/2013/55) in Finland the minimum standards for nurses' professional competence was described, and minimum credits for each competence area determined in order to unify the minimum competence for all nurses graduating in Finland. The competences include 180 ECTS credits in general care out of the total 210 ECTS credits required, or three years of the three and a half year long education. The professional competences are; client centred care, ethics and professionalism in nursing, leadership and

entrepreneurship, clinical nursing, evidence-based practice and decision making, education and teaching, promotion of health and functional ability, social and health care environment and quality and safety of social and health care services. Of the total 180 ECTS credits clinical nursing account for 105, including 90 ECTS credits clinical placements. This is divided into; support for the patient, diagnostic procedures, infection control, pharmacological treatment, anatomy and physiology and nursing in different contexts. Clinical nursing seems to build strongly on a nursing tradition, on natural sciences and contextual competence, while the caring foundation is in the general professional competences. (Eriksson et al. 2015)

The Finnish health care system and its impact on nursing education

The Finnish healthcare system as good as it is, is socioeconomically unequal and biased adverse of high-income groups (OECD, Health at a Glance 2015: 125-129). The inequalities are due to the differences between public health care, occupational health care and care offered by private producers and also to regional differences regarding access and quality of care. The population is aging and health care expenses are increasing. As a solution a national Social Welfare and Health Care reform (SOTE) is planned in order to reduce social and geographical inequalities and prevent cost increases. The government proposes healthcare services run by larger entities (social- and health care regions) rather than municipalities. (Valtioneuvosto -Council of State 2017)

The public administration will be organized in three levels, the state, the five new regions and municipalities, and service will be combined at all levels for seamless service chains. The SOTE areas can either provide the services themselves or use private or third sector service providers. To provide services themselves, the SOTE areas will have to establish separate (public) limited companies and compete with all other service

providers. The competitive situation could make service production more effective and cost efficient. Patient /clients will be able to choose their healthcare provider private or public. (Tervameri 2017, Kallioma-Puha & Kangas 2016)

Not only the ageing population and burgeoning costs but also digitalisation the provision of eHealth and eSocial services impose demands on nursing education and the competence of future nurses. The national eHealth toolkit for nations (WHO 2012) and the European eHealth action plan 2012-2020 states that eHealth can benefit, citizens, patients, professionals and organisations and can deliver more personalized, targeted, effective and efficient healthcare, reducing errors and long hospital stays. (WHO 2012, EU 2012) The Finnish eHealth strategy focuses on the role of nurses' in the development and implementation of eHealth services and on strengthening citizens' self-care. The knowledge gap between patients / clients and professionals is becoming smaller. Patients use mobile devices to monitor their health, digital services to get information and meet health professionals at a distance. Taking part in developing and providing digital services will become an important part of the future competences. (FNA 2015, The Finnish Ministry of Social Affairs and Health 2013)

Efficient technology, advances in both medical science and nursing and an increasing need for healthcare services puts demands on nursing education. In Finland, as in most European countries, the education is at bachelor's level corresponding to European Qualification Framework level 6 (EQF 2013). The so called KASTE programme 2011-2015 initiated by the Finnish Ministry of Social Affairs and Health, includes specialized studies for nurses in an even more complex working life. The specialized studies are contextual and/or focusing on a specific aspect of clinical nursing and carry at least 30 ECTS credits. (Rautiainen & Vallimies-Patomäki 2014)

To improve quality and safety in nursing practice, advanced nursing practice (APN) vacancies have been established (Jokiniemi 2014,

Nieminen et al. 2011, Sheer & Wong 2008). The idea was introduced in the Nordic countries at the beginning of 2000, and include nurse practitioners, clinical nurse specialists, nurse anaesthetics, nurse midwives and case managers, but only in the USA are all roles developed and in practice (Fagerström & Glasberg 2017). Most countries develop APN roles with focus on nurse practitioners and clinical nurse specialists. In Finland the first vacancies for Clinical Nurse Specialists were founded in University hospitals in the beginning of 2000 (Kotila et al. 2017, Jokiniemi 2014, Nieminen et al. 2011). Even if the first APNs in Finland from Universities of applied sciences graduated 2006 (Fagerström 2012, Fagerström & Glasberg 2011). Public Health Nurses for example have had quite much resampling an advanced practitioner role in Finland for decades (Delmaire & Lafortune 2010, Åberg & Fagerström 2006). Advanced practice nurses provide holistic care, perform advanced assessments, consultations, diagnoses, order and interpret tests and manage various chronic illnesses. (Kruth 2013, Altersved et al. 2011). Even if the advantages of having advanced practice nurses in clinical care are obvious, their place in the health care system is not clear, and both the hierarchic and the collaborative questions between different professionals must be solved. (Suutarla et al. 2015, Bergman 2013, Lindblad & Fagerström 2011, Fagerström & Glasberg 2011, Fagerström 2009)

In a world of changes new competences must and will evolve. New knowledge and skills will enter the nursing curriculum. In time of change, it is important not to lose sight on the core of nursing. One needs to consider what nursing students need to learn during education, and what they can learn in different contexts and in practice. They need to know when their competence is sufficient and they can take decisions and work independently, when they need to cooperate, and when they need the knowledge and skills of other professionals.

This thesis is part of the ongoing discussion about how to define, evaluate and develop clinical competence during nursing education leading to a bachelor's degree. It takes as its starting point caring

science, and acknowledges clinical caring science as a humanistic oriented science intended to make clinical caring science evident in clinical contexts and elucidate patterns that carry the core and ethos of the systematic caring science.

1.2 Structure of the thesis

This thesis focuses on clinical competence in nursing education. It is a compilation of three separate studies and a frame. The overall methodological approach is hermeneutical and each study changes and deepens the understanding reached by the previous one (Ödman 2016, Gadamer 1996, Bernstein 1983).

Chapter One describes the ongoing changes and the challenges nursing education in Finland is facing, and discusses the need for nursing education to develop to meet those challenges. Chapter Two sharpens the focus of the study by describing the aim and presenting the overall research questions. It contains the design illustrating the logic and the relation between the three studies moving from defining clinical competence according to empirical evidence, to ways and perspectives used to evaluate clinical competence, finally showing how it becomes evident and can be evaluated and developed in simulated situations during nursing education. Chapter Three describes the pre-understanding in light of a literature review. It defines the concept through a historical review, by means of concept analysis, systematic reviews and recent studies, and finally discusses the relation between clinical competence and evidence-based care in nursing education. Chapter Four presents the theoretical perspective of the study, the ontological, epistemological and methodological starting points and summarizes the sight, the search and the closing in the thesis. In chapter Five the overall methodology, hermeneutics, and the methods of the sub studies is presented. Chapter Six addresses the ethical questions of the

studies. In Chapter Seven the findings of the three sub-studies are presented and the understanding of the concept of clinical competence, what it is, how it can be evaluated and developed during nursing education is discussed. In the sub studies clinical competence in nursing education is viewed from an empirical perspective, triangulating the definitions given by nursing students, teachers and preceptors. This is viewed theoretically by looking for the concepts and perspectives underpinning the evaluation of the clinical competence of bachelor nursing students. Finally through a hermeneutical observational study clinical competence is made visible and it is shown how it can be developed by simulation in the course nursing education.

The discussion in Chapter Eight is a synthesis of the sub studies and the results are presented, the knowledge gained is discussed as also the methodological questions. Conclusions are drawn and the implications for nursing education in the future are summarised.

2 Aim, research questions and design

This chapter presents the research topic and the study design.

2.1 Aim and research questions

The overall aim of the thesis is, from a caring science perspective, to define clinical competence, and to describe how it can be made visible, evaluated and developed during nursing education.

The thesis based on three sub-studies and seeks answers to the following main questions:

1. What the clinical competence needed is in nursing, and how can this competence be made evident (Study I)
2. What concepts, definitions and theoretical perspectives are used in recent studies evaluating clinical competence in nursing education (Study II)
3. Which shapes and expressions does clinical competence take in simulated situations and how can clinical competence be developed by simulation (Study III)

2.2 Design

The design illustrates the three sub-studies (I-III) and how in accordance with the hermeneutical approach a more profound understanding of clinical competence in nursing education has been achieved.

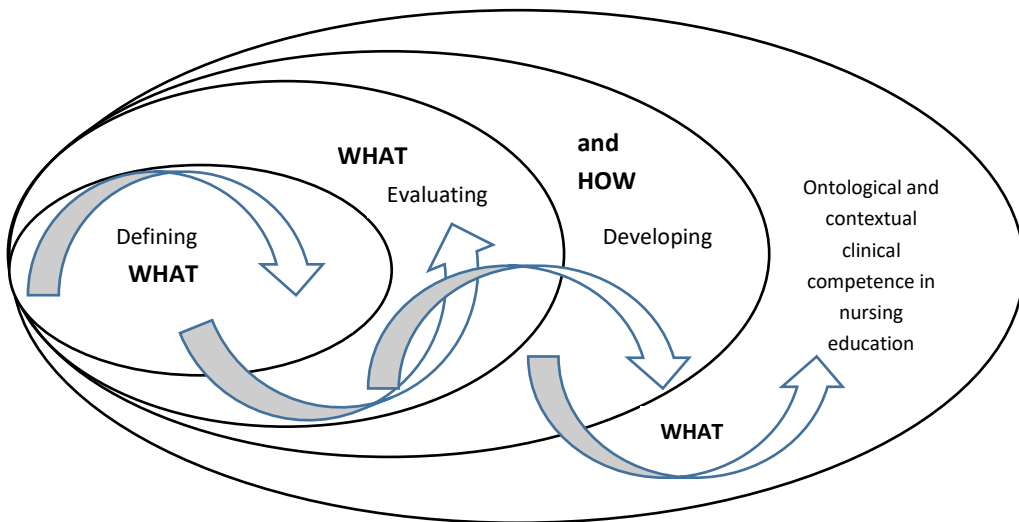


Figure 1. The design of the thesis

A hermeneutical approach guides the thesis (Gadamer 1997) and caring science is the perspective. Clinical competence is defined from the empirical perspective of nursing students, teachers and preceptors giving a view of the concept in education (Study 1). With a comprehensive integrative literature review with a holistic perspective on clinical competence ways of evaluating clinical competence in nursing education are studied, and concepts and theoretical perspectives underlying the evaluations are revealed (Study 2). The hermeneutical understanding of clinical competence deepens by an observational hermeneutical study of simulated situations in nursing education, where clinical competence is made visible and developed (Study 3). The choice of simulated situations is motivated by the authentic learning experiences and unique possibilities for students to develop their clinical competence they offer. (Lavoie & Clarke 2017, Kim et al. 2016, Skrable & Fitzsimmons 2014, Hincliffe Duphily 2014, Khalaila 2014). The three studies are tied in a hermeneutical circle ending up in a deepened understanding of what clinical competence is, how it can be evaluated and developed during nursing education.

3 Literature review

To gain an understanding of clinical competence in nursing and nursing education the starting point is taken to be in the general concept of competence. The concept is viewed from an historical perspective and also through recent research on the topic. Literature reviews are included in the original articles, a systematic one in Study II, but an update was completed in December 2017. The databases used were Academic Search EBSCO, (Academic Search Elite, Cinahl), Science Direct and Google Scholar. Due to the abundant material on the topic, the search words used were clinical competence in combination with nursing/caring, and nursing education and the time limit was set from January 2013 to December 2017. Abstracts available was a requirement.. A manual search was also conducted. The search resulted in the inclusion of more than 20 new references, but older, relevant articles have been retained in the review.

The concept of competence

The first use of the concept competence occurs in the work *Lysis* by Plato written in 380 B.C. (Mulder et al. 2006), where the relation between knowledge, virtue and good is problematized (Plato 2008). The root of the word *ikano* (from *iknoumai*) means to arrive. In ancient Greek the word *ikanótis* is found, and refers to the quality of being *ikanos* (capable), to have the ability to achieve something, a skill. Aristotle (1999) develops the discussion of competence, introducing the three forms of knowledge, *techné*, *episteme* and *phronesis*. *Techné* refers to knowing how, it is a context bound craft or art aiming to produce something and learnt by doing. *Episteme* is to know why, a context independent intellectual act aiming to understand and learnt by intellectual efforts. *Phronesis* is practical or well-founded wisdom. It is a reasoned capacity to act for the good of humanity, it is bound to lived experiences, but not a set of techniques.

