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**MENTORSHIP FOR MEDICAL  
STUDENTS  
– *SPACE FOR SOMETHING ELSE***

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“Education in its broadest sense is about the transformation  
of the self into new ways of thinking and relating.”

Goldie, 2012



## ABSTRACT

Mentorship has been used in undergraduate medical education to support students' learning and development. The medical education literature describes various goals for mentoring, various designs of mentoring programs, and various roles and functions of the mentor. The *aim* of the thesis was to deepen the understanding of the meaning of mentoring for medical students' professional and personal development and to contribute new knowledge that will be useful when designing mentoring programs for medical students in the future. Students' experiences of two forms of mentoring were explored in four consecutive studies in Europe. Theories of professional competence, learning, and transition were used for the interpretation, understanding, and explanation of the findings. *Studies I and II* explored experiences of one-to-one mentoring during the first clinical courses, semesters 5–8. In *Study I*, a questionnaire showed that the students felt that the mentorship had facilitated their professional (78%) and personal (63%) development. They felt respected by their mentors, and the role of the mentor was experienced as being supportive and providing guidance and perspectives. In *Study II*, their experiences were further explored by means of interviews. Three themes were found: *Space*, *Belief in the future*, and *Transition*. Having a mentor gave a sense of security and constituted a “free zone” alongside the educational program. It gave hope about the future and increased motivation. The students were introduced to a new community and began to identify themselves as physicians. The mentorship created conditions to start to develop the more “elusive” professional competences, such as reflective capacity, emotional competence, and the feeling of belonging to a community. *Studies III and IV* further explored experiences of mentorship using interviews concerning combined group and one-to-one mentoring during semesters 1–11. In *Study III*, five themes were found about what the mentorship created opportunities for; *Psychosocial support by the mentor*, *A relationship with a physician beneath the professional surface*, *Space for something else*, *Awareness of one's own development*, and *Reflection and learning with peers*. The mentorship created space for reflection on the humanistic aspects of the professional role. A mentoring relationship can be on a personal level without frequent meetings and knowing one another well. Continuity helped the students to recognize their own development. *Study IV* focused on the transitional process of becoming a physician. The analyses resulted in three themes: *Integrate oneself with the future role as a physician*, *Exciting clinical experiences with the mentor give incentives to learn*, and *Toward understanding the professional competence of a physician*. The mentorship enabled the students to get a view of their future lives and start to integrate the professional role with themselves as persons. Early access to the clinical environment with the mentor was an incentive and gave meaning to the theoretical knowledge. Their understanding of professional competence and behavior evolved and they advanced toward understanding the wholeness of the profession. *In conclusion*: mentorship can facilitate medical students' professional and personal development by creating *space* for reflection and development of the more “elusive” competences of a physician, by giving *incentives* to learn, and by facilitating the students' process of *becoming* a physician.

## LIST OF PUBLICATIONS

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- II. **Kalen S**, Ponzer S, Silen C. The core of mentorship: medical students' experiences of one-to-one mentoring in a clinical environment. *Advances in Health Science Education: Theory and Practice*. 2012;17(3):389-401.
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# 1 INTRODUCTION

To become a physician means more than to learn medical science and clinical skills, it also means to handle one's acquired knowledge and trained skills in a professional way in interaction with patients, relatives, and other healthcare professionals to "do good." Mentorship has in recent times been used in undergraduate medical education to support the students' learning and development in this area. But what does it mean for the students' development to participate in such programs? In order to get a deeper understanding of the meaning of mentoring, this area has to be investigated through the individuals' own experiences. The aim of this thesis was to deepen the understanding of the meaning of formal mentoring for medical students' professional and personal development. The thesis focuses on medical students' experiences of different forms of formal mentoring and the meaning of mentoring during the process of becoming a physician. All of the four studies in the thesis investigated this area from the students' perspective.

When discussing mentoring it is interesting to go back and start in history at the time when the concept of "mentor" was born. The story of Mentor comes from Greek mythology around 1200 BC. In the epic poem *The Odyssey*, Homer describes how Odysseus, the king of Ithaca, is leaving home for a long journey to the Trojan War and will be away for decades. Before he leaves, he appoints Mentor, an experienced, faithful and wise man, to take care of his one-year-old son Telemachus while he was away. Odysseus wanted to make sure that his son would get the best support and help while growing up and be prepared in the very best way for all future challenges in life. Mentor was described in this poem as a guide, role model, and advisor (Ragins and Kram, 2007; Mathisen, 2009). Over time, the traditional view of a mentor was developed to mean a trustful advisor, friend, teacher, and wise person. Today, mentoring is used in several areas, for example, in business, leadership, management, social work, healthcare, and education (Mathisen, 2009).

As a nurse in the field of clinical medical education at a teaching hospital in Stockholm, I have met many students from different educational programs during their development into becoming professional healthcare providers. The learning and increasing independence of the students during their clinical placements has always fascinated me. One of my assignments during the last few years coincided with a mentoring program for medical students, and that became the starting point for this thesis. My interest in the students' learning and development and my curiosity about the meaning of mentorship in professional education constituted the driving force in this work.

## 2 BACKGROUND

### 2.1 MENTORING

There are several perceptions and definitions of mentoring and mentorship in the literature (Ragins and Kram, 2007; Mathisen, 2009; Bozeman and Feeney, 2007). Two different approaches to mentoring are that mentorship can be organized and arranged and that mentoring relationships occur naturally and spontaneously between certain individuals (Mathisen, 2009). Significant for a mentoring relationship, in contrast to other relationships, is that it is embedded within the career context (Ragins and Kram, 2007). An individual having a mentor is called a “mentee” or “protégé.” In this thesis the mentored individuals are mostly referred to as students. “Mentee” and “protégé” are used when referring to other authors using these words.

In social science, mentoring is described as providing, in general, two functions for mentees: a career function and a psychosocial function (Kram, 1985; Ragins and Kram, 2007; Mathisen, 2009). The mentoring function with a focus on the mentees’ career development is more to the fore in North America. In this function, a mentor is seen as a person with both power and influence. The function of psychosocial support is more to the fore in the European context where it can also include pedagogical processes. The function of psychosocial support is related to identity development, self-awareness, self-confidence, and motivation. The European view of mentoring emphasizes collegiality and equality between the mentor and the mentee, with no hierarchical dependency (Mathisen, 2009). There are variations in the range and degree of the mentoring functions within different mentoring relationships, and no mentoring relationship is like another (Ragins and Kram, 2007).

A traditional definition of mentoring in social science, developed by Kram in North America, is as follows:

... a relationship between an older, more experienced mentor and a younger, less experienced protégé for the purpose of helping and developing the protégé’s career. The mentor may or may not be employed in the same organization as the protégé or be in the protégé’s chain of command or profession. (Ragins and Kram, 2007, p. 4)

Another definition of mentoring, developed in North America, is as follows:

... a process for the informal transmission of knowledge, social capital, and psychosocial support perceived by the recipient as relevant to work, career, or professional development; mentoring entails informal communication, usually face-to-face during a sustained period of time, between a person who is perceived to have greater relevant knowledge, wisdom, or experience (the mentor) and a person who is perceived to have less (the protégé). (Bozeman and Feeney, 2007, p. 731)

A description of mentoring in the context of medical education in Europe, developed by the Standing Committee on Postgraduate Medical and Dental Education (SCOPME) in the United Kingdom, is as follows:

... the process whereby an experienced, highly regarded, empathic person (the mentor), guides another individual (the mentee) in the development and reexamination of their own ideas, learning, and personal and professional development. The mentor, who often, but not necessarily, works in the same organization or field as the mentee, achieves this by listening and talking in confidence to the mentee. (SCOPME, 1998, p. 1)

SCOPME's (1998) description of mentoring includes three overlapping supports: support for professional development, personal support, and educational support.

Ragins and Kram consider mentoring relationships to be complex, but an important form of socialization which can exist in several forms. Mentorship can have directed or non-directed content, the mentor can be allocated or chosen by the mentee, and mentorship can be voluntary or mandatory. However, they think that all mentoring relationships include some degree of voluntariness. New perspectives of mentoring include formal and informal mentoring, individual mentoring, mentoring in groups or with peers, mentoring face to face, and also e-mentoring using new virtual technique. The authors cite mentoring relationships as being developmental for both the mentor and the mentee and leading to higher career stages for the mentee. They also point out the risk of dysfunctional relationships comprising harassment, dependence, and even competition between the parties (Ragins and Kram, 2007).

There is a gap between research theories and the practice of mentoring, and practitioners often develop new mentoring programs without the guidance of empirical research. Researchers need to be connected to practice in order to extend the understanding of processes and outcomes of new and emerging forms of mentoring relationships (Ragins and Kram, 2007). Mathisen argues that mentoring is a multifaceted area that is hard to overview since it is used in different contexts and with different goals and contents. He thinks that the benefits from mentoring are context-dependent, so that it is important to view mentoring in the specific context where it occurs (Mathisen, 2009).

Presumptions concerning "mentorship" and the term "mentor" in this thesis are that a mentor is a more experienced person than the mentee, having a listening and supportive function with the aim of supporting the mentee in his/her development. Furthermore, mentorship is regarded as a non-dependent relationship of confidence in which the mentor has no responsibility to teach and/or assess the mentee. The description of mentoring developed by SCOPME corresponds well to the understanding of mentoring in this thesis.

## **Mentoring in undergraduate medical education**

Mentoring has been used in medical education during the last decades, for both students and residents as well as faculty (Frei et al., 2010; Sambunjak et al., 2009; Buddeberg-Fischer and Herta, 2006; Sambunjak et al., 2006; Ramani, 2006). Most papers on this topic were published from 2001 onwards (Buddeberg-Fischer and Herta, 2006). The medical education literature describes various designs and durations of mentoring

programs, various goals of mentoring and various definitions of the mentors' role and function. There is no agreement in the medical education literature on the role and function of a mentor. The role is described in such words as advisor, guide, teacher, trainer, supervisor, colleague, facilitator, and supporter (Bray and Nettleton, 2007; Nettleton and Bray, 2008). The mix of designs, roles, and goals of mentoring in the literature makes it difficult to interpret existing research and draw conclusions about its benefits and the best evidence for practice.

Different designs of formal mentoring programs for medical students have been reported, for example, one-to-one mentoring, peer mentoring, and group mentoring (Buddeberg-Fischer and Herta, 2006; Yusoff et al., 2009; Kurré et al., 2012). Both formal and informal mentoring are reported (Berk et al., 2005; Aagaard and Hauer, 2003). In informal mentorship, the relationship is built on voluntariness. The mentor can be chosen by the mentee, and sometimes the mentor is not even aware of being a mentor. In formal mentoring, the relationship is arranged in some form of mentoring program and the mentors are usually trained (Rose et al., 2005). An aspect to take into consideration when arranging formal mentoring programs is the value of interpersonal matching of mentors and mentees (Jackson et al., 2003; Kurré et al., 2012).

Different goals of mentoring programs have also been reported: for example, career counseling, supporting reflection and personal growth, developing professionalism, building professional networks, increasing students' interest in research or specific specialties, such as primary care or geriatrics, and reducing students' anonymity (Frei et al., 2010; Indyk et al., 2011; Kalet et al., 2002; Buddeberg-Fischer and Herta, 2006; Woessner et al., 1998; Woessner et al., 2000; Markakis et al., 2000; Hoffman et al., 2006). Mentoring especially designed for women and minority student groups has also been reported (Kosoko-Lasaki et al., 2006).

Published papers often lack information about the particular conditions and forms of mentoring. Some are just reporting where mentoring programs exist or the participants' opinions and satisfaction with such programs. Since the published papers do not always include satisfactory details, there is a need and request for better evaluations (Buddeberg-Fischer and Herta, 2006). Some studies on mentoring and mentoring relationships report the meaning and outcomes from the mentors' perspective (Dimitriadis et al., 2012; Stenfors-Hayes et al. 2010; Stenfors-Hayes et al., 2011; Usmani et al., 2011).

A review of the PubMed literature on structured mentoring programs for medical students during 2000–2008 was published in 2010. The review included 25 studies, all from North America. It showed that most countries still have no formalized mentoring programs for medical students. The authors conclude that mentoring implemented early on in medical education is an important career advancement tool. They further state that a personal relationship between the student and faculty (mentor) is important for the benefit of individual advice and encouraging thinking about career choices. Increased research productivity and improved medical school performance were other identified benefits of mentoring. The authors state that mentoring in medical education would receive more appreciation if its effects were more clearly documented. They also claim that qualitative methods are needed to capture individuals' own experiences when

exploring this area since it involves interactions and relationships between individuals (Frei et al., 2010).

Rose et al. have listed recommendations for what a mentor has to do to enhance an effective mentorship relationship between faculty and medical students. The study was conducted in North America. They conclude that a mentor has to be available, convey respect and confidence, focus on the mentee, ask questions, track progress, identify strengths, give feedback and reassess what is going well and which areas need to be improved (Rose et al., 2005). These recommendations are derived from a context of informal mentoring relationships but they can also be applied to formal mentoring relationships.

Efforts have been made to develop instruments to measure the effectiveness of mentoring relationships, but the instruments tend to limit the quantification of results pertaining to person-, relationship-, and program-specific contexts. Every mentoring relationship is unique, which makes it difficult to create such instruments. However, questionnaires have been developed that describe the characteristics of the mentor and outcomes of mentoring related to job change and research. Desirable characteristics of a mentor include expertise, professional integrity, honesty, accessibility, approachability, motivation, respect by peers in field, supportiveness, and encouragement (Berk et al., 2005).

Most research on mentoring in undergraduate medical education has been conducted in North America (Frei et al., 2010; Sambunjak et al., 2009) where the concept of mentoring is connected more with career choice and career development, for which reason educational researchers have called for research in this field from other geographic areas (Sambunjak et al., 2009).