The concept of competence is also found in the Latin language in the form of "*competens*" meaning being able and allowed by law/regulations and in the form "*competentia*" meaning (cap)ability and permission. By the sixteenth century the concept was found in English, French and Dutch. (Mulder 2006) In English the word competence appears in the 1590s meaning rivalry, about 1600 the meaning has changed to adequate supply and 1630s competence refers to sufficiency for living at ease, and from 1790 sufficiency to deal with what is at hand (Collins English Dictionary online). Today competence is defined as the quality of being competent, adequacy, possession of required skill, knowledge, qualification or capacity (Dictionary.com 2017).

Competence in nursing

Competence as a concept entered the nursing field as late as the 1960s (Johnson 1966) and even if there was discussion and writing on competence especially in nursing education, and Butler 1978 defined it as "an ability to meet prevailing standards for a particular activity" (Butler 1978), it was really the work of Benner 1984 that established the concept and its use in clinical nursing (Benner 1984). Even if research on competence in nursing has increased during the last thirty years, and even if Gonzi as early as in 1994, identified a behavioristic, a generic and a holistic way of defining competence, the concept competence remains vague, controversial and elusive (Sasso et al. 2017, Cowan et al. 2005, Watson et al. 2002, Gonzi 1994). Adding different working environments makes it even more challenging (Pantelidou et al. 2016).

Seven concept analysis on the words competence and competency have been performed in the field of nursing. They all view the concept holistically, and take it to refer to the knowledge, skills and personal characteristics needed to meet professional standards. It is a dynamic state requiring critical thinking, experience, motivation and professionalism (Notarnicola et al. 2016, Smith 2012, Valloze 2009, Potter Tammi 2004). It consists of a profound understanding and a

vision of possible options combined with an analytic ability and a caring presence (Garside & Nhemachena 2013, Smith 2012). It is the capability of a nurse to perform in specific clinical context to promote, maintain and restore the health of the patient (Notarnicola et al. 2016, Potter Tammi 2004).

The difference between the concepts competence and competency in nursing is not clear and they are often used synonymously even if most researcher use competency to refer to the skill itself, while competence is used for the ability to perform the skill and the attributes of the performer (Notarnicola 2016, Calzone et al. 2014, Schroeter 2008, Potter Tammi 2004, Redman et al. 2008).

A few systematic reviews on competence in nursing can be found (Caruso et al. 2016, Cant et al. 2013, Schroeter 2008, Cowan et al. 2005), and an integral model aptly summarizing the results is provided by the most recent viewing competence as a process dividing it in individual characteristics including motivation, self-efficacy, traits and attitudes, educational factors, skills and functional tasks, leading to competent performance. Not only do these internal factors affect how clinical competence becomes evident, but also the health of the organization and the environment. (Caruso et al. 2016).

Scholarly literature on nursing competences from 1981- 2012 has been collected in a bibliometric snapshot (Blažun et al. 2015) showing a peak in research on nursing competence in the period 2005-2008 while since 2012 the interest appears to have declined. Before 2000 the research concentrated on defining competence, assessment, scales, and quality, and thereafter the concept of competence and its significance for education and practice has revived. The latest trends seem to be the new competences in line with the technological and social development.

Clinical competence in nursing

Competence in nursing can be viewed from three perspectives; clinical competence, individual competence and community competence (Nagelsmith 1995). Regarding clinical competence in nursing variation occurs in concepts used; clinical competence, professional competence, competencies, skills, capability, ability, clinical performance. (ANA 2010, Walsh et al. 2009, Axley 2008, ANMC 2010, Cowan et al. 2005, Meretoja et al. 2004). Clinical competence is often used to describe capabilities in nursing (Levy-Malmberg 2014, O'Connell & Gardner 2014), even if most researcher agree that competence is a holistic concept and more than the sum of different competencies (Caruso et al. 2016, Notarnicola 2016, Calzone et al. 2014, Pijl-Zieber 2014). Nagelsmith (1995) argues for a holistic multidimensional definition of competence, and for identifying competencies cutting across all specialties in nursing. Even so in clinical settings performance often assumes dominance and Kim & Kim (2014) defines the needed competence as a capacity to integrate and apply skill, knowledge and decision making to a particular nursing task.

To be able to evaluate a definition on clinical competence needs to be operationalized, which has been done in the development of the Nurse Competence Scale (NCS), based on Benner's domains of practice, breaking down nurse competence into 73 items (Meretoja 2003). The NCS instrument has been used in four continents and in more than thirty studies (Flinkman et al. 2017), and has proved it's usefulness. It presents a more comprehensive picture of the clinical competence stressing both knowledge, skills, attitudes and values in specific contextual situations of practice. It also recognizes the novice nurse being competent in general, while to be considered an expert needs years of experience in the context. (Shearer 2016, Meretoja 2003). The caring perspective in clinical competence manifests in caring ethics (Harper 2009, Memarian et al. 2007) and becomes evident in caring maturing means (Levy-Malmberg 2014). Clinical competence in nursing is competence executed "bed-side".

Clinical competence in nursing education

Nursing education research in Finland has been studied by looking at the doctoral dissertations produced on the topic. Four hundred and fifteen doctoral theses in nursing with focus on nursing education were published 1979-2014. Of these only nine had the content area defined as either competence or competence assessment (Vierula et al. 2015). The trend seems to be towards developing means of assessing competence for specific contexts such as critical care (Lakanmaa 2012), emergency room nursing (Lankinen 2013) and vaccination competence (Nikula 2011). A broader perspective is taken in studies testing and using the Nurse Competence Scale (NCS). Kajander-Unkuri (2015) studied the nurse competence of graduating nursing students, and pointed out the need of a common national level of competence required by graduating nursing students. Wangensteen (2010) again stresses the different experiences of nursing students as their different learning styles affecting their competence, which needs to be acknowledged during education and when entering working-life.

No general international or national standards are available to evaluate the clinical competence of nursing students (Ličen & Plazar 2015). In Sweden attempts to standardize national final clinical exams is ongoing and an instrument has been piloted (Andersson et al. 2013), and in Finland nationwide exams are planned. The general trend shows a move against a holistic model of clinical evaluations as repeated evaluations to capture the development of the clinical competence of the students (Wu et al 2015, Kajander-Unkuri 2015).

Nursing students about to graduate, and recently graduated nurses generally rate their competence as good (Numminen et al. 2017, Gardulf et al. 2016, Kajander-Unkuri 2015, Numminen et al. 2015 Donilon 2013, Wangensteen 2010, Salonen 2007), but the education must include nursing theory and practice suitably linked together by good instructors both in education and practice placements (Bennett et al. 2017). The

challenges both in defining and evaluating clinical competence can be described quoting Harper ; “Competence in professional nursing practice is a product of professional ethics. Professional nursing competence continues to be shaped by historical and contemporary influences” (Harper 2009, ii).

Conclusions

In the literature clinical competence in nursing and in nursing education is viewed from a holistic perspective where clinical competence is defined as knowledge, skills and personal values and ethics, manifested in performance. It is affected by education, and the organization and leadership culture in nursing (c.f. Kajander-Unkuri 2015, Garside & Nhemachena 2013, Smith 2012, Valloze 2009, Axley 2008, Meretoja et al. 2004). Competence as a holistic concept is more than the sum of different competencies (Pijl-Zieber et al. 2014).

Being clinically competent means working evidence based, and it requires the abilities and qualities of the head, the hands and the heart (Eriksson & Bergbom 2017). Evidence-based practice (EBP) and/or evidence-based nursing (EBN) have become concepts for describing ethical, accountable and professional nursing and are indispensable in defining clinical competence. (Mackey & Bassedowsky 2017, Eizenberg 2011, Mantzoukas 2008, Avis & Freshwater 2006). Gadamer (1997) describes evidence as the beautiful and meaningful, getting its value in relation to the proven truth and certainty of science. Evidence in human sciences differs from the traditional concept of evidence that has its roots in a natural scientific perspective. In nursing and nursing education the both perspectives on evidence are combined. Evidence is based on the historical tenets of caring and ethos, but also acknowledges the natural scientific research intended to serve patients in different contexts with different health problems in the best possibly way. Evidence is practice and happens here and now, requiring presence.

Something becomes evident when it is visible and articulated, it appears in the situation, in every caring act, where the true, the good and the beautiful manifests itself and through evident caring becomes visible (Eriksson & Bergbom 2017, 2009).

Evidence is related to different kind of prevailing realities and the empirical world and nursing practice are only part of them. The reality is beyond experiences and often hidden in nursing practice where structures and methods are applied. This is unavoidable but needs to be considered. It is the reality that carries the original caring substance and can be understood only through language, concepts, symbols and metaphors. If the language depletes there is a risk that the reality will become technical and the caring substance invisible (Eriksson 2009). Consonant with the hermeneutical tradition caring needs an evidence concept that unveils the truth and sheds light on the caring situation (Gadamer 1997)

Ontological evidence illuminates caring in thought, words, attitude and deeds, and affects the caring culture and thereby how nursing is performed. According to ontological evidence, contextual evidence is what shows in caring situations in the empirical world, demonstrating clinical contextual competence. It includes the patient perspective, and thereby ethics. It is in the light of human dignity, ethos, that each caring act is shaped. Through ethos practice and theory becomes one and the ontological evidence is visible in practice, nursing becomes an art. (Eriksson & Bergbom 2017, Eriksson 2009)

4 The theoretical perspective

Choosing a theoretical perspective gives the research sight and direction. This chapter describes the perspective taken, the caring tradition (Eriksson & Lindström 2003, Eriksson 2001), and the hermeneutical and human scientific approach in the thesis (Gadamer 1997, 1996, Helenius 1990).

4.1 Ontological starting points

In the field of nursing education, research and practice two traditions exist, caring and nursing (Eriksson 1988). Today most researchers agree that caring is the core of nursing (Arman et al. 2015, Sargent 2012, Dalpezzo 2009, Finfgeld-Connett 2006, Brilowski & Wendler 2005) and this was recognized even earlier (Eriksson 1997, Kyle 1995, Leininger 1993) and as stated by Kyle (1995) it has been so since the days of Florence Nightingale.

Defining caring reveals major variations. It is not reducible to actions, but ways of acting depend on both context and values (Levy-Malmberg 2014, Harper 2009, Fealy 1995). The conceptual analysis of caring by Sargent (2012) concludes that the internal complexity within the concept has led to different interpretations of what it is. The relation to the patient and the qualities of it are in focus, but also expert nursing practice, holistic care, skills and technical performance (Drake 2016, Kazimera Andersson et al. 2015, Papastravou et al. 2012, Rhodes et al. 2011). Morse et al. (1990) identified five categories; caring as a human trait, as a moral imperative, as an affect, as an interpersonal relationship and as a therapeutic intervention. Kyle (1995) described caring as a process including moral, cognitive and emotional components culturally derived, while Roach (1991) defined caring as the human mode of being, an expression of compassion, competence, confidence, conscience and commitment.

The Nordic caring science tradition is rooted in basic assumptions about life and human existence. It takes a philosophical perspective on health and care and is characterized as a human science (Dahlberg & Segesten 2010, Martinsen & Eriksson 2009, Eriksson 2002, 2001).