In Europe, a German study showed that 22 of 36 German medical schools offer mentoring programs for their medical students. Most of the students were not enrolled in formal mentoring, and only a few were given one-to-one mentoring. Most of the programs had not been evaluated or published and the authors requested controlled studies to be able to compare the efficiency of different forms of mentoring (Meinel et al., 2011). Another German study showed that students expressed a need for mentoring during their education and desired more support for personal and professional development (von der Borch et al., 2011). Students are also known to perceive barriers to developing informal mentoring relationships on their own because of short courses and short connections with the clinic, and therefore they wish the schools would promote mentoring and help them to find mentors (Hauer et al., 2005).

A voluntary one-to-one mentoring program where students could choose a mentor was established in Munich in 2008 and the program was evaluated from both the mentors' and the students' perspective. The most frequently reported statements from the students' perspective concerning what the mentoring relationship had facilitated were related to career planning, research, clinical and final-year electives, and experiences abroad (Dimitriadis et al., 2012). Another German study showed that medical students' need for a mentor differ in different stages of their education. In this study the mentors were faculty members at the university. The authors recommend the universities to

offer differential formal mentoring programs for medical students that are related to different levels of their education. They also recommend that the students should choose their mentors. The authors requested more detailed research for a greater understanding of how formal mentoring programs influence medical students' professional and personal development, including contextual factors, matching processes, pitfalls, and the value of short- and long-term programs (Kurré et al., 2012).

In Sweden, Karolinska Institutet was the only university in 2009 that had a formal mentoring program for medical students as a part of the curriculum (Nilsson et al., 2009). This was also confirmed by an e-mail request to all Swedish medical education programs in 2011. The goal of that mentoring program was to support the students' professional and personal development. That mentoring program constitutes one of the two contexts in this thesis and will be further described in the Material and Methods section. Another mentoring program for medical students was also reported from Karolinska Institutet. It was a voluntary small-scale mentoring program aimed at providing medical students with insights into non-traditional career paths. A pilot study showed that the 12 students in the program appreciated being able to see different available career opportunities. Besides that, they appreciated being able to talk to a senior, to reflect on their experiences and to receive support for their personal and professional development (Asadi et al., 2011).

From viewing mentoring and mentoring relationships in this wide perspective, covering several goals and forms of mentoring and several perceptions and roles of a mentor, the present thesis intends to promote a deeper understanding of the meaning of formal mentoring for undergraduate medical students' professional and personal development in a European context. The research project intends to provide rich descriptions and to have a clear connection with practice so as to be useful in future medical education.

## **2.2 PROFESSIONAL DEVELOPMENT**

Two formal mentoring programs at Karolinska Institutet constituted the contexts in this thesis. Both the programs had the goal to facilitate medical students' professional and personal development. In this work, the areas of professional and personal development are related to professional competence.

### **Professional occupations**

"Profession" is a generic term which can be used to describe many occupations (Cruess et al., 2004). Professional occupations differ from other occupations in society at large. According to Gross, who studied professionals in general in social science in the 1950s, typical criteria for professional occupations are the unstandardized product, the degree of personal involvement, the wide knowledge of special techniques, the sense of obligation, the sense of group identity, and the significance of the occupational service to society (Gross, 1958). Greenwood, also working in the field of social science at the same time, viewed professionals as organized groups interacting with society. He described professional occupations in terms of the attributes of possessing systematic theory, having authority accepted by clients, sanction and support from the community,

regulation by ethical codes, and a professional culture with formal organizations. Professional occupations base their concrete operations on an internal system of theoretical knowledge which underlies their skills (Greenwood, 1957). These descriptions make it clear that the occupation of a physician is a professional occupation in the field of healthcare in society. Other examples of professionals are architects, priests, dentists, judges, teachers, and engineers (Greenwood, 1957; Cruess et al., 2004). Cruess et al. (2004) propose the following definition of profession for use in medical education:

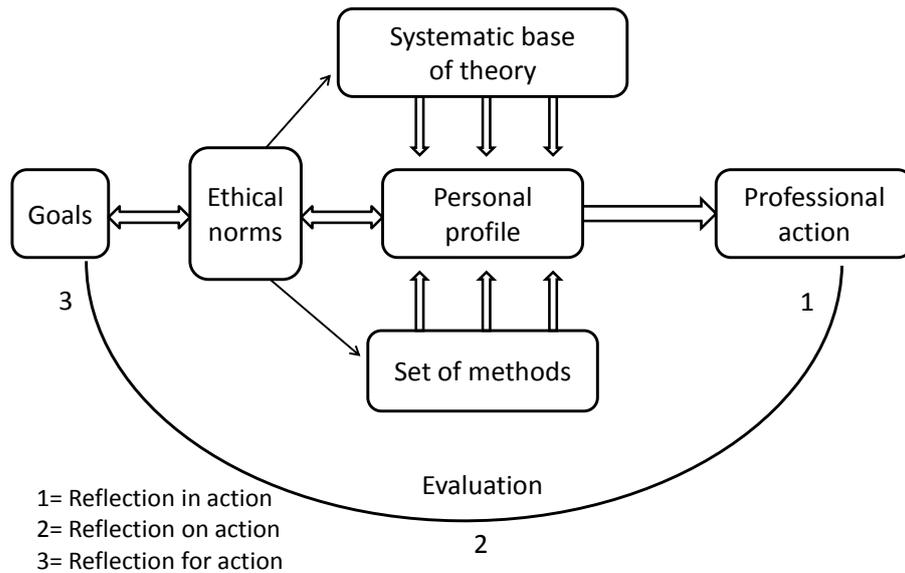
An occupation whose core element is work based upon the mastery of a complex body of knowledge and skills. It is a vocation in which knowledge of some department of science or learning or the practice of an art founded upon it is used in the service of others. Its members are governed by codes of ethics and profess a commitment to competence, integrity and morality, altruism, and the promotion of the public good within their domain. These commitments form the basis of a social contract between a profession and society, which in return grants the profession a monopoly over the use of its knowledge base, the right to considerable autonomy in practice and the privilege of self-regulation. Professions and their members are accountable to those served and to society. (Cruess et al., 2004, p 74)

The education of professions is anchored in both the academy and the world of practitioners. For professions, the formal education required for professional membership and the professional identity of their members are emphasized (Sullivan, 2005).

### **A model of professional competence**

Different professional occupations possess different professional competences. In the area of psychology and education, Forslund described professional competence using a model including several components (Forslund, 1995; Wilhelmsson et al., 2012). The components in this model are: knowing the goals of the profession, knowing the ethical norms, having a systematic theoretical base, acquiring a set of methods, the personal profile, and being able to evaluate one's work (Figure 1). In his view, professional competence means the ability to handle professional processes and manage the relationship between theory and practice. By including the personal profile in professional competence, he emphasizes the individual behind the professional occupation. The personal profile in this model is created in a combination of the individual's personal characteristics and previous knowledge and other components such as ethical codes, theories, and methods of the profession. Forslund considers the personal profile to be close to professional identity, which constitutes the base for every professional action (Forslund, 1995, Wilhelmsson et al., 2012).

The assumptions in this thesis are that this model of professional competence can be applicable to other professional occupations than those in the fields of psychology and education where it was developed.



**Figure 1.** Model of professional competence comprising seven basic components and showing how they can be related to and influence each other (Wilhelmsson et al., 2012).

### Professional competence of a physician

The terms “physician” and “doctor” have been used synonymously in this thesis. The professional competence of a physician has earlier been limited in medical education to cognitive, technical, and emotional aspects, some of which are easier to teach and measure and some are not (Epstein and Hundert, 2002). Several authors and organizations in the medical community have tended in recent times to define the professional competence of a physician in a broader perspective, but there is no consensus on a definition that encompasses all important domains of professional competence in medical practice (Epstein and Hundert, 2002). The most widespread frameworks of professional competence in medical education are known as Accreditation Council for Graduate Medical Education (ACGME) competences, from United States, the CanMEDS Framework, from Canada, and Tomorrow’s Doctor, from the UK (Jarvis-Selinger et al., 2012; Norman, 2011; Sherbino et al., 2011).

In 1999 The ACGME identified six general competence domains of a physician. The domains are patient care, medical knowledge, practice-based learning and improvement, systems-based practice, professionalism and interpersonal skills, and communication (Swing, 2007; Epstein and Hundert, 2002). Building on this framework, Epstein and Hundert described the professional competence of a physician in four functions: a cognitive function, an integrative function, a relational function, and an affective and moral function. In these functions they emphasize reflective, affective, and moral aspects of competence. They regard professional competence as being developmental, impermanent, and context-dependent and describe the competences in cognitive, technical, integrative, context, relationship, and affective and moral

dimensions, and habits of mind. Competence is, in their view, seen as the interaction of the task, the clinician's ability, and the health system (Epstein and Hundert, 2002).

Professional competence is the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice for the benefit of the individual and the community being served. (Epstein and Hundert, 2002, p 226)

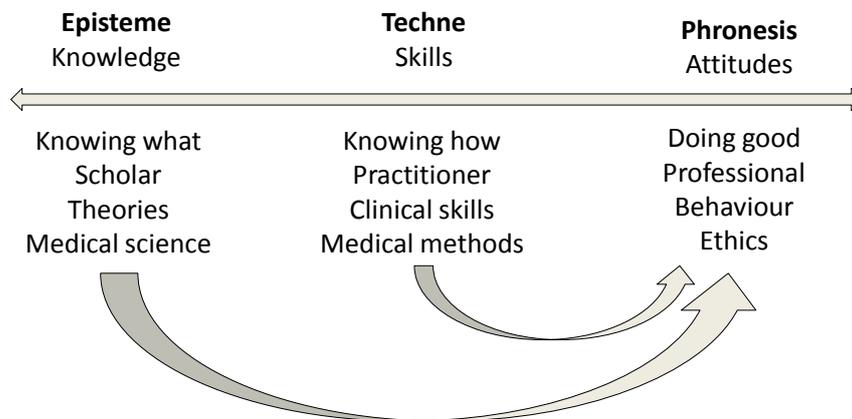
In 2005 the CanMEDS Physician Competency Framework in Canada defined the professional competences of a physician as being related to seven roles with a large number of competences connected to these roles. The roles are medical expert, communicator, collaborator, manager, health advocate, scholar, and professional (CanMEDS, 2005). The professional role of a physician is defined as follows:

As professionals, physicians are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behavior. (CanMEDS, 2005, p. 8)

The CanMEDS framework has influenced educators in competence-based medical education to translate the roles into measurable competences. Concerns have been raised about breaking down the roles into measurable competences and tasks because it could lead to a missing of the underlying meaning of the roles and their interconnectedness (Jarvis-Selinger et al., 2012).

The General Medical Council's Education Committee in United Kingdom developed recommendations for undergraduate medical education in "Tomorrow's Doctors" (General Medical Council, 2003; Christopher et al., 2002). This guide recommends learning goals related to knowledge, skills, and attitudes. Professional competence is described here as being developmental, impermanent, and context-dependent. Competences in the area of attitudes include communication skills, relations, and ethical obligations. Implemented learning modules in that area are described as personal values and growth or personal and professional development (Christopher et al., 2002).

The professional competence of a physician is multifaceted and complex (Foster, 2011) and to become a physician can be understood as a probably multifaceted and complex process. What students need to learn and develop in their medical education can also be framed by the Greek philosopher Aristotle's forms of knowledge from 384–322 BC. This theory provides three perspectives of knowledge: episteme, techne, and phronesis (Gustavsson, 2000; Gustavsson, 2007). Episteme is described as the true and objective knowledge about things, techne is practical-productive knowledge, and phronesis is described as practical wisdom. Knowledge in the perspective of phronesis is built into the social and cultural context that people are involved in (Gustavsson, 2007). How these forms of knowledge relate to the professional competence of a physician and medical education is illustrated in Figure 2.



**Figure 2.** The three forms of knowledge by Aristotle framed in the context of the professional competence of a physician.

All of the three forms of knowledge are included in the professional competence of a physician. To become a physician means to learn theories of medical science and to train clinical skills, but it also means to manage knowledge and skills with a holistic view including both scientific and humanistic aspects of competence to “doing good.” The knowledge form phronesis is perceived in modern medicine as acting insightful in clinical dilemmas and having a good judgment in difficult clinical situations (Aspegren et al., 2012). Competences in the area of phronesis can be perceived as being more elusive since they are not so obvious to teach, learn and assess using traditional methods. In this thesis, competences in this area are related to in terms of elusive and humanistic competences.

### 2.3 PERSPECTIVES ON LEARNING

In this work, students’ development is seen as a change deriving from any form of learning and a new understanding of something. The process of learning is described as an integrated interplay between the content to be learned and an incentive function providing mental energy to learn. Learning is initiated by the learner’s interaction with the environment where it takes place. Different activities, participation, and experiences are examples of impulses in the environment that can initiate learning processes (Illeris, 2009).

There is a wide variety of perspectives on learning in medical education (Mann, 2011). Learning and development of the physician’s different competence areas can be related to different perspectives on learning depending on the content and the learning situation. The perspectives on learning used in this thesis are related to *cognitive* orientation, focusing on the individual’s perception, memory, and making meaning, and

*social* orientation, focusing on learning as a social activity that occurs in interaction between the learner and other people (Mann et al., 2011). Learning is seen from a constructivist view in which reality and new understanding is constructed by the learners, based on their earlier experiences, knowledge, and perceptions.

## **Learning and understanding**

Different intentions to learn lead to learning on a surface level and learning on a deep level (Marton and Booth, 1997). Marton identified six conceptions of learning: learning as increasing one's knowledge, learning as memorizing and reproducing, learning as applying, learning as understanding, learning as seeing something in a different way, and learning as changing as a person. The first three conceptions relates to a surface level of learning focusing on the tasks for learning to reproduce what is learned, while the three latter conceptions relate to a deep level of learning focusing on seeking meaning (Marton and Booth, 1997).

Mayer speaks about rote versus meaningful learning (Mayer, 2002). The goal for rote learning is retention (to remember what is learned) and the goal for meaningful learning is to promote transfer (to make sense of what is learned to solve new problems).