The systematic caring science, which produces systematic knowledge through basic research on the phenomenon of caring science is the horizon of understanding. Clinical caring science which has been developed as an academic autonomous discipline, at Åbo Akademi University, Department of Caring Science, studies how the ontology, the concepts and the theories, formulated by the systematic caring science, manifests in different clinical contexts, trying to recognize the contextual features. It aims to enhance the understanding of caring and make it evident in clinical contexts. Context refers to an inner dimension, giving context the meaning of connection, relation or coherence, and an outer dimension meaning setting, milieu and environment. The context can be seen from three aspects, as clinical caring science as an academic discipline, as clinical caring science in practice and as the patient becoming in suffering and health. The inner context of meaning is the presence communion with the patient. When clinical caring science meets practice it enters complex structural situations, where different sciences interpret the reality from their own perspective. Practice is what it is; the reflections and choices for actions depend on the ethos. Through ethos the inner and outer structures can emerge and give strength and courage to the nurse to be present for the sufferer, concentrated on him/her and a true caring act can take place (Holopainen et al. 2017, Manookian et al. 2017, Eriksson 2013, Eriksson & Lindström 2003, Lindström & Lindholm 2003)

Research in clinical caring science can start in ethos, core concepts, basic concepts, practice concepts or in a concrete clinical phenomenon, as long as no part is excluded and the results are always dedicated to the patient. The dedication is always somehow contextual. (Rehnsfeldt et al. 2017, Eriksson & Lindström 2003).

Numerous doctoral theses have addressed caring in different contexts. Lindström (1992), Matilainen (1997), Nilsson (2004) and Rydenlund (2012) entered the psychiatric context. Von Posts (1999), Lindwall (2004) and Rudolfsson (2007) enhanced the understanding of caring in perioperative settings. Wiklund (2000) and Råholm (2003) studied caring for patients suffering from heart problems and abuse, and Arman (2003) the caring for women suffering from cancer. The above mentioned doctoral theses are examples in which the ontology and ethos of caring science were made visible in contexts thereby shedding light on some of the complex caring reality.

Clinical caring science as an academic discipline marks the phase when nursing and caring entered the scientific era, and also marked its place as the natural basis for discussions on and the development of clinical competence. Clinical competence can be briefly defined as the competence the nurse needs in encountering the patient “bed-side” in different contexts. (Lindström & Lindholm 2003)

Caring is alleviating suffering in charity, love, faith and hope. Caring is expressed by tending, playing and teaching in a caring relationship (Eriksson 2002), and in the caritative caring theory by Eriksson the concepts caritas, caring communion, the act of caring, ethos, human dignity, suffering and a caring culture are central. (Lindström et al. 2014).

The human being and human dignity

The patient, the human being, is an entity of body, soul and spirit, he/she is intentional, but unpredictable, active, sensible and responsible for his/hers choices and able to express both will and wishes (Eriksson 2013, 2002, 2001).

Preserving human dignity is crucial in caring (Lindström et al. 2014, Edlund 2013a, 2013b) and in professional nursing care (Rehnsfeldt et al. 2014, Gastmans 2013, von Post 1996) and the ethos in a caring culture. Human dignity encompasses behavior, manner, and even status and is related to basic humanity, uniqueness, and individuality. It is used in nursing practice and has a significant role in defining caring. Dignity is based on values and is expressed as absolute dignity and relative dignity. Absolute dignity acknowledges the importance of holiness, human value, freedom, responsibility, duty and serving one's fellow-men. It is a challenge for caring to discover and respect the absolute dignity of the patient (Edlund 2013a, b). Respect for the patients dignity is conditional for good care.

The ontological base and the preunderstanding in this thesis is based the literature review, and on the caring scientific perspective as it has been defined within the tradition built at Åbo Akademi University, Vasa the Department of Caring Science (Eriksson 2001, 1995, 1994, 1887a, 1987b, Eriksson & Lindström 2007, 2003, 2000, Eriksson et al. 2007, Eriksson & Lindström (Eds.) 2003, 2000, Eriksson (Ed.) 2001). The chosen perspective guides the view on the world and the research object.

Transmitting the basic values in nursing should be the aim in teaching both for teachers and preceptors in the educational and the nursing context. The caritative ideal of education has a holistic view, stressing a competence based curriculum with starting points in caritative ethics and ethos (Eriksson et al. 2004).

4.2 Epistemological and methodological starting points

The thesis take an epistemological and methodological starting point in human sciences and hermeneutics as described by Gadamer (1997, 1996). In hermeneutics the preunderstanding as the belongingness to a

tradition and the context plays a vital role in research (Ödman 2016, Gadamer 1996, Reeder 1988, Bernstein 1983).

Since the 1990s there has been a clear humanistic way of thinking in caring science including the hermeneutical dimension, emphasizing the intrinsic value, inherent in the ethos of caring (Eriksson 2002). Hermeneutics can be viewed as a reflection of ethical knowing, focused on understanding things more profoundly and by that again gaining a different understanding in a continuing hermeneutical circle (Manookian et al. 2017). Nursing has its roots in the humanities, since it deals with lived human experiences, it focuses on unique persons and their experiences rather than on trying to generalize how it should be practiced (Rolfe 2015a, Lazenby 2013). The development of nursing requires multiple sources of knowledge and methodologies to guide the practice in a safe way (Hawley et al. 2000), but the core, the ethos, must be present.

The view of knowledge in this study is open interpreting and understanding the world by looking, describing, evaluating and reflecting (Eriksson 2017, 2010, Gadamer 1997, 1996, Helenius 1990). Openness means being open to the texts (material), aware of prejudices, but in the interpretation making use of the preunderstanding allowing horizons to emerge (Gadamer 1997) Hermeneutical understanding redefines the reality and this thesis strives propose a new perception of the concept of clinical competence in nursing education, and ways to evaluate and develop it.

4.3 The sight, the search and the closing

The perspective chosen implies a hermeneutical overall epistemological and methodological approach. Hermeneutics is the world of understanding, interpretation and truth, and seen crucial in making caring science and it's ethos evident (Eriksson et al. 2007). This perspective gives the thesis sight and direction. It is through ethos that

outer structures can be united with the inner context of meaning to a caring culture where clinical competence manifests as good, true and beautiful and true caring occurs in a caring communion.

The preunderstanding of clinical competence builds on a humanistic view of caring science. The core is in the idea of love and charity and the basic category motivating all forms of caring is suffering. Clinical caring science should make the bearing inner structures of the systematic caring science evident in the context of the patient. Encountering the patient is done with respect for the uniqueness and dignity of every human being, acknowledging him /her as an unity of body, soul and spirit. Ethics precede ontology.

The sight is on clinical competence and its' relevance in nursing education. The base is clinical caring science relevant for clinical practice, illuminating the core and ethos of caring science. Caritas and ethos are the elements holding together caring in the most varying contexts and should be part of defining, evaluating and developing clinical competence.

Search implies knowing what to search for, having a horizon (Gadamer 1997). It means illuminating the ontology in contexts and caring relations. Having a sight in the search means not being confused by the contextual variations of clinical competence, but to perceive the basic substance and its basic structure. In closing the ontological and the contextual understanding is combined in a new understanding and the clinical competence takes shape.

The outer context of this thesis is nursing education, which needs to be in harmony with the inner context of caring, making it evident in actions and in defining, evaluating and developing clinical competence.

5 Methodology

This chapter presents the overall methodological approach, hermeneutics, as the aim, material and methods of the sub-studies. The data for the thesis are drawn from two empirical studies and from a comprehensive integrative literature review. The thesis is empirical in nature and the results are applicable both to future research and nursing education.

5.1 Hermeneutical approach

In hermeneutics the preunderstanding as the belongingness to a tradition and the context plays a vital role in research (Ödman 2016, Gadamer 1996, Reeder 1988, Bernstein 1983). Caring science is historical acknowledging the historical roots and values in nursing. According to Gadamer the dialogue between traditions and the present changes understanding. He states that “we belong to a tradition before it belongs to us” (Bernstein 1983, p. 142). The overall approach in the thesis is hermeneutics. The continuing hermeneutical spiral towards a deeper understanding reveals the true nature of a phenomenon, or a concept, as its contextual features (Gadamer 1996).

This thesis concentrates on the nature and general features of clinical competence acknowledging the contextual variations that appear in practice. Understanding and interpreting the material is a movement between the whole and its parts, between theory and practice and between ontology and context, and is guided by the theoretical perspective (Gadamer 1997, 1996). The research has its roots in ethos and the ontology proposed by Eriksson (Eriksson & Lindström 2007). A historical consciousness, a sense of belongingness, and a dialogue between self and history, present and then, enables a fusion of horizons

mediated by language (Reeder 1988). When horizons fuse a new understanding emerges. Gadamer (1997) like Helenius (1990) argues that it is only through pre-understanding that understanding is possible. Gadamer offers no method for inquiry, but only points out the importance of a methodological direction and a systematic approach (Fleming et al. 2003). The hermeneutical movement is an ongoing process moving from preunderstanding through a dialogue with the different texts, theoretically and empirically gained, ending up in a final interpretation where the ethical, ontological and contextual understanding are fused into a new and more profound understanding of clinical competence, and how it can be evaluated and developed in the course of nursing education.

5.2 Methodologies of sub-studies

Study I is a qualitative survey defining clinical competence from the perspective of third year bachelor's students on a degree programme in nursing (n=21), nursing teachers' (n=9) and nursing preceptors' in clinical placements (n=21).

Study II is a comprehensive integrative literature review of 19 original studies. In the review the evaluation of clinical competence during a bachelor's level nursing education is described from the perspectives of what was evaluated, by whom and what was the view on nursing / caring underlying the evaluation, emerging in the concepts and definitions used.

Study III is a hermeneutical observational study of 18 simulated clinical situations with second year nursing students (n= 39) performing in various contexts simulating real life situations in patient care during 3 days. The study focused on how clinical competence can be made visible and developed by simulation.

The aims, materials and methods for data collection and analyses of the sub studies are described in Table 1.

Sub-studies	Aim and research questions	Material	Methods
Study I.	<p>The aim was to look for evidence of how clinical competence shows itself in clinical practice and how this competence is built and maintained</p> <p>.What characterizes a clinically competent nurse</p> <p>-What is experienced as clinical competence in nursing</p> <p>-What contributes to clinical competence</p> <p>-How is clinical competence maintained</p> <p>-What is the relation between clinical competence and evidence-based nursing</p>	<p>Qualitative questionnaires to; all 35 3rd year nursing students (n=21), all 10 teachers in nursing (n=9), all 58 nurses working as preceptors on the three chosen wards (n=21).</p>	<p>Qualitative explorative design</p> <p>Survey – qualitative questionnaires</p> <p>Qualitative content analysis (Hsieh & Shannon 2004)</p>
Study II.	<p>The aim was to critically review the use of concepts, definitions and theoretical perspectives in current evaluation studies about clinical competence in nursing education</p> <p>-How is clinical competence evaluated</p> <p>-What is evaluated</p>	<p>19 original research articles evaluating clinical competence in nursing education on bachelor level</p>	<p>Qualitative explorative design. A comprehensive integrative literature review (Whittemore & Knafel 2005), quality assurance (Cooper 1989) and analyses inspired by Kirkevold 1997 and Elo & Kyngäs 2003</p>
Study III.	<p>The aim was to explore the forms and expressions of clinical competence in contextual simulated situations, and find out how clinical competence could be developed by simulation</p> <p>-How are encountering, knowing, performing, maturing and developing shaped and made evident in simulated situations</p>	<p>Video-taped material (4h 25min) of second year nursing students (n=39) in 18 contextual simulated situations</p>	<p>Explorative hermeneutical observational study inspired by Gadamer 1996, Eriksson et al 2010 and Taylor 2014. Hypothetico-deductive analyses (Føllesdahl 1994)</p>

Table 1. Description of the aims, materials and methods in sub-studies

6 Ethical considerations

Ethics precedes the research process and manifests in the approach to research subjects, the material and the whole process. Ethical considerations are necessary to secure both quality of the thesis as to protect the research subjects. The guidelines for good scientific conduct and general guidelines for research involving human beings (TENK 2012, WMA Declaration of Helsinki 2013) were followed and the researcher was honest, careful and thorough. Ethics in research is no different from normal ethical rules in society and in professions (Eriksson 1995) thus the general ethical code of ICN (2012) forms the background for this thesis.