Different cognitive processes are involved and used for rote learning and for meaningful learning. For rote learning, the essential thing is to remember, which involves recognizing and recalling. For meaningful learning, the essential thing is to understand, apply, analyze, evaluate, and create. The category of understanding has been most emphasized in schools and educational contexts. To understand means to construct meaning by integrating and building connections between new knowledge and prior knowledge. Understanding includes processes of interpreting, exemplifying, classifying, summarizing, inferring (concluding), comparing and explaining (Mayer, 2002).

In the conceptions of learning described by Marton, rote learning relates to the surface level, while understanding relates to the deep level of learning. To promote meaningful learning and understanding, one has to go beyond the cognitive processes connected with rote learning and retention. However, knowledge acquired by rote learning is also important for meaningful learning when it is used for solving problems or tasks (Mayer, 2002).

## **Learning by reflection**

In previous sections on professional competence, the role of a physician was described as multifaceted and complex. One of the competences brought up was reflection: to reflect in daily practice in order to learn from experience (Epstein and Hundert, 2002). Reflective practice has been described as an essential attribute of competent healthcare professionals. In CanMEDS Framework reflective learning is connected to the role of a Scholar (CanMEDS, 2005). Reflection and evaluation of one's own work is emphasized as key factors for the development of one's professional profile (Forslund, 1995). Reflection is part of the process whereby students' experiences are turned into

new understanding (Boud et al., 1985). Reflection is needed for learning from experience and for developing and maintaining competence in life-long learning and appears to be associated with the deep level of learning (Mann et al., 2009, Mann et al., 2011).

How reflection contributes to learning and development has been described and explained in different ways. Well-known models of reflection were developed during the last decades of the 20th century by Schön (Schön, 1983), Boud (Boud et al., 1985), and Moon (Moon, 1999). Schön introduced the concept of the “reflective practitioner” who learns from reflection, by thinking in action and on action, where learning and new understanding are created in interaction between the situation and the practitioner (Schön, 1983). Boud emphasizes emotions in reflection and describes reflection as an intellectual and effective process for learning by returning to the experience, attending to feelings, behavior, and ideas for the moment, which leads to an outcome of new knowledge or new resolutions (Boud et al., 1985; Boud and Walker, 1998; Boud, 2001). According to Moon, reflection is “a form of mental process with purpose and/or outcome that is applied to relatively complex or unstructured ideas for which there is not an obvious solution.” (Moon, 1999, p 152) Moon thinks that emotion is a part of all learning and describes reflection in five steps where noticing, making sense, making meaning, and working with meaning leads to learning (Mann et al., 2009; Moon, 1999).

Reflection during education seems to be important for developing one’s professional profile and for reaching the goal of being a reflective practitioner who reflects over his/her work with awareness of one’s beliefs and values, and for life-long learning.

## **Learning by social interaction**

The student’s learning in undergraduate medical education relates to professional learning and can also be understood as “becoming” (Hager and Hodkinson, 2011). According to Hager and Hodkinson, professional learning as “becoming” takes place by participating in a cultural practice, in combination with a sense of belonging as a member of a social group or setting. They think that professional learning takes place in interaction between individuals and the learning culture and that professional learning means different combinations of change and consolidation. The process of becoming can take place during different amounts of time; the process can be rapid or slow (Hager and Hodkinson, 2011). Becoming can also be regarded as a process of transition in the meaning of changing from one condition to another: for example, from being a medical student to being a physician, and to enter the professional role in the healthcare system. A role transition is defined as “an event or nonevent resulting in changes in individual psychosocial assumptions concerning oneself or one’s organizational environment, social environment or one’s relation to one’s environment” (Allen and Vliert, 1984, p 83). Transition is also defined as “a passage or movement from one state, condition or place to another” (Schumacher and Meleis, 1994, p 119). Assumptions made in this thesis are that the concepts of transition and becoming are closely related and that such processes of change can be ongoing over a period of time.

Also in Wenger’s social cultural learning theory of “community of practice”, the interaction between the newcomer and the experienced is central, and to become a

member of a community (Wenger, 1998; Wenger, 2000). The typical characteristics for a community of practice are joint enterprise, mutual engagement between members of the community, and a shared repertoire of concepts, tools and ways of doing things. In this perspective, learning occurs by legitimate peripheral participation. Central to a community of practice is also the process whereby a new member creates a professional identity through participation. A community of practice can be a profession, a specific workplace, a multiprofessional team, or an organization (Li et al., 2009). In this thesis community of practice is used in the meaning of a profession, i.e., the profession of a physician.

## **2.4 RATIONALE FOR THE THESIS**

The use of mentoring in medical education is increasing around the world. The existing literature on mentoring in undergraduate medical education indicates that this is a multifaceted area of research involving many factors. The context, the role of the mentor, the goals of mentoring, and the forms of mentoring programs vary. The published papers often lack comprehensive information about the conditions and forms of mentoring. The perceptions of mentoring also differ in different parts of the world. These differences make it difficult to interpret and draw conclusions from the research in the field.

To reduce the gap between theory and practice, and to extend the understanding of new and emerging forms of mentoring relationships, research about mentoring needs to be connected to practice. Research on the benefits of mentoring is required, and several efforts have been made to develop instruments to measure its effects. But since mentoring involves interpersonal relationships and other personal issues, it has been difficult to develop instruments for the quantification of results. Therefore, qualitative studies based on the students' experiences are called for to expand the understanding of its meaning.

To the best of my knowledge, there is a need for research on the meaning of mentoring for medical students' professional and personal development, based on their own experiences. In this thesis, this area was investigated with a series of studies in a European context, which is not particularly well represented in the current research literature. The intention was to widen the understanding of the meaning of mentoring with regard to medical students' development during their undergraduate education. A wider knowledge in this area can be of practical use for educators when developing mentoring programs for medical students in the future. This knowledge can also be interesting and useful for educators in other healthcare professions.

### 3 AIM OF THE THESIS

The overall aim of this work was to deepen the understanding of the meaning of mentoring for medical students' professional and personal development and contribute new knowledge which will be useful when designing mentoring programs for medical students in the future.

Research question:

- What can formal mentorship during medical education mean for medical students' professional and personal development?

The specific aims of the four studies were:

- I. To investigate undergraduate medical students' experiences and perceptions of one-to-one mentoring during clinical courses and whether they felt that the mentorship promoted their personal and professional development.
- II. To deepen the understanding of the meaning of one-to-one mentorship during clinical courses seen from the perspective of undergraduate medical students.
- III. To deepen the understanding of the meaning of combined group and individual mentoring for medical students' professional and personal development.
- IV. To investigate the meaning of mentoring with a focus on the medical students' transition process of becoming a physician.

## 4 RESEARCH APPROACH

The objective of this thesis was to explore medical students' experiences of mentoring in order to deepen the understanding of its meaning. The phenomenon under study was the meaning of mentorship for medical students' professional and personal development. The intention of the research project was to deepen the understanding of mentoring, not to judge or measure its efficiency.

The choice of different research approaches in this work should be seen in relation to the aims and the process of the project. The four studies were planned in two steps in which Studies I and II were planned and completed before the planning of Studies III and IV. The studies on one-to-one mentoring used both quantitative and qualitative approaches. In Study I descriptive statistics (Polit, 2012) was used to acquire information and a first sense of the students' experiences and perceptions of one-to-one mentoring. In Study II a qualitative approach was chosen to further interpret and explain the results (Polit, 2012). During the planning of Studies III and IV, the general idea was to explore medical students' experiences of mentorship in another similar context in order to further extend the existing knowledge of its meaning. For these studies (III and IV), a qualitative research approach was chosen.

A qualitative research approach was judged to be most relevant to the aims, since that approach can be used to find out what people do, know, think, and feel (Patton, 2002). Qualitative research can be used to explore and understand the meaning of issues or problems of a social and human type (Creswell, 2007, Creswell, 2009) and to get insight into emotional and experiential phenomena (Giacomini and Cook, 2000). Furthermore, qualitative research studies experiential phenomena in their natural setting (Lingard and Kennedy, 2011). Qualitative research can find out what people do, know, think, and feel by observing, interviewing, and analyzing documents (Patton, 2002, p. 145).

Individual interviews were conducted in three of the studies, and the material was analyzed using different approaches to interpretive content analysis. This is described in more detail in the following sections. Epistemological and ontological assumptions were made from a constructivist perspective in which peoples' reality is regarded as being socially constructed (Lincoln and Guba, 1985; Illing, 2010). In this perspective, research findings are seen as being created in an interaction between the object under study and the researcher, and the research findings do not reflect an objective truth (Lincoln and Guba, 1985; Illing, 2010; Patton, 2002).

The project takes a pragmatic stance (Patton, 2002) in the meaning that the underlying questions that formed the idea of the project are derived from a practical and real-world setting, not from theoretical bases, and the intention of the research was to increase the understanding and knowledge of a phenomenon for application and improvements in practice.

## Interpretive content analysis

Content analysis can be used in both quantitative and qualitative research approaches to systematically analyze the content of different forms of communication (Patton, 2002; Krippendorff, 2004; Downe-Wamboldt, 1992; Graneheim and Lundman, 2004; Sandelowski, 2000; Elo and Kyngas, 2008). In this thesis Graneheim and Lundman's descriptions of the concepts used in content analysis was applied. Their understanding of qualitative content analysis is grounded in Watzlawick's theory, the "pragmatics of human communication." In this theory, a text based on interviews is shaped in an ongoing interaction between the actors in the human communication activity. Watzlawick argues that the result of communication depends on the actors' relationship and how they understand and interpret each other, which leads to specific pragmatic consequences. How you see another individual and what you think are essential or irrelevant with regard to impressions and information in a communication varies from individual to individual (Watzlawick et al., 2011). An assumption in this thesis was that the interaction between the researcher and the interviewee can impact on how the researcher interprets what the interviewee says and vice versa. The interaction itself between the researcher and the interviewee was not the topic of the analysis.

Different forms of interpretive content analysis were used in this thesis: *inductive latent content analysis* and *directed content analysis*. Inductive analysis means to discover categories, patterns, and themes in data without using an existing framework or coding scheme (Patton, 2002). Inductive analysis is recommended if there is not enough earlier knowledge about a phenomenon, and categories are derived from the data (Elo and Kyngas, 2008). Latent content analysis involves an interpretation of the underlying meaning of a text, and findings emerge through the researcher's interaction with the data (Graneheim and Lundman, 2004; Downe-Wamboldt, 1992; Patton, 2002). The directed approach to content analysis also involves an interpretation of the underlying meaning of a text (Hsieh and Shannon, 2005). The directed approach can be used when existing theory or prior research exists about a phenomenon which is incomplete or would benefit from further description (Hsieh and Shannon, 2005, p. 1282). By using existing research, a directed content analysis can extend, validate, support, or not support evidence of a theory or theoretical framework. In the directed approach, earlier research can be used to guide the process of analysis and the discussion of findings (Hsieh and Shannon, 2005).

In qualitative research, theories can be used for several reasons (Cresswell, 2009). In this thesis, theories were used for further interpretation, understanding, and explanation of findings. Patton states that interpretation involves explaining the findings, answering "why" questions, attaching significance to particular results, and putting patterns into an analytic framework (Patton, 2002, p. 438). There are several approaches to presenting findings in qualitative research: one approach is to present the findings and discussion in two separate sections, another approach is to incorporate the discussion into the findings section (Burnard et al., 2008). In this thesis, as in the four individual studies, findings and discussions are presented in separate sections.

## 5 MATERIAL AND METHODS

### 5.1 DESIGN

To deepen the understanding of the meaning of mentoring in undergraduate medical education, the students' experiences of two forms of mentoring were explored in four consecutive studies. The objective was to explore individuals' own experiences in order to better understand the meaning of mentorship for professional and personal development during undergraduate medical education.

The students' experiences of one-to-one mentoring were explored using both quantitative and qualitative methods. The students' experiences from combined group and one-to-one mentoring were explored using a qualitative method. The methods are further described in the following sections.

**Table 1.** A Schematic overview of the four studies

Study area	Participants	Data collection	Methods	Study
One-to-one mentoring, semesters 5-8	All medical students in the program	Electronic questionnaire, fixed response, and open-ended questions	Descriptive statistics, manifest content analysis	I
	12 medical students	Individual semi-structured interviews	Inductive latent content analysis	II
Combined group and one-to-one mentoring, semesters 1-11	16 medical students	Individual semi-structured interviews	Directed latent content analysis	III
				IV

The four studies are consecutive and build on each other. Results from the earlier studies guided further work.

## 5.2 CONTEXT AND PARTICIPANTS

Participants in the four studies were medical students with experiences of mentoring during their undergraduate education at Karolinska Institutet, Stockholm, Sweden. Experiences from two different forms of mentoring were explored: one-to-one mentoring during the first clinical courses, semesters 5–8, and combined group and one-to-one mentoring throughout the entire educational program, semesters 1–11. The aim of both mentoring programs was to facilitate the students' professional and personal development. The duration of the undergraduate medical education program at Karolinska Institutet is 5.5 years. Briefly, the program consists of four semesters with mainly preclinical courses, followed by seven semesters with mainly clinical courses.

A pedagogical project was started in the undergraduate medical program at Karolinska Institutet in 2005. The project was connected to one of the teaching hospitals in Stockholm, Södersjukhuset, where medical students had some of their clinical courses. The whole project is described in a separate report (Hyllin et al., 2009). One of the ideas behind this project was to improve continuity for the students by greater coherence. This was provided in such a way that students had all their clinical courses in semesters 5 to 8 at the same hospital, and during that time they had an appointed mentor. The mentors were clinical physicians working at the same hospital.

About one year before that project was ended, Karolinska Institutet introduced a new curriculum in their medical program. In the new curriculum a module called Professional Development was introduced throughout the program. That module of the curriculum includes medical ethics, medical psychology, leadership, consultation skills, personal development, humanity and medicine, gender and diversity, medical laws, and healthcare economy and organization. A combined group and one-to-one mentoring program was introduced as part of the Professional Development Module. The curriculum and the Professional Development Module are described on the Karolinska Institutet website (Karolinska Institutet, 2007).

Both mentoring programs described above, the one-to-one mentoring program in the project and the combined group and one-to-one mentoring program in the new curriculum, constitute the contexts for the four studies in this thesis. In the following, both mentoring programs are described in more detail in separate sections.

### **One-to-one mentoring**

The one-to-one mentoring program was in progress during 2005–2008. All medical students in four consecutive classes, starting their fifth semester with clinical courses at Södersjukhuset, were offered a personal mentor. Students and mentors were randomly matched and they were recommended to meet 2–4 times per semester. The content of their meetings was not regulated and they shared the responsibility for the planning of the mentoring meetings. The meetings were not scheduled. Every student was offered a mentor, but participation in the program was voluntary. The mentors were physicians at the hospital and they were recruited on a voluntary basis. They were invited to participate in a two-day course before becoming a mentor. The course, described in a

separate paper, included information about the goal of the mentoring program, their role as mentors, different learning strategies, communication training, and equality issues (Stenfors-Hayes et al., 2010). All mentors received literature on being a mentor (Hultman and Sobel, 2005) by way of an introduction and preparation. The role of the mentor in this program was to support the students' professional and personal development in confidence, and not to teach or assess knowledge. Their function was to listen and be responsive to the students and their needs, to act as sounding boards, and to be supportive. The role was neutral in the sense of not assessing or judging the students' performance, nor further reporting the students' performance to the faculty. Some of the mentors invited their students to follow them in their clinical work. The mentors received economic compensation for the time they spent in mentoring meetings.

### **Combined group and one-to-one mentoring**

The combined group and one-to-one mentoring program was introduced in 2007 as a mandatory part of the medical education program. Small groups of students met their mentor once a semester, during semesters 1-11, on a workshop day. Also in this program, students and mentors were randomly matched. The workshop days had a main focus on humanistic aspects of the professional role and included fixed activities. There were also opportunities to adjust the workshop days according to the wishes and needs of the student group. The included activities were:

- Video session with different patient encounters between the physician and patients or relatives, followed by reflection and a group discussion about the situation and how to handle it as a professional. The videos illustrated important medical, ethical, and psychological aspects in different patient encounters and they increased in complexity. During these sessions both the mentor and the students could discuss their own experiences. Scientific articles connected to the content in the videos were provided for further reflection individually or with peers.
- Individual conversations with the mentor, including self-assessment of personal and professional development using a self-assessment form based on CanMEDS's seven roles of a physician and competences connected to these roles. Student, together with mentor, performed an action plan for improvement to follow up the next workshop day.
- Students were offered to follow the mentor in his/her clinical work to see him/her acting in the role of a physician. This session could be part of the workshop day or take place at another appropriate time.

The mentors were physicians, working actively in the healthcare system, mainly at hospitals. Each mentor followed a group of 4 students throughout their education from semester 1 to semester 11. The mentors were recruited as volunteers based on recommendations taking due account of their interest and talent for supervision of students. Formal pedagogical competence was not required. The mentors were invited

to two-hour meetings before every workshop day to get prepared for the video session and to share experiences with other mentors. The meetings were also aimed at helping the mentors to develop their own roles as both mentors and professionals. The role of the mentor in this program was, as in the one-to-one mentoring program to support the students' professional and personal development in confidence, not to assess or judge the students' performance, nor report the students' performance to the faculty. The mentors had the responsibility of initiating and performing the included activities. Also in this program, the mentors received economic compensation for the time they spent as mentors (personal communication, Seeberger & Kiessling).

## Participants

### *Study I*

All 118 students in the four consecutive courses who had been offered a mentor in the one-to-one mentoring program were first included in the study. Seven of the students reported that they had not established any mentoring relationship and had no experience of mentoring, so they were excluded. The remaining 111 students were included in *Study I*.

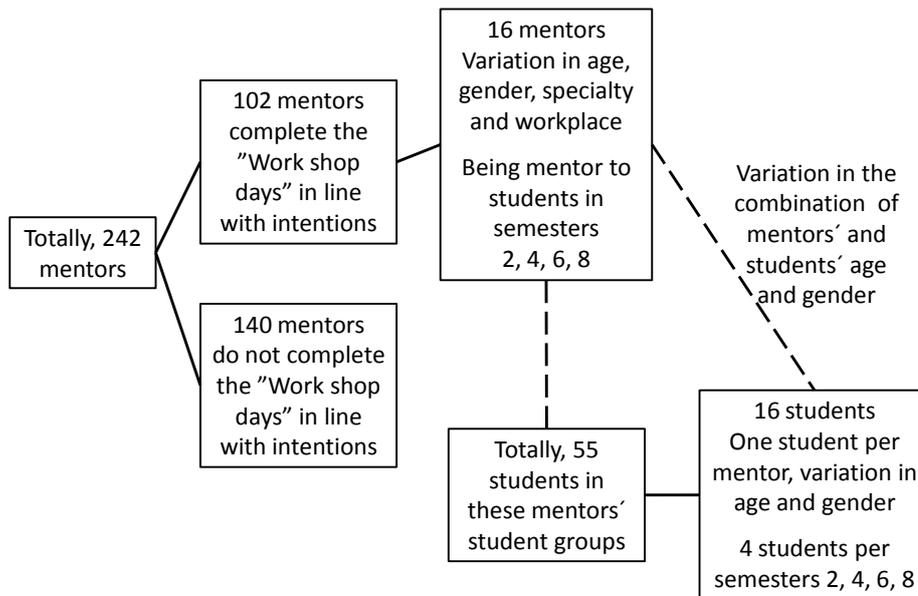
### *Study II*

For *Study II*, a purposeful sample of participants was used to achieve variation and breadth in the data (Patton, 2002, Polit, 2012). Twelve participants (of totally 111) were chosen with variation of the characteristics of both students and their mentors regarding the combination of their age and gender. In a purposeful sampling strategy, participants are selected who will contribute information to what is being studied (Polit, 2012). The logic of purposeful sampling is to select information-rich cases for in-depth study (Patton, 2002). A criterion required to participate was to have met the mentor three times or more during the two years of mentoring, which was checked with the students when inviting them to participate in the study. Five of the 12 participants were men and 7 were women, aged 25–38. The participants in *Studies I and II* originated from all four of the consecutive classes in the one-to-one mentoring program.

### *Studies III and IV*

About 1000 students participated in the mentoring program at the time for data collection for *Studies III and IV*. A purposeful maximum variation sampling strategy was used to obtain breadth in the data (Creswell, 2007; Patton, 2002; Polit, 2012). In the maximum variation approach, some criteria are determined in advance to differentiate participants, and participants are selected with differences in these criteria (Creswell, 2007, Polit, 2012). The intention was to capture participants with different experiences for the studies; therefore, the sampling process was based on characteristics of both the students and their mentors. The selection was also based on criteria related to students' experiences of the activities during the workshop days, the semester, age, gender, mentors' specialty and workplace, and the combination of age and gender of the peers of mentors and students. The sampling process started with the mentors and was conducted in several steps (Figure 3):

1. First, an electronic questionnaire was sent to all of the 242 mentors. They were asked about how they performed the workshop days, and they had to state their age, gender, specialty, and workplace. The response rate was 82%.
2. Mentors and their student group were regarded as being eligible if the mentors responded that their students were in semester 2, 4, 6 or 8, and if they performed the intended activities during the workshop day, i.e., the video sessions followed by discussions in the group and individual conversations with each student using the self- assessment form.
3. Out of 102 mentors meeting these criteria, a sample of 16 was selected with the aim of ensuring differences regarding the combination of age, gender, specialty, workplace, and which semester their students were in at the time. Most of these mentors answered that their students also had followed them in their clinical work one or more times.
4. Finally, 16 students were selected from these mentors' student groups in the following way: one student per mentor, 4 students from each semester (2, 4, 6, and 8) with differences regarding the combination of students' age and gender.



**Figure 3.** Flowchart of the sampling process for participants in *Studies III and IV*.

Two of the initially selected participants declined to participate and four could not be contacted by telephone or e-mail, so that new participants were selected following the same sampling procedure. The participants included in *Studies III and IV* were in the age range of 20-29 years, 8 men and 8 women.

### 5.3 DATA COLLECTION

Data for *Study I* were collected using an electronic questionnaire, and data for *Studies II, III, and IV* were collected using individual semi-structured interviews. Semi-structured interviews with open-ended questions were chosen because they can be used

to get access to individuals' experiences, opinions, feelings, and knowledge (Patton, 2002). Semi-structured interviews seek to understand something in the daily life world from the interviewed individuals' perspective. Their aim is to obtain descriptions from individuals about a phenomenon in their life world and to interpret the meaning of that phenomenon (Kvale and Brinkmann, 2009). Interview guides with open-ended questions were used to ensure that all interviews covered the particular subjects of interest for the respective study. Questions in an interview guide cover topics or subject areas of interest and the interviewer is free to explore and ask follow-up questions to further illuminate particular subjects (Patton, 2002, Polit, 2012).

The number of participants in interview studies depends on the purpose. It is usual that the number of participants in interview studies is 15 +/- 10. A large number of participants generate a huge amount of data which can impede a deeper interpretation of the material (Kvale and Brinkmann, 2009). In *Studies II, III, and IV*, 12–16 participants were judged to be appropriate for the purpose of obtaining data covering a variety of aspects, and for enabling an interpretive analysis.

Data collection for *Studies I and II* took place in the spring of 2008, 1–14 months after the students had completed the one-to-one mentoring program. Data collection for *Study I* was completed when data collection for *Study II* started. Data collection for *Studies III and IV* was conducted in the spring of 2011.

## **Study I**

The electronic questionnaire was distributed by e-mail to the students. It was based on a mentoring evaluation questionnaire for nursing students (Suen and Chow, 2001) and a framework of undergraduate teaching activities (Ross and Stenfors-Hayes, 2008). The questions were related to the students' experiences of professional and personal development, the mentoring relationship, the content of their conversations, and how the students experienced the role of the mentor. Most of the questions had fixed response alternatives (not at all, to some extent, to a great extent, and to a very great extent), one question, regarding the student's overall opinion of the mentoring program, involved a Likert rating scale of 1–6 (Hulley et al., 2007). There were also a few open-ended questions. The questionnaire was open 26 days and three reminders were sent by e-mail. The response rate was 67%.

## **Study II**

The areas of interest in this study were the content of students' conversation with the mentor, their experience of the relationship, the meaning of the mentorship for their professional and personal development and their general view of mentoring. A pilot study with two interviews was conducted to test the interview guide. The 12 interviews were conducted at a department of Karolinska Institutet located at Södersjukhuset, the hospital where the students had their courses when the mentoring program was running. The 12 interviews yielded 9 hours of recorded material.

## **Studies III and IV**

These studies are based on data from the same 16 interviews. Before data collection and construction of the interview guide, an orientation concerning the combined group and one-to-one mentoring program was conducted. The orientation consisted of reading course documents, getting information from the faculty about the mentoring program, two individual interviews with mentors, and one group interview with 6 students. The areas of interest in the interview guide were the students' experiences of the workshop day, the mentoring relationship, the group discussions, the individual conversations with the mentor, thoughts about their own development, and experiences from following the mentor in his/her clinical work. The interviews were conducted at three clinical skills centers at hospitals in Stockholm and at the library of Karolinska Institutet. The 16 interviews yielded 13 hours of recorded material. The first interview was transcribed, read, and discussed in the research group before the rest of the interviews were conducted to pilot the interview guide. All interviews were recorded with consent, and memos and the interviewer's own reflections were written down after each interview.

## **5.4 ANALYSIS**

### **Study I**

Data obtained from fixed response questions were classified as nominal and ordinal variables and analyzed using descriptive statistical analysis (Polit, 2012). Frequency tables were used and data were presented in percentages and/or numbers. Comparisons between groups were made by using cross-tables, and differences between variables were tested using Chi-square or Fisher's exact test (Polit, 2012). The results were regarded as significant if  $p$  was  $< 0.05$ . The statistical software SPSS 15.0 was used for the statistical analysis (Wahlgren, 2005). Data from open-ended questions were coded and categorized using manifest content analysis (Dahlberg, 1993). Manifest content is the visible and obvious content in a text or communication (Downe-Wamboldt, 1992; Graneheim and Lundman, 2004).

### **Study II**

An inductive latent content analysis (Patton, 2002; Graneheim and Lundman, 2004) was performed in several steps. First, the recorded interviews were transcribed verbatim and checked with the audio files to ensure consistency. The 12 transcribed interviews taken together were regarded as the unit of analysis. The text was read several times to obtain a sense of the whole (Graneheim and Lundman, 2004). Then meaning units were identified and highlighted. Meaning units were sorted into content areas close to the question areas in the interview guide. This first classification was abandoned since it appeared to be superficial and had no depth. Meaning units were then condensed into shorter texts close to the original and classified into new content areas to get a new view of data and capture the latent meaning. The content areas were "content of the mentorship", "function of the mentorship", and "when/how did they

meet?” Meaning units were then labeled with codes. Codes with the related content were grouped together into 6 categories. The categories were judged to obtain internal homogeneity and external heterogeneity (Patton, 2002). Furthermore, the categories were interpreted into three themes: “space”, “belief in the future” and “transition.” Codes and categories constitute the manifest content of a text while themes are derived from the underlying meaning of a text, the latent content (Graneheim and Lundman, 2004). Content areas, codes, categories, and themes were frequently discussed in the research group during the analysis process until a consensus was reached.