The thesis comprises three separate studies, all of which have been published, and include ethical discussions and critical reviews of both methodological issues and the limitations. The studies, like the thesis, in entirety are qualitative, and Ramos (1989) describes three problems that may affect qualitative studies. Those are the relation between the researcher and the research subjects, the subjective interpretation of the data, and the design itself. Moreover Field & Morse (1996) point out the problems in conducting qualitative research in an area in which the researcher works or is already known. The problems are related to the validity, reliability and the meaningfulness of the data. (Field & Morse 1996, Ramos 1989) A balanced research relationship will on the other hand encourage disclosure and trust. The personal interaction between the researcher and the respondents is crucial in data collection, and the focus must be kept in mind, likewise the role of the researcher. The researcher's perceptions of field situations are determined by his/her personality and the nature of the interactions (Orb et al. 2000).

The purpose of qualitative studies is to describe a phenomenon from the research subjects' perspectives, while the interpretation usually is made from an outsider perspective, and the research subjects have

shared their information willingly (Field & Morse 1992). The research should be guided by respect for people, beneficence and justice. It requires informed consent, preventing harm and recognizing the vulnerability of the research subjects (Orb et al. 2000).

The aim in this thesis and the studies of which it is composed has been to understand, and to avoid misinterpretations. Data, results, methods, and procedures are reported honestly. Earlier research results are reported objectively and the process has been open and thorough throughout.

In studies on the literature and in the interpretation of texts the difficulties lie in separating the personal understanding from the text and the process itself, and the importance of rendering a plausible account and arriving at a well-supported, systematic and innovative interpretation is crucial (Nyqvist & Kauppinen 2006). In Study II, which is a comprehensive literature review, the literature selected is scientifically relevant for the study (Cooper 1989), and the choice from among the 603 articles found was double-checked by one of the co-authors. The original articles were approached impartially, even if a new perspective was put on the material to open up for new insights.

Clinical competence and ways to evaluate and develop it were studied from empirical, theoretical, practical and educational perspectives. For the empirical Studies I and III research permission was duly applied for and granted from the organisations in which the studies were conducted. This was regarded as sufficient by the ethical board at Åbo Akademi University on 2 February 2015, so no further ethical pre evaluation was needed for the thesis.

All respondents in both the empirical studies gave their consent to participate in the study. The contexts of both studies were familiar to the researcher and the researcher was known to the research participants, but the relations during the research were not personal nor face-to-face. Data collected by qualitative questionnaires (Study I)

was done anonymously, so that the questionnaires were distributed, filled in and returned in sealed envelopes to a specific place, from which they were picked up by the researcher at a given time. In the observational study (Study III) the recordings were done using standard equipment in the simulation center and the tapes were viewed afterwards. In both the empirical studies the categorizations are illustrated with quotations, thereby giving the respondents a voice. The content analyses are described step by step, and as in the hermeneutical approach the caring perspective in the studies is made explicit (Larsson 2005). Gadamer (1997) warns against following a certain method since it affects the openness in the interpretations. Combining hermeneutics with a more classic content analysis, and even more using a hypothetico-deductive method as in Study III, may appear contradictory, however as pointed out by Føllesdahl (1994) hermeneutics can be seen as the hypothetico-deductive method applied on meaningful material. Even at the risk of losing some of the openness an applied method gives the interpretation of data as the whole design of a study rigor. Which is why these choices were made. The categorizations were also double checked by co-authors to ensure the logic in the interpretation and the movement from units of meaning in the text to the categories and main categories or themes.

When the researcher and the research subjects share the same tradition a purposeful understanding and a reasonable interpretation can be achieved (Helenius 1998). Knowing the contexts after having studied nursing, and worked both as a nurse, a preceptor and a nursing teacher enabled the researcher to understand and interpret the data, while adhering to the role of researcher. This thesis is the result of over 40 years' work in nursing and nursing education. The results can be used in evaluating and developing the education and constitute a statement in the debate on nursing education and a possible national exam for nursing students.

7 Findings from the sub-studies

The three studies composing the dissertation view clinical competence from different perspectives in an effort to enhance the understanding of clinical competence in nursing education. This chapter presents a brief summary of the main results of these studies.

7.1 Evidence of clinical competence in nursing education

The aim of Study I was to look for evidence of how clinical competence was viewed in nursing education. To gain a comprehensive and detailed understanding three perspectives were taken, namely those of nursing students, preceptors and nursing teachers , thereby tapping into both the nursing and the educational context. The questions were formulated on how clinical competence is characterized and experienced, what contributes to it and how it is maintained. The relation between clinical competence and evidence-based care was also of interest.

The results showed that clinical competence was seen as encountering, knowing, performing, maturing and improving.

Encountering is the ethical foundation of clinical competence. It describes the relation between the nurse and the patient, where the nurse is responsible, aims to do good and to preserve the patient's dignity. It forms the basis for an ontological clinical competence containing the primary substance in caring, and constituting the culture of nursing. It requires a high morality, carries meaning and is time resistant and thereby transferable from one context to another.

Knowing is being evident and current. It means being able to critically evaluate existing knowledge and to use both nursing, caring and interdisciplinary knowledge in practice for the benefit of the patient. It

implies humility acknowledging one's limitations and asking for help when needed, but also knowing when and how to act independently. Knowing is based on nursing and caring science, but becomes more complex and multidisciplinary in a context, building up a contextual clinical competence.

Performing requires confidence, experience, development of one's person, knowledge and skills to be able to provide patients with individual care in various situations and contexts. Skills are combined with knowledge and the wishes of the patient. The ability to perform and develop during practice, and to acquire the new skills required in specific contexts is gained by trying and practising. The ways of performing vary but the aim is always the same, to give the patient the best possible care.

Maturing entails becoming increasingly pliant, committed, confident and connective to patients, caring and co-workers. It is a process of personal development and can be seen in thoughts, words and actions making the essence of nursing evident in practice.

Improving implies a positive attitude to sharing, learning and teaching. It is about giving and receiving in multi-professional teams. It means having the confidence that helps adopting to new things and ideas, to develop oneself, the working environment and the care of the patients.

In conclusion can be said that in nursing education clinical competence manifests as a process more than as a static stage. It depends on knowledge and experience. The foundation is the ontological clinical competence of which the contextual clinical competence manifests in different context dependent variations. If ontological clinical competence is lacking or is insufficient, the contextual clinical competence may take over and the contextual variations are regarded not as variations but as basic features of clinical competence. The contextual variations then define caring / nursing making general definitions and evaluations of clinical competence both impossible and

unfair. This is why it is important to distinguish between an ontological and a contextual clinical competence. Ontological clinical competence should be achieved during education and therefore needs to be operationalized in measurable categories and expressed in learning outcomes. Contextual clinical competence can be achieved only after experiences in the context. During their education student nurses start to develop their clinical contextual competence based on their practical placements, which means that students on graduation have individual contextual competence profiles. The ontological competence imparted through education however should be the same.

7.2 Theoretical perspectives on the evaluation of clinical competence in nursing education

The aim of this study was to describe the concepts, definitions and theoretical perspectives used in evaluations of clinical competence during nursing education. The research questions concerned how clinical competence is evaluated, what is evaluated and by whom. The results showed variation in evaluation methods, variation in evaluators, but most of all they revealed problems defining what really was evaluated. Emphasis seems to be placed on the evaluation and demonstration of specific skills and knowledge in a performance based system using tools of various kinds. Two out of nineteen evaluations were observation based, two were based on reflective writing, and the remaining fifteen were based on evaluation tools.

The predominance of quantitative ways using tools and checklists or assessment documents can be construed as an attempt at objectivity and standardization. The tools were well structured and designed by members of the teaching staff and researchers, even when students' self-evaluation was in focus. More qualitative ways evaluating clinical competence were seen in the use of videoanalysis, portfolios and

learning contracts. Portfolios and learning contracts covered longer learning periods and described the development of clinical competence.

The evaluator in all but one study was the student, in combination with the teacher the preceptor and peers. In one study the evaluation was done by a standard patient together with members of the teaching staff. Using different methods and different evaluators the three dimensions of clinical competence, the formal, the objective, and the subjectively experienced can be evaluated. Clinical competence is when these dimensions are in balance (c.f. Eriksson 1985). What was evaluated depended on the perspective on clinical competence, how the concepts were defined and operationalized in evaluative terms.

Three themes or definitions, ranging from a holistic, humanistic and ontological view of clinical competence evaluation to a practice or performance-oriented view emerged, likewise two other perspectives. The themes were a) Professional practice in which skills, knowledge and attitudes are combined with values and ethical reasoning. An evident caring perspective guided this theme. b) Clinical skills and reflective practice in which critical thinking, reflectivity, problem solving is combined with self-confidence and self-efficacy. This theme included holistic clinical performance and was guided by a nursing perspective. c) Cognitive, affective and psychomotor skills in which skills are combined with abilities to perform. A nursing perspective guided this theme.

To conclude it can be stated that there is a conscious effort to develop objective ways to evaluate clinical competence during nursing education, but the emphasis put on structured methods risks reducing nursing to tasks and skills. Combining objective evaluations taking cross-sectional pictures of students' clinical competence in specific skills or skill scenarios should be combined with written tests, discussions and self-reflections. Students' own experiences of their clinical competence is important and a starting point in developing it. Nursing is based on nursing /caring science, and in evaluations the

perspective needs to be clear. During education an ontological clinical competence, conferring the basic and transferable competence in nursing, is the natural focus making caring evident in nursing practice. When this pervades the whole nursing process, it is the fundamental component of clinical competence.

7.3 Evidence of clinical competence by simulation in nursing education

In developing clinical competence and facilitating the transition from theory to practice simulation offers a unique opportunity. Numerous studies confirm its benefits (Basak et al. 2016, Flott & Linden 2015, Dearmon et al. 2013, Reeve et al. 2013, Jensen 2012, Thomas & Mackey 2012, Yuan et al. 2011, Kameg et al. 2010, Gordon & Buckley 2009, McCallum 2007), which is why simulation was also used in Study III. With the pre-understanding of clinical competence as encountering, knowing, performing, maturing and developing, a hypothesis was formed that the same categories would emerge in simulated situations. Viewing simulation as a play the aim of the study was to test the hypothesis by exploring the shapes and expressions clinical competence took in the simulated situations. Furthermore the aim was to find out if and how clinical competence could be developed by simulation.

Even if students in simulated situations perform in a role, simulation is a way to bring real life into learning situations. The students' performances depended on how confident they were and how comfortable they felt in the situations. According to their knowledge and skills they were managing the situations actively participating, volunteering and wanting to engage in nursing and caring activities. They managed equipment and procedures, worked together with peer(s), consulted and delegated. In encountering the patient the students' were present, they showed interest, listened to the patient and acted according to the patients' problems and needs, wanting the

best for the patient. Maturing and development were less apparent in single scenarios, but showed when the students asked questions, shared knowledge, verified with peers, consulted and proposed courses of action. They anticipated and made preparations based on observations and knowledge and by learning from the situations. In helping the patient on the way from suffering towards health three basic plots were identified: 1) Doing as performing and knowing. The students' actions were evidence based and responsible, they managed technology and demonstrated skills, felt confident and comfortable sharing information and working together with others. 2) Being as encountering. The students were present, interested in and confirming the patient by listening and responding. 3) Becoming as maturing and developing. The students' were co-acting, learned together and developed. All plots as main categories, shapes and expressions had their negative counterparts where students were uninterested, passive, withdrawn, isolated and uncomfortable due to lack of knowledge, skills or self-confidence.

Development of clinical competence was seen from the first to the last case performance during a day. Watching others simulate and participating in debriefings made the students more confident and adept. Being aware of each student's knowledge and skills the teachers designed the "case". They facilitated the situations and depending on the student's performance the situation was made more or less challenging, giving each student the opportunity to reach his/her potential. On the students' ways towards clinical competence the teachers simplified or complicated the scenario, giving or withholding information, and continuing or ending the situations.