### **Studies III and IV**

A directed approach to content analysis was conducted to extend the understanding of mentorship in relation to findings in *Study II*. The findings from *Study II* were used to guide the initial analysis process. The first phase of the analysis included all data for both *Studies III and IV*. First, the 16 recorded interviews were transcribed verbatim and checked with the audio files to ensure consistency. Then the text was read while listening to the interviews, and memos and reflections were written down in the meanwhile. Meaning units related to the aim were highlighted, condensed, and then classified into three content areas. The content areas were the themes from *Study II*. Data classified into the “space” area were regarded as the unit of analysis for *Study III*, while data classified into the “belief in the future” and “transition” areas were regarded as the unit of analysis for *Study IV*. When this phase of the analysis was completed, the rest of the analysis was continued as two separate and consecutive processes.

The analysis processes in *Studies III and IV* were conducted in a similar way, using the same steps. Meaning units were coded using the previous codes from *Study II*, with great openness for new codes for data that did not fit into these codes. All of the previous codes were used, however, new codes were created for the main part of the data. Codes judged to have a related content were grouped together into categories and were interpreted into themes reflecting the underlying meaning. In *Study III* the codes created 20 categories interpreted into five themes related to what the mentoring created opportunities for and what happened in that environment. In *Study IV* the codes created seven categories interpreted into three themes related to developmental processes in the students. During the processes the analysts moved back and forth from parts to the whole. Codes, categories, and themes were frequently discussed in the research group during the analysis processes until a consensus was reached. The analyses were regarded as being inductive since the process was conducted with openness for what the data tell, without being guided by theories or complete coding schemes.

### **Software package for qualitative analysis**

The analysis processes in qualitative studies are systematic with analytical rigor, and the analysis of qualitative data is time-consuming. To facilitate the analysis process, data can be organized in a software package for qualitative analysis (Patton, 2002; Polit, 2012; Burnard et al., 2008). When using software to assist the analysis of

qualitative data, the researcher still has to be the analyst and critical thinker (Polit, 2012).

In *Studies II, III, and IV*, the QSR NVivo software package (QSR International, 2011; Bazeley, 2007) was used to assist in the work when organizing data into content areas and when coding data. All decisions in all steps of the analysis were judged and made manually; the software package QSR NVivo was only used as a technical tool for handling the data. The program enabled movement back and forth between separate pieces of data and their main source and context.

## **5.5 ETHICAL CONSIDERATIONS**

Ethical considerations in research have to be taken into account in several respects (Kjellstrom et al., 2010). The studies in this thesis were conducted according to the Helsinki Declaration. Applications for ethical approval were sent to the Regional Ethical Review Board in two steps. The first application referred to *Studies I and II*. The second application referred to *Studies III and IV*. For both applications, the Board concluded that no ethical permission was required according to Swedish law.

All students participated voluntarily in the studies and they were informed that they could withdraw at any time with no negative influence on their study results or grades. The studies were considered to neither involve nor exclude specific vulnerable groups, nor to attract participants with benefits. Information about the nature and purpose of *Study I* was sent electronically to the participants at the same time as the questionnaire was sent, and the participants were informed that they gave their consent by returning the answered questionnaire. Information about the nature and purposes of *Studies II and III-IV* was first sent by email to the participants, and they were then asked by telephone if they were willing to participate. Informed consent was obtained from all participants and they were guaranteed full confidentiality. Written consent was obtained from each student before the interviews started and they were asked for permission to record the interviews.

Ethical considerations regarding methods for data collection were done by the research group when designing the studies. We refrained from using focus group interviews, instead of, or in addition to, individual interviews, so as not to expose the participants to reveal personal thoughts and experiences of mentoring, details of the mentoring relationship and the students' own development in front of other students. We considered that individual interviews would be more comfortable for the participants.

## **5.6 REFLEXIVITY**

Reflexivity is required in qualitative research and means being conscious of one's own perspective and role in the research process, taking this into account and communicating one's own perspective and voice (Patton, 2002, Lincoln and Guba, 1988). My background and perspective is derived from the field of nursing and clinical medical education in the context of healthcare at an emergency hospital in Stockholm. I

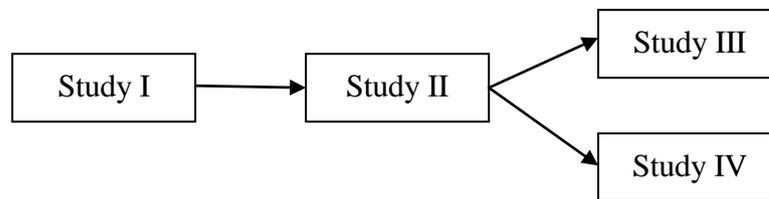
have many years of experience of clinical supervision, both individual supervision of nursing students and supervision of interprofessional student teams. In this research project I considered myself to have both an insider's and an outsider's perspective: an insider's because I am familiar with the clinical medical context and the different professions in that context and an outsider's because I am not a physician myself and have no own experience of being a medical student or having any physician among my relatives. I was involved in the administration of the one-to-one mentoring program during the last years it was in progress, but I was not known personally by the students in the program, nor did I have any relationship with them in other educational activities. If I had been a well-known person to the participants in the studies, it could have influenced our communication during the interviews and also their responses. The students would not have experienced any power relationship or dependency during the interview sessions, or by participating in the studies. I was not involved in the planning or performance of any of the mentoring programs and had no own interests regarding benefits or positive outcomes of the studies. During the work I have consciously tried to be open-minded: open-minded in the interviews, open for what the data say, open for the new and the unexpected, and for both positive and negative experiences of mentoring. To work in line with the overall aim, I have focused on data related to the meaning of mentoring for the students' development.

As a novice researcher at the beginning of the work, I had limited experience of interviewing. During the process, my communication skill as an interviewer was developed. The interview sessions became more like conversations with the students, but still covering all the topics in the interview guide. Greater communication skill, from novice to a more experienced interviewer, may have influenced the quality of the interviews in the different studies. In the first phase of this project, I was not so clear about my epistemological stance. During the doctoral education and the process of this work, my epistemological assumptions have become more anchored in the field of qualitative research tradition and its epistemological stance.

## 6 FINDINGS

The four studies in this thesis explored medical students' experiences of mentoring during their medical education. The findings from each study are presented in this chapter.

*Studies I and II* explored experiences of one-to-one mentoring and *Studies III and IV* explored experiences of combined group and one-to-one mentoring. The aim of both forms of mentoring was to support the students' professional and personal development. The four studies were made in the same order as they are presented in this chapter. The findings in *Study I* guided the work in *Study II*. The findings in *Study II* guided the work in *Studies III and IV* (Figure 4). In the qualitative studies (II, III, and IV) the findings are reported in the plural, in terms of "the students" or "they", regardless of the number of statements, students, and interviews generating the finding.



**Figure 4.** Overview of how the studies relate to each other.

### 6.1 STUDY I

In the first study, an electronic questionnaire was sent by e-mail to all students ( $n = 118$ ) participating in the one-to-one mentoring program. Seven of the respondents had never met their mentor, so they were excluded from the study. The results are based on responses from 74 of 111 eligible students (RR = 67%). Twenty-eight of the respondents were men and 46 were women, 57 students were aged 20–29 and 17 were aged 30 or older.

During the two-year mentoring program, 38% of the students had met their mentor 6 times or more, 41% had met the mentor 3–5 times and 20% had met the mentor 1–2 times. Fifty percent of the students had also followed their mentor in his/her clinical work. Seventy-six percent of the students experienced barriers to mentoring meetings. The most experienced barriers were related to logistics and lack of time, for both the students and the mentors.

Seventy-eight percent of the students experienced that the mentoring program had facilitated their professional development and 63% that it had facilitated their personal development. These questions had the fixed response alternatives *Not at all*, *To some extent*, *To a great extent* and *To a very great extent*. The result was an addition of the latter three alternatives, where most of the answers were *To some extent* and *To a great*

*extent.* The most frequent topics discussed with the mentor were education in general, the future career, the role of being a physician, the combination of work and private life and being a medical student. More than half of the students (55%) stated that they did not get feedback on their development from the mentor.

Students' overall opinion of the mentoring program was rated as 5 (median value) on a Likert scale of 1–6 (1 = worst possible, 6 = best possible). Female students and students aged 20–29 rated the program higher than male students and students aged 30 or older. No difference was found on comparing ratings between students with and students without physicians among their relatives or friends. Nor was there any difference in the ratings of the program in the four different classes.

The mentor was mainly perceived as respecting the students, being interested in the students' needs, sharing experiences, providing perspectives, guiding, and giving emotional support. Most of the students, 89%, did not feel negative stress or pressure from the mentor. Having a mentor was described in free comments as rewarding, reassuring, good, fun, and important. Some students answered that it was unnecessary to have a mentor. Positive comments about the program were described in seven categories: someone to talk to who is not connected to the course, getting insight into the professional role, support, fellowship, continuity, being seen and getting references. Negative comments about the program were described in five categories: no need for a mentor, mentor not interested, hard to find time for meetings, unclear purpose, and incompatible personal chemistry. Proposed improvements were scheduled meetings and the possibility of choosing the mentor.

## 6.2 STUDY II

In this study, 12 students in the one-to-one mentoring program were interviewed individually about their experiences of the mentorship in order to further explore this area. Issues of interest in the interviews were the content of the students' and the mentors' conversations, the mentoring relationship, and the students' expressions concerning the meaning of the mentorship. The analysis resulted in three overarching themes with underlying categories.

The themes were:

- Space
- Belief in the future
- Transition

### *Space*

The mentorship was experienced by the students as a space, a *free zone*, alongside the educational program where they could bring up questions they did not talk about with teachers or others, i.e. things related to their lives and experiences of becoming a doctor. There were no pressing requirements in this space; students could bring up uncertainties and doubts without any risk of being judged or assessed. They discussed how to balance work and private life, and reflected on different events from the clinical placements on a more social level with the mentor. It was relieving to process events

with someone who understands, and then leave it behind. It gave a *sense of security* to have a personal contact lasting for a longer period and to know that they could always get in touch if they needed to meet the mentor. Some students experienced support from the mentor; others knew that they had the opportunity to get support if they needed to.

#### *Belief in the future*

By talking to the mentor, the students got *hope* that it will be fun to work as a doctor in the future and that it is possible to combine a professional career with family life and children. They talked about future choices and the mentor told about his/her own choices in professional life. It gave an optimistic sense for the future when the mentor confirmed that the students actually fit in as doctors. The students' *motivation* to learn was influenced by the mentors' advice to learn by curiosity and to learn from one's own emotional experiences. The mentoring meetings reinforced the students' desire to finish their studies and start working as doctors; the will and desire to finish increased.

#### *Transition*

The conversation with the mentor gave insight into the professional role of a doctor, and the students could start to identify themselves with the new role, in the sense of *becoming a doctor*. They got guidance on how to handle different situations, for example, how to respond to patients and relatives and how to deliver bad news. They thought it was important to learn to talk with their colleagues about such things early on in their training. The students became aware of the mentor's and their own behavior and could reflect on how they wanted to act as doctors in the future. They got more courage to believe in themselves and to grow as persons. Talking to the mentor gave an opportunity to get new perspectives on issues and a broader view. A feeling of fellowship and not being alone emerged when sharing experiences and interests with the mentor. The connection to the mentor gave a feeling of being welcome into the community of doctors as a colleague, to be included and to *belong to the community*. Students who had followed the mentor in clinical work could see from the inside how things worked in the clinic, and see the professional role from behind the scenes. They also gained insight into social interactions between colleagues and other members of the staff. Students with no doctor among relatives or friends thought they had a greater need for a mentor – to have a relationship with someone who is more experienced and knows how it is to be a doctor.

### **6.3 STUDY III**

To extend the understanding of the meaning of mentoring the theme 'Space' was explored further in combined group and one-to-one mentoring. Individual interviews were conducted with 16 medical students in different semesters about their experiences of the mentorship and the workshop days. The analysis resulted in five themes related to what this form of mentorship created space and opportunities for.

The themes were:

- Psychosocial support by the mentor
- A relationship with a physician beneath the professional surface
- A space for something else
- Awareness of one's own development
- Reflection and learning with peers

The first theme described the mentor as providing *psychosocial support*. The mentors were experienced as sounding boards and giving good advice. Students expressed that they felt trust and confidence in their mentors, and they could talk about their worries and get distance to different events. The mentors supported the students in such matters as prioritizing and time structure, and seeing connections between well-being in the personal life and study results in the professional life. Some students thought they could have used the mentorship in a better way, but it was their own responsibility to grasp that chance.

The relationship with the mentor was experienced as being more personal than relations with other physicians they had met as teachers or supervisors. It was *a relationship with the person behind the professional surface*. The relationship was described as being both personal and distanced. Even if they did not meet very often nor had a close relationship, the mentor was perceived as an appointed person who talked and listened to them in a personal way. It was the only person who followed them throughout the entire medical program.

The mentorship and the workshop days were experienced as *a space for something else*, a space in which to talk about those other things and to think outside the box. The group and the individual parts of the day seemed to offer different forms of space: the students brought up different things in the group and as individuals with the mentor. They could bring up subjects they did not talk about anywhere else in the educational program, things such as social aspects of the professional role, ethics, and morals. In this space there were no requirements to perform or to be assessed. It was a safe and fixed point to come back to continuously.

Continuity and recurrent reflection about oneself with the mentor led to *awareness of one's own development*. The students discussed the self-assessment form individually with the mentor and reflected on their development from both personal and professional aspects. They became aware of their own personality, understanding oneself and how one works. The mentor could compare, see differences, remind students of earlier discussions about strengths and weaknesses and give feedback.

The group sessions created opportunities for *reflection and learning with peers*. It was appreciated by the students to be able to discuss difficult issues such as ethics and professional behavior in a group. In these sessions they had to put thoughts into words and explain things to others. They reflected together on situations in the videos and could sometimes relate to their own experiences. To share thoughts with others led to a broader perspective, seeing situations from other points of view. The atmosphere in the group was described as relaxed and permissive.

## 6.4 STUDY IV

In this study the meaning of mentoring was explored by further investigating the themes ‘Belief in the future’ and ‘Transition’ in the context of combined group and one-to-one mentoring. Data were derived from the same student interviews as in *Study 3*. The analysis resulted in three themes related to medical students’ process of becoming a physician.