In conclusion can be said that in well-designed simulation training the clinical competence and its' various aspects can be made evident and thereby both evaluated and developed. This requires that the students identify with the roles and let themselves be influenced by the situation. Simulation can be seen as a play, but even so embodies all the elements and possibilities found in real clinical situations, requiring the same

clinical competence to deal with them. The challenge lies in encountering the suffering of the patients with compassion, and here lies the ethics of caring and here the caring abilities really show.

8 Discussion

The discussion synthesizes the results and reflects on the knowledge gained and the methodological issues. It ends with conclusions and recommendations and ideas for further research on the topic.

8.1 Discussion of the results

The thesis aimed, from a caring science perspective, to define clinical competence, and describe how it can be made visible, evaluated and developed during nursing education. The new understanding of the clinical competence is based on both empirical and theoretical research, and offers the perspectives of both nursing students', teachers', and preceptors'. Following the hermeneutical tradition the concept is viewed both from an historical and a contemporary perspective and both a caring and a nursing tradition is acknowledged. Clinical competence is a praxis concept, and through praxis and ethos the caring space is created. In that space practice becomes art, and more than mere techniques and procedures. (Eriksson & Bergbom 2017)

Other possible perspectives on clinical competence would have been to include patients, but asking patients to evaluate clinical competence is not without complications. The patients lack the knowledge to evaluate competence, they are unwilling to do so as they are reluctant to criticise nursing actions or the nurses, and mostly they trust the technology and the nurses' knowledge. (Sharp et al. 2016, Calman 2006) When asking patients what they desire, they mention individual care, compassion, and true concern for their welfare (Eriksson & Svedlund 2007, Attree, 2001). They want to actively participate in their care, a connectedness with those caring for them and to have their needs met (Tobiano et al. 2016, Marshall, Kitson, & Zeitz, 2012). They want staff to be aware of their needs and to meet these needs (Marshall et al. 2012, Eriksson & Svedlund 2007), so

even if these perspectives are not included in the thesis, the patients' views on clinical competence seems well in line with more "professional" definitions and views.

Clinical competence in nursing education

The results show that clinical competence becomes evident as encountering, knowing, performing, maturing and developing. The literature review showed that other words for clinical competence are used, such as professional competence, competencies, skills, capability, ability and performance, and that capability and performance are used almost synonymously with clinical competence. (O'Connell & Gardner 2014, Caruso et al 2016). This illustrates the difficulties involved in defining the concept. Defining it as encountering, knowing, performing, maturing and developing make it more operationalized. It acknowledges that clinical competence during nursing education should be viewed more as a process and a development towards becoming clinically competent (c.f. Benner 1984), than as a static stage. Seeing it as a process also means that it will be defined differently at different stages in the development of the individual student.

An ontological and contextual clinical competence was identified. The nursing world seems to be becoming more and more contextual, new competencies are added, and especially in the development of advanced nurse practice the influences from the medical paradigm are strong, (Kruth 2013, Altersved et al. 2011) as in the specialised contextual studies offered after completing a nursing degree (Rautianen & Vallimies-Patomäk 2014). A new context, the internet, is increasingly used, imposing new demands, and the definition of clinical competence as the competence executed "bed-side" acquires a new meaning. Technology makes patients more active and independent in caring for themselves'. Changes and reforms in both society and education are continuous challenges requiring new forms of multi-professional co-operation and extensive social competences.

In a world of changes it is important not to lose sight of the very core of nursing and what makes nursing what it is. Students on graduation have a legal right to practice nursing, but the clinical competence each graduate possesses may vary considerably. For nursing education to confer a clinical competence, covering and preparing for all possible contexts is impossible, thus stress should be placed on developing the ontological competence ensuring that all graduates have at least the same basic competence, which is constant and transferable between contexts.

Evaluating and developing clinical competence in nursing education

In evaluating clinical competence various perspectives need to be considered. As Study II shows evaluations of clinical competence are conducted using many different methods and the perspectives on clinical competence and the definitions guiding these evaluations vary.

A division in the formal competence conferred by a degree certificate, a subjective competence experienced and a competence witnessed by others is feasible (c.f. Eriksson 1985). The formal clinical competence is tied to outer structures and to acting in a professional role, the experienced competence has to do with confidence and the familiarity of the context, and is therefore contextual. The real competence is ontological, and sees caring as the core of nursing, with its' roots in ethos, which throughout all times has been formed by the idea of love and charity. (Eriksson et al. 1999)

The three dimensions of clinical competence can be illustrated in Figure 3 as follows.

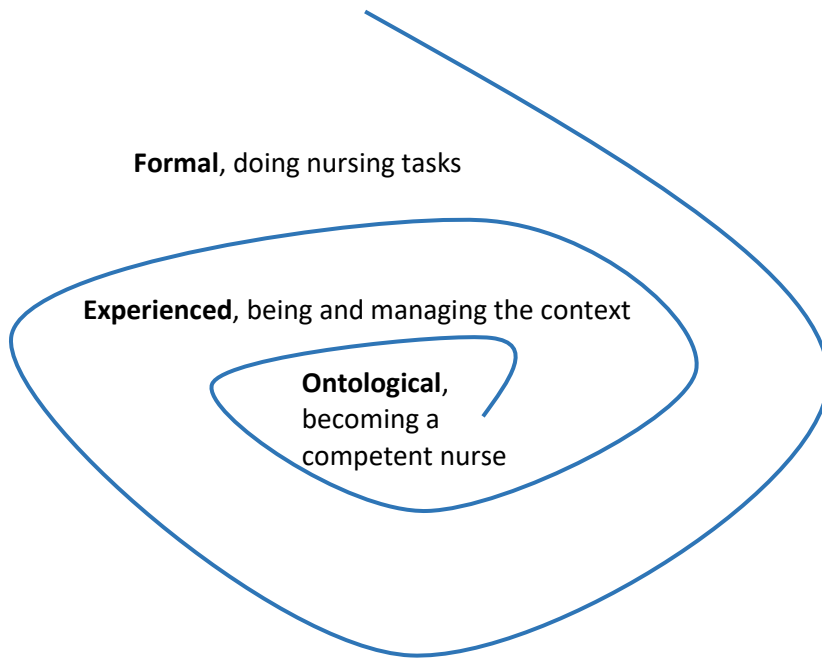


Figure 2. Ontological, experienced and formal clinical competence

The ontological clinical competence, with caring as its core, carries the ethical potential, and illustrates the process of becoming a competent nurse. When moving into context the core is deduced into reality. It will be translated and tied to meaning by experiences in practice. Practice is what it is, and being there for the patient requires more than just managing situations and actions, it requires a certain attitude, an ethos, making the nurse present for the patient, focused on him/her transferring the good in a caring act. The ontological clinical competence must be developed so it guides both the experienced and the formal competence, that otherwise can become mere fulfilment the nursing tasks. (Eriksson 2013, Eriksson & Lindström 2003)

There seems to be a gap between nursing education and managing clinical skills (c.f. Bennett et al. 2017). Fresh nursing graduates, even if they feel they have the clinical competence needed (Numminen et al. 2017, 2015, Kajander-Unkuri 2015, Donilon 2013, Wangensteen 2010) often lack the

expertise to provide high quality care in contexts. As Benner (1984) pointed out to reach the level of expertise or even clinical contextual competence takes years of practice. Research has moreover shown that experiences in one context render clinical competence more profound, while experiences from many different contexts make it broader, and facilitate encountering new unexpected situations (Donilon 2013). What then is the competence achieved or that needs to be achieved during education? What should be evaluated and how?

The ways of evaluating clinical competence are many, but as in the case of defining it, the ways of evaluating it are becoming contextual or focusing on demonstration of skills, as often in use the of instruments such as the Objective Structure Clinical Examination, OSCE. (Aronowitz et al. 2017, Johnston et al. 2017, Traynor et al. 2016, Ličen & Plazar 2015, Cant et al. 2013).

Research shows that from the perspective of practice, nursing education does not prepare students adequately for different clinical contexts, and that the expectations on recently graduated nurses are unrealistic and too high (Bennett et al. 2017). Nursing teachers usually evaluate graduating nurses clinical competence significantly higher than do nursing administrators. The closest correspondence between the two evaluator groups can be found in direct patient care, ethical work and conduct and professional skills. (Numminen et al. 2014) This could be due the expectations in the contexts, and the perspectives dominating the evaluation. In education emphasis is placed on the core competences needed in nursing, which applies to both knowledge and skills, and these are general and transferable between contexts, while in nursing the expectations often include contextspecific clinical competences. Ethics and ethical conduct and development of the personality are and always have been an important part in the education and professional practice of nursing. Both professional ethics based on legislation, national agreements and professional codes (Kangasniemi et al. 2015) and caring ethics evident in the relation to the patient (Eriksson ed. 1995) have their natural place.

During education there are no opportunities for individual students to gain experiences from all different contexts. To be fair and give equal opportunities for students to succeed, evaluations during education should concentrate on the ontological competence that gives a solid basis for entering different contexts with confidence and courage. The potential to mature and develop, as means for this are the ingredients for successful professional life, thus evaluations should be done repeatedly considering the development.

As shown in Study II, in almost all cases one of the evaluators of clinical competence has been the student, and most instruments are designed for self-evaluation. Students need to be taught to realistically evaluate their clinical competence. An imbalance between real and experienced competence will impair clinical performance. With an unrealistically highly experienced competence the student may endanger patient safety, while underestimated experienced competence will inhibit students from making decisions and acting for the benefit of the patient. There is a need for both self-confidence and self-efficacy for students to be able to make decisions in the care of the patient (Fuvic 2017, Chesser-Smyth & Long 2013).

As shown in Study III, a good aid in the transition from education to practice, and an aid in learning to evaluate one's performance is simulation learning. It increases self-confidence and alleviates anxiety, while also improving both knowledge and skills, and the debriefing situations afterwards develop skills in self-evaluation. (Basak 2016, Dearmon et al. 2013, Reeve et al. 2013). How well simulation learning works still depends on the situation and how comfortable the students feel and how well they can let themselves be involved and play. To play presupposes trust and a caring learning relation, bearing the same qualities that can be found in a clinical caring situation. The same ethos guiding caring, should be evident in the teacher in simulation. The ethos should be evident both in teachers and preceptors, who function as role

models for the prospective nurses. They should be the bearers of the tradition and pass it on.(Matilainen & Eriksson 2004)

Clinical competence is more of a process than a static stage. It is a movement between different contexts. The contexts can be seen as inner, relational contexts or as outer structures. In contemplating the acquisition of clinical competence this needs to be considered, and the idea can be illustrated by the following figure.

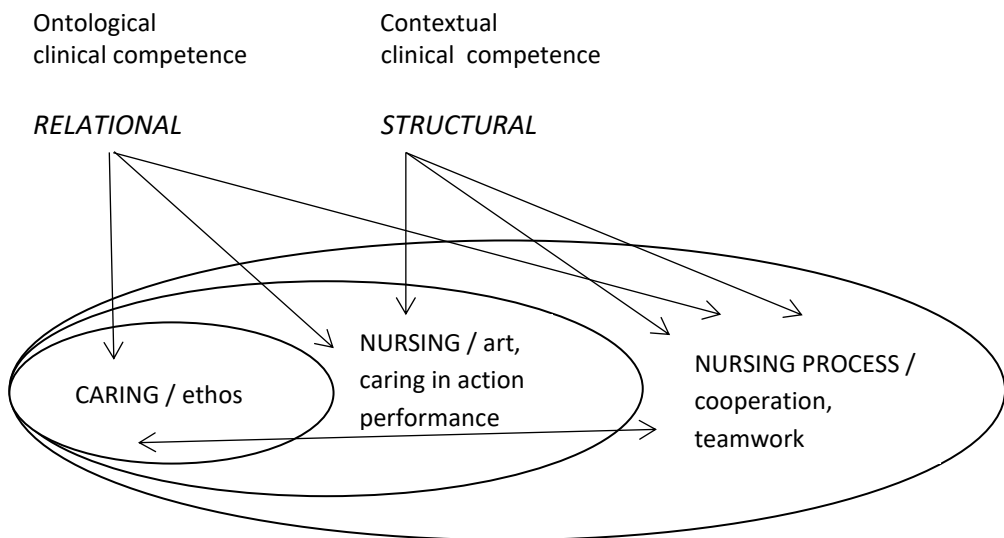


Figure 3. Clinical competence in nursing education

The inner, relational context is the starting point. Encountering the patient in a caring relation is an ethical act, expressing the inner nature of caring, love and charity. Caring exists in a caring culture, permeating the outer contexts, the environment for nursing and the nursing process. It gives meaning and direction and also defines the contextual basic features that are general and independent of outer structures and different contexts. Nursing is caring in action but also contains structural features specific for the context. Structures depend on environment (space), time, resources and procedures. The nursing process is characterized by cooperation and teamwork and the nurse functions in different roles, as independently caring, assisting, administering and documenting. The

quality of the nursing process depends on the presence of caring / ethos, safeguarding the dignity of the patient.

To be able to develop clinical competence during nursing education all aspects of clinical competence need to be considered, but also it needs to be acknowledged that emphasis should be placed on basic /ontological knowledge, skills and competence. Much is learnt in context after graduation and requires years of experiences. Students need the caring scientific base, knowledge and basic nursing skills. They need to get tools to develop and evaluate their competence and they need the attitudes and ethics for efficient teamwork. The complexity of clinical competence can be illustrated as follows;

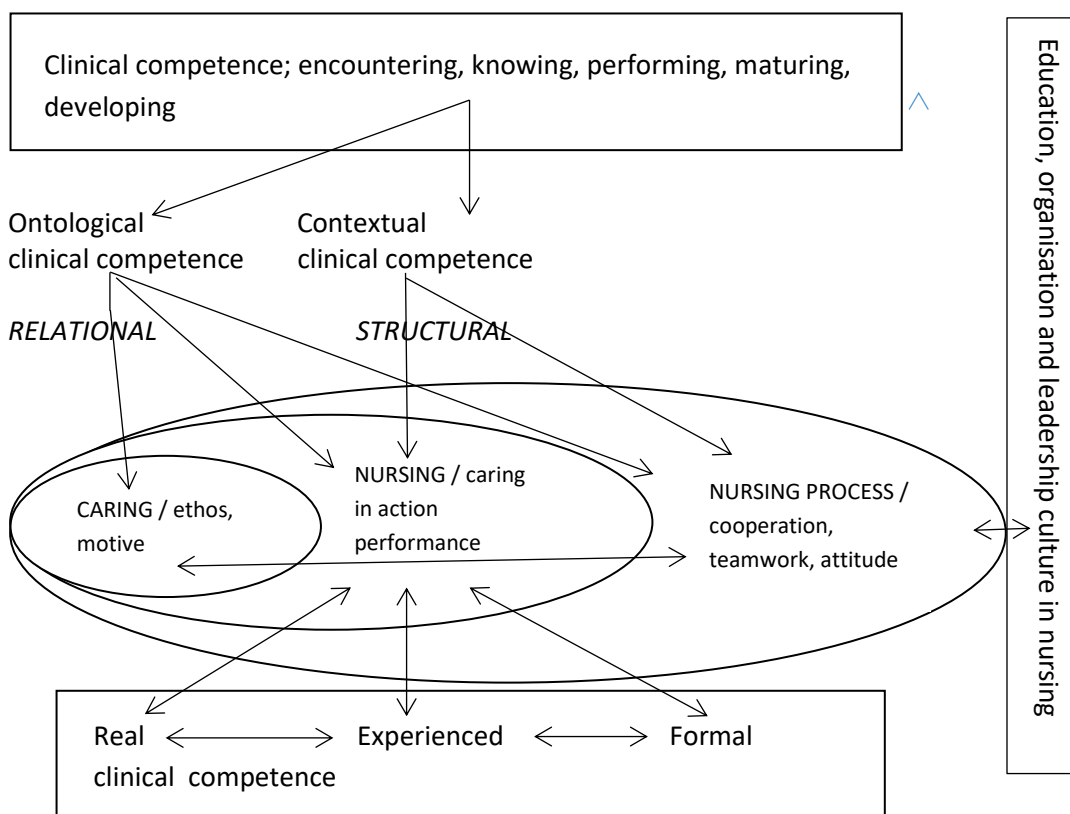


Figure 4. The complexity of the concept clinical competence

As the figure shows, not only individual characteristics of the student but also external factors such as education, organization and leadership culture influence the development of clinical competence. The relational and structural features of nursing get their substance from ontology and the specific contexts and the nursing process is co-operation and teamwork to the benefit of the patient. To practice a formal competence is needed but to be successful there needs to be both an experienced as a real clinical competence.

To be clinically competent is a process and requires a need to develop, and to update knowledge and skills in all fields of nursing is crucial. A changing world, new structures in health care, long distances, an aging population among other things is creating a lot of new challenges. The answer to some of the problems is digitalization and eHealth. The encounter with the patient might no longer always happen face-to-face, but mediated by internet. Internet mediated care has proven its' popularity and effectiveness. Development cannot be stopped and computers can gather and distribute health information fast and in that sense solve problems, but as Professor Emeritus Gary Rolfe points out: "computers are not communicative, close, empathetic and kind" In a technocratic and economic-oriented health care system the humanistic core and the historical values should not be forgotten and digitalization needs to be on terms with this (Rolfe 2015b). An image on a screen, even talking and moving in real time, answering the patient's questions, is still only an image. The internet has become a new space for caring, what does it require of the nurses? What does a good encountering on the net look like? These are not tomorrow's but today's questions for both nursing practice and education.

8.2 Discussion of the methodology

This chapter discusses the results related to the hermeneutical approach. The discussion is structured by the criteria of Larsson (2005, 1998, 1994) looking at the quality of the whole thesis, the quality of the results and the validity, in combination with Tracy's (2010) criteria for excellent qualitative research and Yardley's (2011) principles for evaluating qualitative research. The methodological approaches in the respective sub-studies were discussed and reviewed before publication, and will be addressed here only briefly.

Overall quality of the thesis

Clinical competence is the core of nursing education, and in times of curricular reform, the reorganization of social and health care and the rapid development of health technology, discussions of clinical competence are both relevant and timely.

The perspective of this thesis was presented in Chapter Three, placing the thesis in the context of caring science with its roots in the humanities. The preunderstanding of the caring scientific perspective and caring as a phenomenon pervade the whole thesis giving it sight and direction, and enabling understanding (cf. Gadamer 1997).

The internal logic has to do with the relation between the research questions, data collection and data analysis and the coherence between that and the literature (Yardley 2011, Tracy 2010, Larsson 2005). This relation in the sub-studies is tested, and tying the sub-studies can be viewed as a puzzle where the different pieces can be put together to make a meaningful interpretation. Looking at clinical competence from the perspective of students, teachers and preceptors, exploring the definitions and perspectives guiding the definitions and looking at ways of evaluating clinical competence, so as in a holistic way to make it evident and possible

to develop and evaluate, are the pieces in the puzzle. Bringing these parts together into one whole leads to a proper understanding (Debesay et al. 2007, Gadamer 1997), and gives a more comprehensive view of what is studied. The aims of the thesis were achieved.

Clinical competence is a multidimensional concept hard to define comprehensively, as stated by Watson et al. (2002). To be able to evaluate and develop it, however a definition is still needed. Even if the search was not for complete knowledge, this thesis contributes to a more detailed view of clinical competence as illustrated in Figures 2, 3 and 4. At the same time it is argued that the existing definitions depend on the perspective of caring or nursing and that there is indeed a basic / ontological clinical competence and a contextual clinical competence based on that which shows variations depending on different contexts.

Interpretations should be mediated so that understanding can be reached and how the interpretation has been made should be explicit and openly presented (Ödman 2017, Yardley 2011, Tracy 2010, Larsson 2005, 1998). The hermeneutical interpretation is supported by three different interpretive strategies used in the sub-studies namely, inductive content analyses, an integrative comprehensive literature review and a hypothetico-deductive method applied to meaningful material. In all the studies an effort was made to produce clear tables clarifying the process from the manifest material to the interpretation, and the interpretation was illustrated by original descriptions or quotations. The aim has been to listen and take the texts and observations of the respondents seriously, to be open and curious and engaged (Yardley 2011, Debesay et al. 2007). The three sub-studies were reviewed by the international scholarly community, thereby fulfilling the need for communicative validity (Larsson 2005, 1998). All sub-studies are based on different material and different methods were used forming the final synthesis. Even if the sub-studies apply different methods they adhere to the hermeneutical tradition.

In Study I data was gathered using a qualitative questionnaire, the respondents were students, teachers and preceptors of nursing, thereby meeting the requirement of triangulation (c.f. Tracy 2010). The data was analysed by inductive content analysis. In content analysis trustworthiness is based on the preparation phase, the organisation phase and the reporting phase (Elo et al. 2014). In the preparation phase data collection, sampling and units of analyses are considered. Choosing a qualitative questionnaire with open questions was deemed appropriate, enabling anonymous and freely formulated answers. Even if the response rate was low, especially concerning the preceptors, 21 responses were viewed as sufficient. All nursing students in their final year, all nursing teachers and all preceptors in the three units engaged in the study were invited to participate. The unit of analysis was words and sentences describing clinical competence, ways of developing and ways of maintaining clinical competence, and the relation between clinical competence and evidence-based care. In the organisation phase the categorisation is illustrated in tables, the process is manifest and transparent. The interpretation was made within the theoretical frame of caring science, and the preunderstanding coming from that and from the experiences working as a nurse, preceptor and nursing teacher and the familiarity with the contexts. The reporting was done systematically using quotations, the categories cover the data. Since the empiric data was gathered in Swedish and Finnish and for publishing of the studies it was translated to English potential bias and information lost in translation needed to be addressed. The relationship between language, researcher and respondents is as crucial as the choice of words expressing an idea, opinion or a statement even if many researchers leave issues of translation unmentioned. (Temple & Young 2004). The translation was done by the researcher after a first interpretation and understanding in the original language, following the idea that translation should be done as late as possible in the process (Temple & Young 2004). An effort was made to find the best possible translations, acknowledging that English is not the researcher's first language. The language was checked by a native speaker, who also made some suggestions for the translations.

Study II used a comprehensive integrative literature review. This was chosen since there seemed to be a change in the trends evaluating clinical competence towards the use of specific instruments such as the Objective Structured Clinical Evaluation tool (OSCE) (Aronowitz et al. 2017, Ličen & Plazar 2015, Cant et al. 2013). An integrative review makes it possible to combine research with different methodologies giving a comprehensive picture of the phenomenon (Whittemore & Knafl 2005). The data from the 19 original articles were reduced and displayed in the form of tables according to the research questions, making the result more readable, logical and conceptually clear (Torraco 2005). The process was described making it transparent from choices of literature up to the results, which in their fragmentary state aptly described the situation at hand.

In Study III a hermeneutical observational study was chosen combined with a hypothetico-deductive method for the analyses. The categories describing clinical competence in Study I were used as a deductive model. Situations of various types were recorded so it was possible to view the situations in the light of one another and the idea of the hermeneutical circles was followed (c.f. Nåden 2010). The first circle started from an intuitive holistic vision of the story in the simulated cases, followed by the hypothetico-deductive circle where the evidence of clinical competence became visible. Returning to the whole story to check the logic and meaningfulness of the categorization was followed by the last circle combining the new understanding with the story and the actions in a final understanding. The way from expressions and shapes of clinical competence to the deductive categories is shown in a table, illustrating the analyses, the logic and making the interpretation more transparent. Since the interaction between nursing students and the mannequin in the simulated situations was studied game theory was also used and the scenarios were viewed as a play. As Føllesdal (1994) points out no human actions we seek to understand can be studied without use of a game theory (c.f. Gadamer 1997).