The themes were:

- Integrate oneself with the future role as a physician
- Exciting clinical experiences with the mentor give incentives to learn
- Towards understanding the professional competence of a physician

### *Integrate oneself with the future role as a physician*

Early clinical experiences with the mentor gave the students a *vision of their future life as a physician*. They got a view of the goal and could see that they had made the right choice of education and occupation. They got a picture of the profession by seeing *what* the mentor does and *how* the mentor does it, the tasks of a physician, and how the healthcare system is organized. They got an insight into the profession by taking part in the mentor’s experiences of how to handle different situations. They talked with the mentors about how to combine professional life with private life. To see how the mentor handled different situations gave *hope to manage it oneself one day*. This involved the professional role, private life, and different career choices. They could see that the mentor shifted from being the person in and the person behind the professional role, and realized that *the personal and the professional are interlinked*. During the mentorship the students became aware of their own personality and imagined how they would fit into the professional role. They noticed personal development and their own maturation during the ongoing program. They came to an insight that the personal and the professional are associated and that, to find a balance in this combination, you have to be a professional based on the person you are.

### *Exciting clinical experiences with the mentor give incentives to learn*

Following the mentor in the clinical work and getting *clinical experiences with the mentor yielded motivation* and gave meaning to the purely academic world and to theoretical studies. They could put the theoretical into a clinical context and saw that the knowledge was needed. It was exciting and encouraging for the students to see the reality, and they looked forward to graduating and working as a physician. The students stated that it was most engaging and exciting to follow the mentor in the clinical work in the early semesters, but in later semesters it was less interesting when they had more experience from the clinical courses. They were invited to follow the mentors whenever they wanted, even in later semesters, and felt they could use that offer better. The mentoring relationship enabled an early access to the clinical environment and gave legitimacy to being there apart from the courses. The students showed a great interest in medical issues and *learned about medicine in the clinic*. They were not so active in situations with patients in the clinic, but more like observers. Sometimes they had the opportunity to suggest activities they wanted to see or practice. They had many medical questions for the mentors and saw that reality is not always consistent with what is in

the books. They could reveal their ignorance to the mentors without any risk of being assessed.

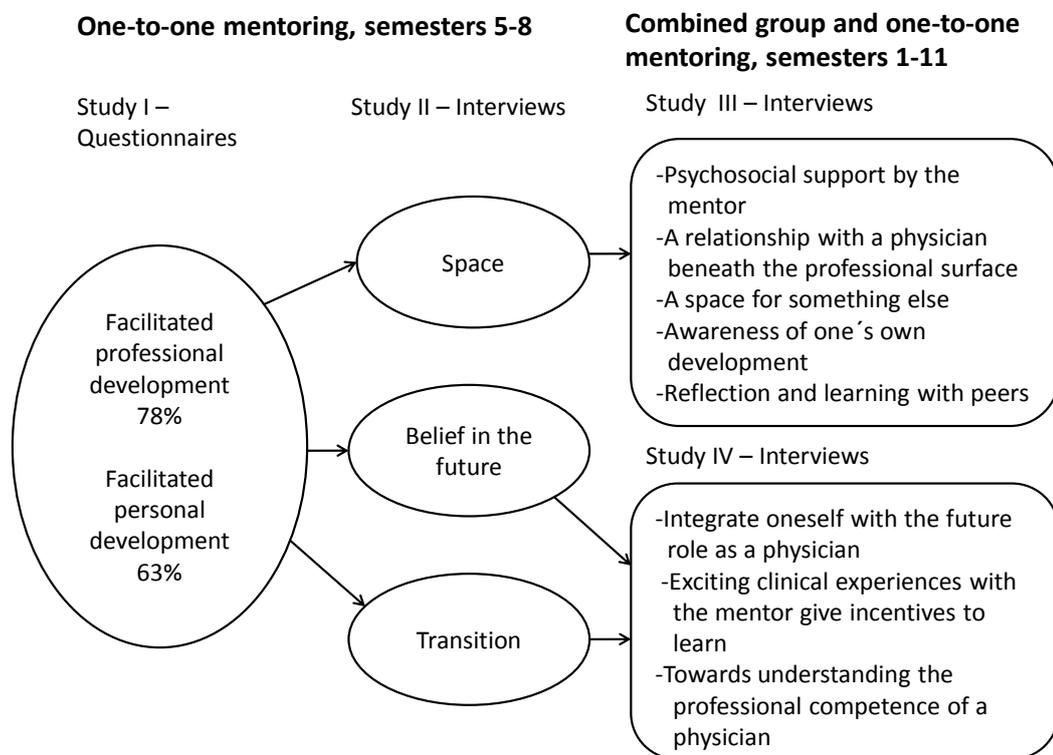
*Towards understanding the professional competence of a physician*

It was hard for the students to assess themselves according to the physician's professional roles in the assessment form, especially in the early semesters. It was also hard to understand the different areas of competence and the roles. In the early semesters it was easier to focus on strengths and weaknesses connected with their own personal characteristics. The role of the medical expert was experienced as being easiest to understand. The role of health advocate seemed to be most diffuse for the students. Several roles were perceived as irrelevant at the beginning of the mentorship but acquired more meaning the farther they came in their education and could relate to something concrete. In the later semesters they had an *orientation about the physician's competence areas* and cited the roles of communicator, collaborator, manager, scholar, and professional. They also mentioned leadership, organizing and planning, scientific ability, professional development, and empathy as competences of a physician. Different parts of the profession became clearer and they could get a sense of the wholeness and complexity of the profession.

The students became aware of the importance of professional behavior during the workshop days and paid attention to attitudes in the videos, by watching the mentor's behavior in action and by reflection on their own experiences. In the beginning, it was not so clear that difficult patient encounters were part of the profession. Later on, they realized that they will have to face such difficulties in the future and it became important to get prepared for it. They discussed ethical situations and thought that professional behavior and how to communicate with patients became more and more relevant and important the closer they came to the professional life. They became aware of their own behavior, and their understanding of professional behavior developed so as to see learning of such competence as a successive process which has to be learned by experience. Such development takes time, and this was also noted in their private lives. The group discussions provided perspectives for seeing several ways to handle different situation, that this is often context-dependent with no right or wrong. They *learned about professional behavior* and got more self-confidence after these discussions. They thought they had got a foundation to build on for future situations.

## 6.5 OVERVIEW OF THE MAIN FINDINGS

The four studies were conducted consecutively and the findings from earlier studies guided the following work. The questionnaire in *Study I* showed that the students experienced, to different extents, that one-to-one mentoring had facilitated their professional and personal development. In *Study II* the meaning of one-to-one mentorship was explored further by means of interviews, and the themes *Space*, *Belief in the future*, and *Transition* were found. *Studies III and IV* further explored these areas in the context of combined group and one-to-one mentoring. The main findings of *Study I*, the themes in *Studies II, III, and IV*, and how the findings from each study relate to the next study are illustrated in Figure 5.



**Figure 5.** Overview of the main findings in *Study I–IV*.

## 6.6 ADDITIONAL DATA

### Students' suggestions for improvement

In *Studies III and IV*, the students were also asked for suggestions for improvements in the combined one-to-one and group mentoring program. Their suggestions are regarded as complementary information in this thesis and are listed below.

- More frequent meetings with mentor and student group.
- Do not place the workshop days in the schedule just before exams when the students are under time pressure and are focused on the exams.
- Place the workshop days in the beginning of the semester, in order to have the action plan for development in mind during the semester.
- Smaller groups would be more effective, because the students' individual conversations with the mentor led to long waits for one's turn for the rest of the group.
- Consider if it has to be mandatory.
- Possibility to choose the hospital for mentoring meetings/workshop days.
- Possibility to change groups if you do not fit in with the students or mentor.
- Mentors should be clinically active in patient care, not scientists or working in the lab.
- Integrate the content of the workshop days more with other parts of the educational program.
- More discussions about ethics and morals.
- Mix the fixed content with what students want to talk about, be more open for what students want, not always following the questionnaires in the video sessions.
- Get a bun sometimes.

### The mentors' perspective

The questionnaire sent to the mentors in the sampling process for *Studies III and IV* contributed valuable information for implementation of and compliance with mentoring programs in medical education. The purpose of the questionnaire was, firstly, to get necessary information for the sampling process. However, it was also an opportunity to get information about how the workshop days were actually implemented in relation to the stated intentions, how the different parts of the mentoring program worked, and if the mentors experienced any practical problems related to the performance of the workshop days. Information gathered from the survey is summarized below.

#### *Implementation of workshop days*

The video sessions were implemented by almost all (98%) of the mentors, who stated that they watched and discussed the videos with the students every workshop day. Fewer mentors (67%) used the self-assessment form every time individually with their students. Some mentors having students in semester 1 reported in free comments that they had not started to use the self-assessment form yet, but intended to introduce that part of the workshop day next time they met their student group. Some mentors

reported that they did not consider that use of the self assessment form was relevant. Only 21% of the mentors answered that their students followed them in their clinical work in connection with the workshop day. However, 50% of the mentors stated that their students *sometimes* followed them in their clinical work. They also stated that students in the early semesters were most interested in following them in their clinical work.

*Practical problems experienced by the mentors*

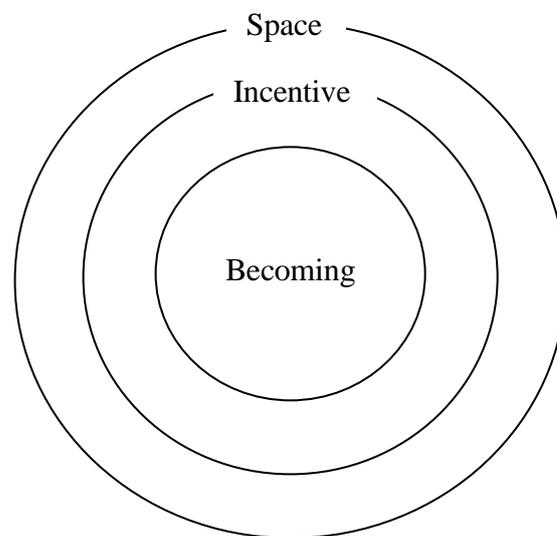
Practical problems experienced by the mentors were mostly related to their own difficulties to get allocated time from their clinical duties: both for the performance of the workshop days and for participating in the educational meetings for mentors before each workshop day. Another problem the mentors brought up was that the workshop days were often placed in the students' schedule just before exams, so that the students sometimes seemed to focus on other things and were perceived as not being motivated to take part in the workshop days.

Also in the one-to-one mentoring program, a lack of time for mentoring meetings was brought up as a problem by the mentors. In that program some mentors also perceived their students as not being interested, and since it was not mandatory or scheduled, it was easy to lose contact with each other (Stenfors-Hayes et al., 2010).

## 7 DISCUSSION

The overall aim of the thesis was to deepen the understanding of the meaning of mentoring for medical students' professional and personal development and contribute new knowledge that can be used when designing mentoring programs for medical students in the future. The thesis contributes new knowledge about the meaning of mentoring from the medical students' perspective in the European context.

The main findings about the meaning of mentoring for medical students' professional and personal development were related to the areas of *Space*, *Incentive*, and *Becoming* (Figure 6). The mentorship was experienced as a space for "something else than the usual." *Space* was the developmental environment for which conditions were created by the university with aspects of structures, content, role of the mentor, continuity, etc. This space created opportunities for the students to have a personal relationship with a professional, to get psychosocial support, and to develop their reflective capacity. *Incentive* was connected with the motivation and hope that the mentorship contributed in this space; motivation to learn by making meaning and giving hope to be able to work as a physician in the future. *Becoming* involved what happens within the students in this space and is related to a new understanding of the wholeness of the profession and students' identity formation in the process of becoming a physician.



**Figure 6.** Illustration of the main areas in the findings. Space is the developmental environment created by the university, Incentive is what it brings to the student and Becoming is the student's identifying and learning process in becoming a physician.

The findings include several aspects of what mentorship can mean and contribute to medical students' professional and personal development. Some findings were strengthened or expanded in the following studies, while other findings were only seen in one or the other of the programs.

## 7.1 SPACE FOR DEVELOPMENT

In this thesis the mentorship emerged as a space for something else than the usual in the educational program, a space or environment in which to address the other subjects. In both forms of mentorship, the students experienced psychosocial support by the mentor (*Studies I, II, and III*). They experienced the relationship as being personal, coming behind the professional mask of a physician and seeing the person behind it. It was experienced as a free zone, with no risk of being judged or assessed, and permissive enough to be able to reveal one's feelings, thoughts, and doubts (*Studies II and III*). Individual mentoring seemed to have a special value since there were issues students needed to talk about with the mentor, but did not want to share with their peers (*Study III*). It was remarkable that students in the combined mentoring program experienced the relationship as personal even if they only met the mentor once a semester and described the relationship as having both closeness and distance (*Study III*). One explanation for why the relationship reached a personal level may be that the content of the meetings was directed and involved discussions about professional behavior in difficult patient-encounter situations, and the self-assessment of competences were related to the students' own development and personality. The fixed activities in the combined program were therefore regarded as strength, since they led the conversations and reflections into more personal areas such as personality, weaknesses, professional behavior, and one's own development. However, there may be a risk in having a strict and directed content if it is too formal and thereby hinders the mentoring relationship from being dynamic and open (Mathisen, 2009).

Both forms of mentorship (*Studies II and III*) created space and opportunities for development of the more elusive professional competences of a physician, such as the reflective, collaborative, integrative, relational, affective, and moral aspects of competence (CanMEDS, 2005; Epstein and Hundert, 2002; Forslund, 1995). The content of the students' conversations and reflections with mentors and peers were related to those areas of competence. More aspects of reflection were seen in *Study III* than in *Study II*. Reflections in *Studies II and III* were related to the students' own experiences, while in *Study III* there were also reflections on one's own development and reflection and learning with peers. These later forms of reflection were regarded as being related to the fixed and directed content of the workshop days. Both forms of mentorship created space for reflection *on* and *for* action, but not directly reflection *in* action. To evaluate one's own work and to reflect *in*, *on*, and *for* action is emphasized in Forslund's model of professional competence (Forslund, 1995; Wilhelmsson et al., 2012). The reflective practitioner learns by reflection *in* and *on* action (Schön, 1983). It will not be taken for granted that students reflect automatically, but by providing students with a safe learning environment and asking them the right questions, their ability to learn from reflection will be stimulated (Driessen et al., 2008). Since the mentor's role was neutral, and not assessing the students, they could reveal their emotions in their reflections without any risk of being judged. The involvement of emotions is explicit for learning and making meaning by reflection (Boud et al., 1985; Boud and Walker, 1998; Moon, 1999). The mentoring space enabled reflection and learning in the specific context of the profession and in interaction with others. It also made it possible to be a peripheral participant and newcomer in the community of

practice, and to interact with an experienced individual in that community (Wenger, 2000, Wenger, 1998).

## **7.2 INCENTIVE FOR LEARNING**

The mentorship gave incentives for students' learning and development in several respects, which were mainly related to hope, motivation, and curiosity (*Studies II and IV*). Incentive functions and mental energy are fundamental in the process of learning (Illeris, 2009). The students got an optimistic view of their future life, they looked forward to working as a physician some day, and they were given hope to manage it. This included the hope of managing to combine their professional life with their private life and having a family, issues which often seem to worry students (Jagsi et al., 2007; Dahlin et al., 2005).

Motivation was seen in different aspects. In the one-to-one mentoring program, it was related to confirmation of being on the right track, learning by curiosity and the will to finish their studies and start to work as a physician (*Study II*). Curiosity was also observed in the combined group and one-to-one program when students became interested in their mentors' clinical work and found all the medical things they experienced in that environment to be exciting (*Study IV*). This was mostly experienced when they were in their early semesters. To learn by curiosity is one of the recommendations in *Tomorrow's Doctors* (General Medical Council, 2003). Motivation in the combined group and one-to-one program was mainly related to learning about medicine in the clinic since this gave a sense and meaning to their theoretical knowledge (*Study IV*). In this respect, the mentorship promoted meaningful learning, which leads to a deeper level of learning and understanding (Marton and Booth, 1997; Mayer, 2002). Together with the mentor, the students had legitimate access to the clinical environment for both meaningful learning and learning by curiosity. Students in the combined group and one-to-one program had this access and possibility as early as in their first semesters when theoretical studies can be very academic and hard.

## **7.3 BECOMING A PHYSICIAN**

The mentorship facilitated the students' process of transition to become a physician since it contributed to their understanding of the physician's professional role and starting to integrate themselves with that role. The personal relationship with the mentor helped the students to see the professional individual integrated with the person behind the professional role. In the mentor, they saw the combination of the professional, the personal, and the private, and could start to integrate these parts in themselves as persons. This was seen in both programs (*Study II and IV*). The integration of knowledge, skills, goals, and values of the profession has to be integrated in the student as a person for development of the professional profile (Forslund, 1995; Wilhelmsson et al., 2012). The formalized self-assessments and the discussions about difficult encounters with patients helped the students to be aware of their own personal characteristics and to evaluate them in relation to the professional role of a physician (*Study IV*). Students in the one-to-one mentoring program also brought up issues about

behavior and how to handle different situations as a professional, but their own personality and habits were not discussed here in the same way (*Study II*). A directed content in mentoring meetings is seen as a strength for leading the conversations and reflections to that area.

Learning and development occurred during the mentorship through students' participation in the social culture and their reasoning and reflections on real situations. This interaction between individuals and the learning culture creates opportunities for professional learning as "becoming" (Hager and Hodkinson, 2011). The mentorship enabled social interaction with others in the context of the profession in combination with a sense of belonging as a member of the social group. The findings are related to the theory of community of practice (Wenger, 1998) in the respect of interaction between the newcomer and the experienced (*Studies I, II, III, and IV*), the feeling of belonging to the community (*Study II*) and the process by which newcomers create a professional identity (*Study IV*). Both the interaction between the newcomer and the experienced and the students' increasing connection and belonging to the community were obvious in this work, even if it was expressed in different ways in the different studies. The feeling of belonging to a new community was more to the fore in the one-to-one mentoring program, where the interaction was described in terms of fellowship, being invited, feeling like a colleague, and belonging. The interaction between the newcomer and the experienced was more to the fore in the combined group and one-to-one mentoring program. An early start of mentorship created opportunities for the students to start the process of transition or "becoming" early on in their education, and continuity with a mentor seemed to enhance that process (*Study IV*).

The mentorship gave the students a better insight into their future profession (*Studies II and IV*). Discussions related to the professional roles of a physician contributed to learning about the wholeness and complexity of the profession, even if the students did not fully understand all of the roles and competences (*Study IV*). The self-assessment form provided a map of the different roles of the profession, to which the students could relate. Their learning and understanding of the physicians' professional role and behavior increased during the mentorship and they thought they had changed as persons. This change in behavior and habits was also noticed in their private lives (*Study IV*). Their learning and understanding of professional behavior seemed to reach a deeper level of learning, while their learning about the other roles seemed to be on a more surface level of learning (Marton and Booth, 1997).

Medical educators have stated that the medical education of today tends to focus more on "doing" the work of a physician than on "being" a physician, for which reason an expanded approach to medical education including identity formation is called for (Jarvis-Selinger et al., 2012). Since identity formation is social and relational, students need to interact with members of the profession in order to develop a professional identity. Educators and the medical society have to provide students with opportunities for this development in several ways (Goldie, 2012). The findings in this thesis suggest that mentorship can be one method to use to facilitate students' formation of professional identity. However, mentorship would not be the one and only method in this respect, but it can be used as a complement to other educational activities in undergraduate medical education.

## 7.4 PROFESSIONAL AND PERSONAL DEVELOPMENT – WHAT IS THE DIFFERENCE?

Distinctions of the concepts of professional and personal development in this work are derived from the goals of the mentoring programs in which the students participated. At the beginning of the work, the two concepts were regarded as separate, and so it was also in the questions put to the students in the data collection for *Studies I and II*. But as the work continued, it became clearer that the two concepts are sometimes closely related to each other and sometimes hard to separate. The findings in the studies were discussed in relation to professional competences and the development thereof, as well as to the understanding of the profession and professional roles. Professional competences to which the mentorship gave access to were related to self-awareness, i.e., to reflect and think about ones behavior, habits, values, and attitudes – such issues that are connected to oneself as a person. In the light of this, professional and personal development are closely related. That was also what one of the students expressed in one of the interviews (*Study IV*).

...when talking about the professional role, then I think the personal development comes into that, they merge in a way. You do learn very much. And if you do have control of yourself you will get professional in a way. Thus, there is a very unclear boundary between them...for me it has been a personal development. And I think the personality is part of the professional in the end, so that is very important.  
(Female, semester 8)

## 7.5 KEY ELEMENTS FOR A PERSONAL MENTORING RELATIONSHIP

Mentoring relationships in medical education are described as being personal in nature and involve direct interaction; they are long-lasting and support the individual mentee's development (Meinel et al., 2011; Berk et al., 2005; Buddeberg-Fischer and Herta, 2006). This is in line with how the mentoring relationship was described in this work. One can wonder if a personal mentoring relationship can arise if the mentor and mentee have not actively chosen each other. The mentoring relationship in these studies was experienced as a special and personal relationship with an appointed person having a special function that other persons do not have, even though the mentors were not chosen by the mentees. Support from the mentor was experienced in both programs (*Studies I, II, and III*). The students experienced support from the mentor and knew they could contact the mentor if they needed support (*Study II*). However, the mentor was not the first person the students would contact when seeking support (*Study III*).

In these studies, the *mentors' neutral role* was regarded as an important element for the mentoring relationship, and that the *mentors opened up for personal issues* and were *willing to support* and help. The relationships in the one-to-one mentoring program seemed to be more vulnerable since there was no directed content leading to conversations on a personal level and it was easy for the students to slip out of the program if they did not establish a personal and confidential relationship with the mentor. A lack of “personal chemistry” was one of the reported barriers to mentoring meetings (*Study I*). Other barriers were related to lack of time, no need of a mentor, and

no interest in a mentor. Twenty percent of the students in that program reported that they had only met the mentor one or two times during the two years.

It was not so obvious in the studies that the mentors became role models for the students. However, although this was seen in *Studies I and III*, it did not appear to be so clear and obvious. In the area of management, it is more obvious that mentors are perceived as role models. In management and career development, it is also more usual that the mentors are chosen by the mentees (Kram, 1985). When you have the opportunity to choose your own mentor, the choice may fall on a person you already see as a role model. That was not the case in these mentoring programs. An assumption in this work was that medical students of today are more critical in their stands and consider on their own who they will choose as role models; it does not have to be the appointed mentor. They meet many physicians during their education and can choose among several presumptive role models. Students in these studies did not express that they wanted to be like the mentor or act in the same way as the mentor. But they got a *connection to the person behind the professional mask* and could see how to combine the professional with the personal and the private (*Studies II, III*). To see this combination in one person can also be regarded as a form of role modeling for the integration of person and profession.

Ragins and Kram brought up the risk of dysfunctional mentoring relationships when the mentor and the mentee have a direct connection to each other in the same work organization. In such mentoring relationships there can be a risk of dependence, harassment, and even competition between the parties (Ragins and Kram, 2007). The risk for this form of dysfunctional mentoring relationships would be minimal in the forms of mentoring explored in this thesis. In these forms of mentoring, the relationships had more of a supportive function outside the factual work organization, with *no dependence or hierarchic power* between the parts. In education, there could be a risk for dependence if the mentors have an assessing role, i.e., assessing students' knowledge and performance. The neutral role of the mentor, as described in these studies, is regarded as being important for creating the "space" and relationship which students perceived as something else than the usual, without the pressure of performing or being assessed. This is an important aspect to take into account when introducing mentoring programs for students. *Continuity* in the relationship was also seen as an advantage since it contributed to students' awareness of their own development. The mentor was the only person who followed the students over such a long period of time, and thus was the only person who could remind them about situations and developmental stages back in earlier semesters.

## **7.6 WHY FORMAL AND MANDATORY MENTORING?**

Mentoring programs can be informal, formal, voluntary, and sometimes mandatory. Ragins and Kram state that all mentoring relationships include some degree of voluntariness (Ragins and Kram, 2007). There can be *difficulties for medical students to find mentors by themselves* in the medical context and establish such relationships since the curricula often consist of intermittent periods of clinical placements and courses with a lack of continuity (Hauer et al., 2005). Students with strong academic

performance are more prone to choose and find personal mentors themselves (Dimitriadis et al., 2012), which can exclude other students from the benefits of mentoring. A study from Ireland showed that the students preferred formal mentoring since informal mentoring easily becomes ill-structured (Healy et al., 2012). In informal mentoring, the mentoring relationship should be based on an already established confidence and trust, and that the mentee feels comfortable with the mentor and his/her personality and values. The voluntariness in such mentoring relationships is more obvious. That is not the case in formal mentoring if it is mandatory, which was the case in one of the programs in this thesis (*Studies III and IV*).

In formal mentoring, the mentees have not always made an active choice to get into such relationship or even feel confidence in the mentor. The mentors in such programs, on other hand, have probably made an active choice to become a mentor. In group mentoring with peers, the relationship to a single person, the mentor, would not be so crucial for the mentee to benefit from a mentoring program. Therefore, formal mentoring in groups together with peers can be suggested to avoid failed mentoring relationships related to wrong “personal chemistry” in mentor and mentee.

To take part of this “space for something else” during a medical educational program requires taking the time to sit down and reflect in calm. This “space” offers a contrast to the intensive and rapid pace in other parts of the educational program. It can be *easy for students to deselect voluntary mentoring* if they do not experience any need of a mentor, and if they are stressed by other study duties or performance requirements. In the view of Bourdieu’s theory of different forms of capital (Bourdieu, 1986), students’ social capital can differ, which can influence their perceptions and expectations of the benefits of mentoring. According to the respondents in this work, students with physicians among family or friends did not want to reveal all their questions and thoughts to them, but felt free to do that individually with the mentor. The students did not always recognize these benefits of mentoring in early stages of the program, but realized it several semesters later, why mandatory mentoring was seen as strength. If it had been voluntary, some students would have missed to take part of the benefits.

Formal and mandatory mentoring can therefore be recommended for providing all groups of students this form of relationship for support and facilitation of developmental processes. Mentoring programs for a large number of students requires extensive resources, both personal and economic, to function for all parts, why experiences and opinions from the mentors perspective also are important to take into account for implementation and success of such programs. Regarding the practical problems related to mentors’ time and students’ schedule, both the university and the health care organization are involved.

## 7.7 METHODOLOGICAL REFLECTIONS

The findings of the four studies in this thesis are based on the medical students' experiences of mentoring. A strength for deepening understanding of the meaning of mentoring was that the studies explored medical students' experiences of two forms of mentoring in the same cultural context regarding country and the medical institution. It made it possible to further explore findings and relate similarities and differences in experiences to conditions and structures in the programs. Students in *Studies I and II* had completed the one-to-one mentoring program 1–14 months before the data collection took place so that some students had their experiences of the mentorship fresh in their minds, while other students reported experiences reflected from back in time. This can be regarded as a disadvantage since memories of experiences and opinions can change over time. It can also be regarded as an advantage since the data collection also caught reflected experiences of the mentorship. *Study I* showed that the students' overall opinion of the mentoring program did not differ depending on which of the consecutive courses they were derived from. This suggests that a long time between the completed mentoring program and the investigation did not result in differences in opinions.