The three sub-studies follow a logic sequence and the hermeneutical circle is closed in using the definition of clinical competence from Study I as a model for the hypothetico-deductive analysis in Study III.

A criterion in hermeneutics for a proper understanding is bringing together parts into one whole, which was done. The knowledge gained is not complete, and can be revised, but in practical research it is necessary to reach an endpoint (Debesay et al. 2007).

The ethical value of the thesis has to do with general ethical principles that concerns research involving human beings, with how well the conclusions are based on the results and how thorough and truthful the process has been conducted (Larsson 2005, 1998) The ethical considerations are addressed in Chapter Six, and the researcher endeavoured to follow good scientific practice. The results have been presented truthfully and with an effort to make the processes in each study transparent and easy to follow. The conclusions drawn are based on the results. The limitations of the studies are addressed, but even so the richness of the empirical material and the support from prior studies make the results reliable. Tracy (2005) mentions exiting ethics referring to how the researcher leave the scene and shares the results. The results have already been disseminated in the three published articles and they do not contain material that could be hurtful to individuals or groups of people.

Quality of the results

The quality of the results is assessed by the richness of meaning, the structure of the thesis and theoretical contribution (Yardley 2011, Larsson 2005, 1998).

Effort was made to balance between the richness in meaning and a clear structure in the studies. In empirical Studies I and II the phenomena are impartially and fully described as they appear either in the written responses or in the recorded observations without changing anything or moving too swiftly to abstractions or conceptualizations. Justice was also

done to the descriptions in Study II before moving to interpretation and synthesis.

The perspective chosen in caring science gives the studies rigour and holds them together enabling the hermeneutic movement towards a more deep understanding. The tables used in the presentations of the study findings give structure to the studies, as do the figures in the summary, and the synthesis are thick, exact but abstract descriptions of the phenomenon.

Theoretical contribution or collective theory building is important in research, and theory refers to discovering patterns and features in the data as the ability to relate to or change earlier theory (Yardley 2011, Larsson 1998). This thesis proposes a definition of clinical competence, which is well in line with earlier definitions, but more operationalized, decontextualized and with a clear perspective. Thus it contributes to the existing theory. The thesis also contributes to the discussion on evaluating clinical competence, identifying the patterns and perspectives as the definitions underlying the evaluation methods in use. The thesis tests the new definition of clinical competence proposed, at the same time showing the possibilities evaluating and developing clinical competence in simulated situations.

In the summary clinical competence is viewed from different angles, putting together both existing concepts, perspectives, internal and external factors influencing both experience of and actual clinical competence and thereby yielding a comprehensive and complex picture of the concept.

Validity

Validity in qualitative research is depending on the discourse criterion, heuristic value, empirical anchorage, consistency and the pragmatic

criterion (Larsson 1998). Yardley (2011) adds to the criteria sensitivity to context and commitment.

The discourse criterion concerns how the results correspond with the earlier and ongoing research on the topic. This thesis is a contribution to the ongoing scientific discussion of clinical competence, the problem of definition, of evaluation and how to develop it. Each of the studies have been published in scientific journals, have been reviewed and accepted, and have already been quoted in recent research on related topics. The studies make a meaningful contribution to the existing knowledge, thereby also fulfilling the heuristic value criterion, by proposing a new definition of the concept clinical competence and by structuring some of the complexity encountered in trying to evaluate and develop it. The chosen perspective, caring science and clinical caring science, also adds to the heuristic value with a specific view of clinical competence. Tracy (2010) states that heuristic significance exists when it awakens curiosity and inspires new research, and as mentioned the published articles have been quoted.

Empirical anchorage describes the relation between reality and interpretation (Larsson 2005). A reality and a text can be interpreted in different ways. In these studies the interpretation is dependent on the perspective, which gives all studies both sight and direction. In both the empirical studies (I and III) the empirical base is sound. The data is rich in meaning, even if the context is restricted. The familiarity with the contexts in which data was gathered afforded a good preunderstanding and enabled realistic and truthful interpretations, sensitivity to the context and engagement (c.f. Yardley 2011). The movement between the three languages Swedish, Finnish and English may have affected the interpretations, especially in the translation into English, regarding Swedish and Finnish there were no problems due to the author's bilingual background and upbringing. In the translation into English dictionaries were much used, in the search for the best possible translation of a concept, and as pointed out by Gadamer (1997) translation and choice of word requires interpretation, and can enrich the final interpretation. At

least the movement between the languages opened up for new insights in the process of writing this thesis.

Consistency is important in hermeneutics. It concerns the interplay between the parts and the whole in the interpretive process (Debesay et al. 2007, Larsson 1998). Consistency deals with coherence, the part/whole criterion the agreement of data with the interpretation. A good interpretation makes reality more understandable and at the same time reality supports the interpretation (Ödman 2017, Yardley 2011). In the thesis the interplay between the parts and the whole can be seen in the studies as in the way all three are linked to a synthesis in this summary, where the studies are parts fitting into the same big puzzle.

The pragmatic criterion refers to the value of the research for practice, and among other things concerns how the results are communicated to practice and how they will affect practice (Larsson 1998). In qualitative studies generalisations are not the aim, the hermeneutical interpretations do not claim to present the truth, since the interpretations are linked to perspective and situations (Debesay et al. 2007). The small samples and limited contexts inhibit generalisations. Nevertheless the view on clinical competence has been widened and the value of using simulation in both evaluating and developing clinical competence has been strengthened (c.f. Yardley 2011)

The hermeneutical circle can be seen as three layers of circles, the inner one being the most basic illustrating the movement between parts and the whole and between preunderstanding and understanding. The second circle is the movement between interpretation patterns, the text, dialogue and different interpretations. The outer circle offers choices of themes or combinations of fruitful themes (Alvesson & Sköldberg 2017, 197). In this thesis the inner circle is accentuated. The preunderstanding shapes the vision of the whole against which the parts are understood. In the second circle interpretation is reached by a means of a dialogue between the preunderstanding and the texts. Patterns of interpretation can be seen in

the sub studies. Reaching a final interpretation is by fusion of horizons representing the outer circle.

8.3 Conclusions, suggestions for further research and implications for nursing education

Clinical competence is and will continue to be a concept hard to define. Still being the core of nursing education it is important to find good and impartial ways to evaluate it and also to develop it. Depending on the perspective when viewing things, different aspects emerge. In this thesis the perspective is caring science, and caring is seen as the core of nursing. Clinical competence in nursing is thus seen to be based on caring and the ethos becomes evident in nursing practice. Caring is relational and executed bed-side, giving clinical competence it's basic shape. Nursing reality is a complex world, requiring specific competences depending on the different contexts, hence it is important to differ between ontological and contextual clinical competence. Even if a nursing student through simulation learning and practical studies gain insight in some contexts, the experiences will vary between students. In planning and evaluating education it is therefore important to concentrate on giving students ontological and basic clinical competence that is transferable and usable independent of context.

Finding a comprehensive and universally accepted definition of clinical competence seems impossible (Shub 2014). Instead of putting effort into that, it is better to be explicit about the definitions and acknowledge the different perspectives giving clinical competence its' meanings. Definitions and perspectives underpin each evaluation and evaluation method, and guides nursing education thus they need to be made explicit.

The world of nursing is changing, technology is gaining ground and a new context, the internet is taking shape. Nurses are increasingly assigned

specific duties and work as advanced practice nurses, being strongly influenced by a medical paradigm. This is the future, and development is important, but as always in times of change ethical questions and questions about human values and human dignity rise. In times of change it is important to remember the historical roots and acknowledge what makes nursing what it is and what motivates the nursing / caring science. It is clinical caring science that defines clinical competence. Clinical caring science enables a deep understanding of the nursing reality, highlighting the inner core of caring, and if this is forgotten there is a risk that the contexts take over and the caring substance becomes shattered and shallow.

There are many ways in nursing education to evaluate and develop clinical competence, but one needs to know what is evaluated and what is developed. It seems quite clear that to get a picture of the clinical competence of the student different evaluative methods need to be deployed, and more important than to cross-sectional picture of clinical competence in a certain situation, is perceiving the potential to mature and develop in the student, grasping the process of becoming clinically competent. Capturing both the real and the experienced clinical competence necessitates students' self-evaluation, and more emphasis should be placed on developing students' self-evaluative abilities during their education.

Simulation has proven to be a good way both to evaluate and develop clinical competence in real life-like scenarios. Still one needs to consider that not all students feel comfortable in the situation, why also other methods should be used. With simulation part of the clinical practice can be replaced (Kelley et al 2016, Hardner 2015, Nestel & Bearman 2015). It offers fair and equal opportunities for students to learn, and solves some of the problems with big cohorts and heterogeneous student groups, but it can never totally replace practical training where the students encounter the suffering of a real patient.

To conclude;

- Clinical competence is a process of encountering, knowing, performing, maturing and developing, it has its base in caring, making ethos evident in clinical practice
- There is an ontological clinical competence which is relational and transferable and a contextual clinical competence which is more structural and context bound
- Evaluations of clinical competence should be made with a clear perspective and a definition of what is evaluated, using various methods focusing on both objective and experienced competence. Continuous evaluation and development should be part of reaching and maintaining clinical competence
- The evaluation and development of the clinical competence can be accomplished by simulation learning in real-life like situations with well-designed scenarios during nursing education. Simulation can partly replace practice and contributes in facilitating the transition to clinical placements
- Emphasis during nursing education should be placed on developing ontological clinical competence while contextual clinical competence is developed in practice and requires experience
- Clinical competence flourishes and develops in a caring culture. Students cannot be trained in it, they must be educated

This thesis is based on material from nursing education and covers the views of students, teachers and preceptors, and offers a broad picture of clinical competence. At the same time new questions arise and there are many things that need to be addressed by further research.

In attempts to make a final national exam for graduating nurses one can consider further what should be evaluated, and how. Can a computer based test really cover what needs to be covered? Another question is which perspective underpins the national and the EU competence descriptions for nurses? The contexts are given much room in the

curricula and it would be good to consider if ontological clinical competence is given the value it deserves.

Simulation learning is a good way to evaluate and develop both ontological and contextual clinical competence and prepare for practice. Yet it seems that it does not suit all nursing students, thus it is important also to use other methods and carefully evaluate how much of practical placements can be replaced by simulation.

This thesis contributes to the discourse on clinical competence in nursing education. It has hopefully opened up some new insights into the complexity of the concept, but does not claim to offer any final solution. The question arises, should the concept of clinical competence from a caring perspective be renamed clinical caring competence?

Some implications for nursing education can be derived;

- The perspective(s) guiding nursing education should be made explicit in curriculum design
- Emphasis in nursing education should be placed on developing an ontological clinical competence, longer and fewer practical placements could contribute to this
- Evaluations of clinical competence during nursing education should be made continuously with different methods, and self-evaluation should always be part of the evaluation
- Caring and learning are parallel processes thus developing and maintaining a caring culture in teaching and learning is important for developing a caring attitude

“The most important role of a leader is to set a clear direction, be transparent about how to get there and stay on the course”

Rosenfeldt (https://www.brainyquote.com/quotes/irene_rosenfeld_520482)

9 Sammanfattning

Klinisk kompetens- kärnan i sjukskötarutbildningen, Gun-Britt Lejonqvist
Nyckelord; klinisk kompetens, sjukskötarutbildning, vårdvetenskap, hermeneutik

Introduktion

I en autonom vårdvetenskap är begreppen grunden för all vetenskaplig verksamhet. I avhandlingen uppfattas klinisk kompetens som ett praxis begrepp och det granskas utifrån sin innebörd samt hur det har värderats och kan värderas och utvecklas under sjukskötar-utbildningen.

Avhandlingen tar sin avstamp i den diskussion som pågår gällande utbildningen, initierad av Bolognaprocessen och på den följande reformer (Collins & Hower 2014, Lahtinen et al. 2014, Bologna Declaration 1999). Den nationella kompetensbeskrivningen för sjukskötarutbildningen, omfattande 180 sp, avsätter 105 sp för den kliniska kompetensen och betonar vårdarbete, naturvetenskaplig kunskap och kontextuell kompetens (Eriksson et al. 2015).

I avhandlingen diskuteras vidare de förändrade krav SOTE- reformen, KASTE programmet och den allt mer avancerade praktiken och digitaliseringen medför. (Tervameri 2017, Rautianen & Vallimies-Patomäki 2014, WHO 2012). Det kan konstateras att utveckling kräver nya kompetenser och utbildningen bör utvecklas, men det är viktigt att inte tappa siktet på vad som är kärnan i utbildning av sjukskötare, vad som bör och kan läras under utbildning, vad som lärs i kontext och kräver erfarenhet.

Avhandlingen består av tre delstudier och det övergripande angreppssättet är hermeneutiskt.

Syfte, forskningsfrågor och design

Det övergripande syftet med studien är att från ett caring perspektiv definiera klinisk kompetens samt beskriva hur den kan synliggöras, värderas och utvecklas under sjukskötartutbildningen.

De tre delstudierna besvarar följande övergripande frågeställningar:

1. Vilken är den kliniska kompetens som behövs i sjukvård och hur kan denna kompetens synliggöras (studie I)
2. Vilka begrepp, definitioner och teoretiska perspektiv används i aktuella studier för att utvärdera klinisk kompetens i sjukskötartutbildning (studie II)
3. Vilka former och uttryck tar den kliniska kompetensen i simulerade situationer och hur kan klinisk kompetens utvecklas genom simulering (studie III)

De frågeställningar som hör till delstudierna är följande;

Studie I;

- Vad karaktäriserar en kliniskt kompetent sjukskötare?
- Vad upplevs som klinisk kompetens i sjukvården?
- Vad bidrar till klinisk kompetens?
- Hur upprätthålls klinisk kompetens?
- Vilken är relationen mellan klinisk kompetens och evidensbaserad vård?

Studie II;

- Hur utvärderas klinisk kompetens?
- Vad utvärderas?

Studie III;

- Hur blir mötet, vetandet, utförandet, mognaden och utvecklingen evident i simulerade situationer?

Förförståelse – litteraturöversikt

Förförståelsen i avhandlingen baseras på caring perspektivet så som det definierats inom den tradition som skapats vid Åbo Akademi, Vasa. (Eriksson & Lindström 2000)

Vid sidan om en systematisk vårdvetenskap har den kliniska utvecklats. Den kliniska vårdvetenskapen studerar hur ontologin, begreppen och teorierna formulerade i den systematiska vårdvetenskapen ter sig i olika kontexter. Forskning i klinisk vårdvetenskap kan ta sin utgångspunkt i ethos, kärnbegrepp, praxisbegrepp eller i konkreta situationer i vårdverkligheten, men resultaten tillägnas alltid patienten och tillägnelsen är alltid på något sätt kontextuell. (Rhensfeldt et al. 2017, Eriksson & Lindström 2003) Kontext kan ses som en inre dimension i betydelsen kontakt och relation och en yttre i betydelsen inramning, miljö och omgivning. Genom ethos kan de inre och yttre dimensionerna framträda i en vårdande akt. (Holopainen et al. 2017, Lindström & Lindholm 2003) Klinisk kompetens är den kompetens sjukskötaren behöver i mötet med patienten vid "patientbädden" (Lindström & Lindholm 2003).

I litteraturöversikten framträder den kliniska kompetensen i sjukskötarutbildningen i ett holistiskt perspektiv och definieras som kunskap, färdigheter och personliga kvaliteter och etik vilket syns i utförandet. Den påverkas av utbildning och organisations och ledarskapskultur (c.f. Kajander-Unkuri 2015, Garside & Nhemachena 2013, Smith 2012, Valloze 2009, Axley 2008, Meretoja et al. 2004). Att vara kliniskt kompetent innebär att arbeta evidensbaserat och det kräver huvudets, handens och hjärtats färdigheter (c.f. Eriksson et al. 2017).

Teoretiskt perspektiv

Det valda perspektivet i klinisk vårdvetenskap förutsätter ett hermeneutiskt närmelsesätt där genom förståelse, tolkning och sanning vårdvetenskapen och dess ethos synliggörs (Eriksson et al. 2007). Genom ethos förenas de inre meningssammanhangen med de kontextuella yttre strukturerna till en vårdande kultur, där den kliniska kompetensen visar

sig som det goda, det sanna och det sköna i sant vårdande i en vårdgemenskap.

Förståelsen av klinisk kompetens bygger på en humanistisk syn på vårdvetenskapen, med grund i kärlek och barmhärtighet och med lidandet som grundkategorin som motiverar all vård

Det caritativa idealet i sjukskötarutbildningen är humanistiskt, holistiskt och utgår från etik och ethos (Eriksson et al, 2004)

Metodologi

Närmelsesättet i avhandlingen är hermeneutiskt (Gadamer 1997) och innebär en rörelse från förförståelse via en dialog med de empiriska och teoretiska texterna till ny förståelse. Varje delstudie speglas mot förförståelsen och varje delstudie utgör en ny förståelsehorisont inför följande studie. Den hermeneutiska rörelsen avslutas med en slutande tolkning där den etiska, ontologiska och kontextuella förståelsen fusioneras till en fördjupad förståelse av klinisk kompetens, vad det är, hur det kan värderas och utvecklas i sjukskötarutbildning.

Delstudie I är en enkätstudie med kvalitativ explorativ design och definierar klinisk kompetens ur sjukskötarstuderandes, lärares och handledares perspektiv. Analysen av det insamlade materialet har inspirerats av kvalitativ innehållsanalys enligt Hsieh & Shannon (2004).

Delstudie II är en integrativ litteraturöversikt med kvalitativ explorativ design. Metoden är inspirerad av Whittemor & Knafl (2005), kvalitetsgranskningen gjord enligt modell av Cooper (1989) och analysen har getts stringens genom tillägg av Kirkevold (1997) och Elo & Kyngäs (2003).

Delstudie II är en hermeneutisk observationsstudie med explorativ design inspirerad av Gadamer (1996), Eriksson et al, (2010) och Taylor (2014). Den hypotetiskt-deduktiva analysen kan härledas från Føllesdahl (1994).

Gadamer (1997), varnar för specifika metoder eftersom de påverkar tolkningen, varför det kan verka fel att kombinera hermeneutik med innehållsanalys och hypotetiskt deduktiv metod. Valet har gjorts med

motiveringen att metod ändå också ger tolkningen och avhandlingen stringens och gör tolkningsprocesserna lättare att följa.

De tre delstudierna följer en logisk frekvens och den hermeneutiska cirkeln sluts då definitionen på klinisk kompetens från studie I används som deduktiv modell i analysen i studie III.

Resultat

I delstudie I definieras den kliniska kompetensen som att möta, att veta, att utföra, att mogna och att utvecklas. Den kliniska kompetensen är mer en process än ett statiskt tillstånd, den indelas i en ontologisk grundläggande klinisk kompetens och en på den baserad kontextuell, vilken uppvisar specifika kontextuella variationer. Om den ontologiska kliniska kompetensen saknas börjar man uppfatta de kontextuella variationerna som grundläggande mönster. Den ontologiska kliniska kompetensen är relationell, den är överförbar mellan kontexter och skall utgöra basen i den kliniska kompetensen och i sjukskötarutbildningen. Den kontextuella kliniska kompetensen är mer strukturell och påverkad av yttre faktorer och den kan uppnås bara genom erfarenhet i kontexten.

I delstudie II framsteg tre teman eller definitioner som grund för utvärdering av klinisk kompetens under sjukskötarutbildning. De varierade från ett holistiskt, humanistiskt och ontologiskt synsätt till ett praktiskt orienterat uppgiftscentrerat. De olika definitionerna vilade på ett caring eller nursing perspektiv. Teman var a) Professionell praktik där kunskaper, färdigheter och attityder kombineras med värden och etisk reflexion med utgångspunkt i ett caring perspektiv. b) Kliniska färdigheter och reflektiv praktik där kritiskt tänkande, reflexion och problemlösning kombineras med självförtroende och förmåga med utgångspunkt i ett nursing perspektiv. c) Kognitiva, affektiva och psykomotoriska färdigheter i kombination med förmåga att handla med utgångspunkt i ett nursing perspektiv.

Det framkom att det finns en tydlig strävan att utveckla objektiva sätt att utvärdera det kliniska kunnandet och många instrument finns redan.

I att för mycket betona strukturerade metoder ligger ändå en risk att vården reduceras till uppgifter och färdigheter. Att kombinera objektiva metoder med andra former av värdering är viktigt, liksom att värderingen är kontinuerlig och studentens självvärdering är en naturlig del av den. Tyngdpunkt bör sättas på det relationella vårdandet med sin grund i caring.

I delstudie III framsteg att möta, att veta, att utföra, att mogna och att utvecklas i simulerade situationer som tre intriger då man hjälper patienten på vägen från lidande mot hälsa: 1) Görande som utförande och vetande. Studenterna jobbade evidensbaserat och ansvarsfullt. De klarade teknologin och färdigheterna, kände sig säkra och bekväma, delade information och jobbade tillsammans. 2) Varande som att möta. Studenterna var närvarande, intresserade, de bekräftade patienten genom att lyssna och svara. 3) Vardande som att mogna och utvecklas. Studenterna interagerade, lärde sig tillsammans och utvecklade sig och sin kliniska kompetens.

Också motpoler till alla intriger, kategorier, former och uttryck kunde ses. Studenterna var då ointresserade, passiva, tillbakadragna, isolerade och obekväma beroende på bristande kunskaper, färdigheter eller självförtroende.

Utveckling av den kliniska kompetensen kunde ses under dagarna. Lärarna möjliggjorde lärande genom att anpassa kraven till studenternas kliniska kompetens så alla hade möjligheter att nå sin potential. Simulering är ett utmärkt sätt att värdera och utveckla klinisk kompetens, men bör kombineras med andra metoder och kan aldrig helt ersätta klinisk praktik.

Sammanfattningsvis kan sägas att;

- Klinisk kompetens är en process av att möta, att veta, att utföra, att mogna och att utvecklas. Den har sin ursprung i caring och synliggör ethos i klinisk praktik

- Det finns en ontologisk klinisk kompetens som är relationell och överförbar och en kontextuell klinisk kompetens som är mer strukturell och bunden till kontext
- Utvärdering av den kliniska kompetensen skall göras med utgångspunkt i ett klart perspektiv och med en definition på vad som utvärderas. Varierande metoder bör användas i utvärdering och focus bör vara både på den objektiva och upplevda kompetensen. Kontinuerlig utvärdering skall vara en del i att utveckla och bibehålla den kliniska kompetensen.
- Utvärdering och utveckling av den kliniska kompetensen kan ske i simulering med situationer lik dem i vårdverkligheten och med väl designade scenarier. Simulering kan ersätta en del av den kliniska praktiken och underlättar övergången till densamma..
- Tyngdpunkten i sjukskötarutbildningen bör vara på att utveckla en ontologiska klinisk kompetens, medan den kontextuella kompetensen utvecklas i praktiken och kräver erfarenhet.
- Klinisk kompetens blomstrar och utvecklas i en vårdade kultur, den kan inte tränas utan kräver bildning

För utbildningen kan följande konklusioner dras;

- Perspektivet /-n som styr sjukskötarutbildningen skall tydliggöras i läroplanen
- Tyngdpunkten i utbildningen bör ligga på utvecklingen av den ontologiska kliniska kompetensen, längre och färre praktikperioder kan främja detta.
- Utvärdering av den klinisk kompetensen under sjukskötrutbildningen bör ske kontinuerligt med olika metoder och självvärdering skall alltid vara en del av utvärderingen.
- Vårdande och lärande är parallellprocesser varför det blir viktigt att utveckla och upprätthålla en vårdande kultur i klassrummet.

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