In *Study I*, I and one of the co-researchers (SP) had full access to the quantitative data in SPSS 15.0 (Wahlgren, 2005). The analysis process was discussed frequently, and some decisions were also discussed with statisticians at the university to ensure appropriate methods of analysis. In *Study II*, parts of the dataset were coded in parallel by me and one more co-researcher (CS). Codes were then compared and discussed in the research group for agreement before the rest of the data were coded in the same way by me. All data in *Studies III and IV* were coded by me. Two co-researchers (SP and CS) had access to transcribed data from the interviews, but I was the only one who had full access to data in the NVivo software (QSR International, 2011). This can be regarded as a limitation, but it was not experienced as a disadvantage in the group since printouts of data were provided and discussed continuously. Member checking, by debriefing the results of the studies with participants for agreement, could have been used to validate credibility (Polit, 2012; Graneheim and Lundman, 2004). Member checking was not used in this work for several reasons: it is time- and resource-consuming and it may be difficult for the participants to make sense of the accumulated data since each participant has only contributed a single part of it (Shenton, 2004). Instead, frequent debriefing sessions were conducted within the research group during all steps in the analysis processes to render the work transparent in the group and ensure agreement from the co-researchers in the way the data were interpreted, coded, and sorted (Graneheim and Lundman, 2004).

A strength in the studies was the wide variation in participants which made it possible to capture different experiences of mentorship. In *Study I* all students in the program were included, in *Study II* a sampling method was chosen to achieve variation in the participants. The comprehensive sampling process in *Studies III and IV* made it possible to include participants with wide variations in the combination of both the students' and their mentors' characteristics. A limitation in *Studies III and IV* was that experiences from students in the last semesters of the program, semester 9–11, were

missing. The reason for this was that the mentoring program had not been in progress so long at the time of data collection.

A directed approach to content analysis can be used to extend the understanding of a phenomenon by using earlier results or theories for further description of the phenomenon (Hsieh and Shannon, 2005). The directed approach was used in *Studies III and IV* and was regarded as being inductive in the meaning that the analysis processes were not guided by theories or complete coding schemes. Earlier results only guided the first steps of the analysis, with great openness for the data and for creating new codes. However, there are considerations as to whether it is possible for a researcher to remain inductive when studying a certain phenomenon during a period of time, while acquiring more knowledge and pre understandings of the phenomenon. Abduction is defined as a combination of the inductive and deductive approaches (Patton, 2002). Perhaps it would have been more relevant to use that term regarding these analyses.

## **Trustworthiness**

Qualitative research is aimed at deeply understanding specific cases or phenomena in a particular context, as opposed to quantitative research, which strives to generalize findings (Patton, 2002). Evaluating qualitative research differs from evaluating quantitative research (Kuper et al., 2008). The trustworthiness of qualitative research results has to be evaluated in relation to the procedures used to generate the findings (Graneheim and Lundman, 2004). In qualitative research the researchers have to share their quality-enhancing strategies with the readers to achieve trustworthiness (Polit, 2012). Trustworthiness increases if the findings are presented in a way so that the readers can follow the process and make their own interpretations. The most often used framework of quality criteria for trustworthiness in qualitative research was constructed by Lincoln & Guba. The criteria include the concepts of credibility, dependability, and transferability (Lincoln and Guba, 1985; Shenton, 2004; Polit, 2012; Patton, 2002; Graneheim and Lundman, 2004; Lincoln and Guba, 1988). This work was intended to provide the reader with rich description to achieve trustworthiness and enable transferability of the findings to other contexts and settings. The criteria for trustworthiness and quality-enhancing strategies used in this thesis are described below.

### *Credibility*

Credibility implies that the research deals with the intended focus, that data and processes address that focus, and that the findings are congruent with reality (Lincoln and Guba, 1985; Shenton, 2004; Graneheim and Lundman, 2004). Strategies to achieve credibility involve the choice of context and participants, the research approach and methods for data collection, and the amount of data. A researcher needs to be familiar with the culture of participating organizations before the data collection takes place (Shenton, 2004). To choose participants with various experiences increases the possibility of illuminating a phenomenon from a variety of aspects. It is also of value for credibility to have a continuous dialogue with co-researchers during the research process, so as to see data from different perspectives and verify if the others agree with the way the data are sorted and labeled. Credibility also deals with how well categories and themes cover the data and judgments of similarities within, and differences

between, categories. Allowing the reader to follow the analysis process by providing coding tables and illustrative quotations from the data also facilitates the readers' judgment of the credibility (Graneheim and Lundman, 2004).

Several efforts were made in this work to achieve credibility. The first step was to become familiar with the context and to get an understanding of the areas under study. An appropriate research approach and methods were then chosen as being related to the aims of the studies. Sampling methods were chosen to get a wide variation of participants with different experiences of mentoring regarding the participants themselves, their mentors, the forms of mentoring programs they had experience of and the frequency of meetings. Investigator triangulation (Patton, 2002; Polit, 2012; Graneheim and Lundman, 2004) was used in all of the four studies to view and interpret data from different perspectives during the processes. The research group consisted of individuals belonging to professions in medicine, nursing, and medical education. The research groups comprised experience and perspectives including both quantitative and qualitative research traditions.

To achieve confidence, the processes of analysis and the interpretations of data were reported in tables, and quotations were used in the articles to illustrate the results. Other activities promoting confidence was that the work was discussed and scrutinized by peers, colleagues, and academics during the whole time (Lincoln and Guba, 1985; Shenton, 2004). The single studies have been presented and discussed at national and international conferences and meetings. Manuscripts have been read and reviewed by other researchers before submission. Feedback from peers and academics from the same and other scientific fields made it possible to refine the research methods and broadened the theoretical perspectives of the thesis.

### *Dependability*

Dependability has to do with the stability of data over time and if changes were made in the researcher's decisions during the analysis process. Data collection over a long period of time can lead to inconsistencies in data collection. Even if the researcher gains new insights into the studied phenomenon during the process, it is important to be consistent about the question areas with regard to all participants in the data collection (Graneheim and Lundman, 2004). To assess the dependability of a qualitative study, the processes in the study have to be reported clearly to enable a future researcher to repeat them, but not necessarily to reach the same result (Shenton, 2004).

In this thesis data for each study was collected during a limited period of time in order to enhance the dependability. Data were collected by one and the same person to ensure that the question areas of interest were approached and interpreted by the interviewer in the same way in all interviews. During the process of data collection, my own reflections were written down and communicated within the research group for transparency and to ensure that the work continued according to the plan. An endeavor during the work was to make the research processes transparent in both the research group and in the written reports.

### *Transferability*

Qualitative findings have to be understood in the context in which the research was done (Shenton, 2004). Transferability implies whether the findings from a qualitative study can be transferred to other contexts or settings. A qualitative researcher can provide rich descriptions of the research to facilitate transferability, but only the reader can decide if there are similarities between sending and receiving contexts and if the findings can be transferred (Lincoln and Guba, 1985; Patton, 2002; Shenton, 2004; Polit, 2012). Rich descriptions include such information that will allow the reader to understand the phenomenon under study, to draw one's own interpretations and to judge the transferability (Patton, 2002; Polit, 2012). Transferability can be facilitated by a clear description of the research process and descriptions of the culture and context, participants, data collection procedure, the analysis process and by presenting findings with appropriate quotations (Graneheim and Lundman, 2004). Researchers can also communicate a theoretical framework to inform the reader about theoretical perspectives taken for the research, to help make sense of the findings, and facilitate judgment of the transferability (Polit, 2012).

In this thesis the context and processes of the different studies were thoroughly described with the intention to provide the reader with rich descriptions and make possible transferability of the findings to other settings. Contexts, participants, methods, and processes were described in the articles and in the thesis. Tables of the analysis processes and illustrative quotations were presented in the articles. Theoretical perspectives utilized during the work were presented in the background, and the theories were used for the interpretation, understanding, and explanation of the findings.

## 8 CONCLUSIONS AND IMPLICATIONS

In this thesis, the meaning of formal mentorship for medical students' professional and personal development was explored in a European context. The mentorship was experienced by the students as a space for "something else" related to other parts of the educational program. The findings showed that mentorship can facilitate medical students' professional and personal development by creating *space* for reflection and development of the more elusive competences of a physician, giving *incentives* to learn, and facilitating students' process of *becoming* a physician. The findings also suggest that mentorship can be used to facilitate the students' formation of a professional identity. Conclusions drawn from the studies concerning the meaning of mentoring are listed below.

### Mentorship

- can facilitate professional and personal development;
- enables students to have a personal relationship with a professional physician;
- enables psychosocial support;
- can give incentives to learn;
- can create space for the development of reflective capacity;
- can create self-awareness;
- can contribute to awareness of one's own development;
- can enhance development of the more elusive competences of a physician;
- enables learning about the wholeness and complexity of the profession;
- enables progress towards understanding professional behavior;
- can facilitate the process of becoming a physician.

From the findings in these studies, suggestions for practical use of mentorship in medical education can be derived. The suggestions are regarded as creating conditions for such developmental space, and they apply to formal mentoring in which the mentors are not chosen by the mentees. They are as follows:

- A neutral role of the mentor, not assessing the students' performance;
- Include self-reflection;
- Include reflection on professional competences of the profession;
- Include reflection on professional behavior;
- Possibility of following the mentor in his/her clinical work, especially early in the educational program;
- Long duration and continuity;
- Combination of group and individual conversations with the mentor;
- Mandatory and scheduled mentoring meetings;
- Raise the status of this form of educational activity, regarding curriculum planners, teachers, and healthcare organizations.

Formal mentoring programs, including a large number of students can be organized by institutions to provide every student with the benefits of mentoring. This thesis did not compare the role of the mentorship in relation to other parts of the educational program attended by the students. The students would undergo developmental processes for

becoming physicians even without mentorship, but the studies in this thesis showed that mentoring can facilitate these processes.

The thesis contributes a deeper understanding of the meaning of mentoring for medical students' professional and personal development. The research question is derived from practical reality and the findings are intended to be used in practice. Efforts were made to provide a rich description of the work to enable transferability to other contexts. However, transferability will be judged by the reader.

## 9 FUTURE RESEARCH

Several questions emerged during this work. One area to explore further, and missing in this thesis, is how medical students in the latest semesters experience mentorship and if they have a special need of mentorship before entering their professional role in the healthcare system. Furthermore, it would be interesting to investigate in more detail the students' need for and benefits from mentorship in different stages of their development and how to develop mentoring programs adapted to different needs.

Costs for the implementation of mentoring programs for students were not considered in these studies. The economic aspects need to be further investigated and would be of interest for both the faculties and the healthcare organizations.

In this thesis, earlier research on mentoring in the field of medical education was limited to the inclusion of research related to medical students. A future direction might be to broadening the perspectives to include other healthcare professions in higher education.

## 10 SAMMANFATTNING (SUMMARY IN SWEDISH)

Att bli läkare innebär att tillägna sig medicinska kunskaper och att träna olika praktiska färdigheter. Läraryrket innebär också att kunna använda kunskapen och färdigheterna på ett professionellt sätt i samverkan med patienter och andra, såsom anhöriga och övriga yrkesgrupper inom vården, för att handla rätt. Mentorskap har under senare tid använts inom läkarutbildning för att stödja studenterna i den professionella utvecklingen. Men vilken betydelse har egentligen mentorskap för studenternas utveckling? För att öka kunskapen om betydelsen av mentorskap under läkarutbildning är det viktigt att ta del av studenternas egna upplevelser.

Mentorskap är en relation med anknytning till yrkeslivet. Generellt sett har mentorskap två grundfunktioner: en karriärvägledande funktion och en psykosocial stödfunktion. Den karriärvägledande funktionen är mer framträdande i Nordamerika, medan den psykosociala stödfunktionen är mer framträdande i Europa. Eftersom de flesta studier om mentorskap är gjorda i nordamerikanska sammanhang är det viktigt att genomföra studier om mentorskap även i andra delar av världen.

Det övergripande syftet med avhandlingen var att fördjupa förståelsen för betydelsen av mentorskap för läkarstudenters professionella och personliga utveckling, och bidra med kunskap som kan komma till praktiskt nytta vid utformning av mentorsprogram inom läkarutbildning i framtiden. Avhandlingen består av fyra delarbeten som bygger på varandra. Studierna är gjorda vid ett och samma medicinska universitet i Sverige under perioden 2008-2012. Läkarstudenters upplevelser av två olika former av mentorskap har undersökts; individuellt mentorskap och kombinerat grupp och individuellt mentorskap. I båda formerna av mentorskap var mentorernas roll att vara bollplank och att stödja studenterna i deras utveckling. Mentorernas funktion var inte att förmedla kunskap eller att bedöma studenternas prestationer. Studenternas upplevelser och erfarenheter av mentorskap undersöktes genom enkäter och intervjuer. Teorier om professionell kompetens, lärande och transition användes för tolkning, förståelse och förklaring av resultaten.

**Delarbete I och II** undersökte läkarstudenters upplevelser av individuellt mentorskap som pågick under de första kliniska kurserna, terminerna 5-8. Alla studenter tilldelades varsin mentor men det var frivilligt för studenterna att delta i mentorsprogrammet. Mentorer och studenter ansvarade för planering av träffar och de styrde själva över innehållet i sina samtal.

I **Delarbete I** skickades en enkät ut via mail till alla studenter som hade deltagit i programmet (n=111). Svarefrekvensen var 67%. Enkäten visade att 78% av studenterna upplevde att mentorskapet hade underlättat deras professionella utveckling och 63% upplevde att det hade underlättat deras personliga utveckling. Studenterna upplevde att mentorerna var intresserade av deras behov, var stödjande, gav vägledning och vidgade deras perspektiv. Samtalen handlade främst om utbildningen, framtida karriär, läkarrollen, kombination av yrkesliv och privatliv och hur det är att vara student. En

stor andel av studenterna (76%) upplevde någon form av hinder för mentorsträffar. De vanligaste hindren var relaterade till logistik och tidsbrist.

I **Delarbete II** undersöktes studenternas upplevelser av mentorskapet vidare genom enskilda intervjuer (n=12). Genom tolkande innehållsanalys framkom tre teman: *space*, *framtidstro* och *transition*. Med ”space” menas här ett slags utrymme eller sfär. Att ha en mentor upplevdes som en trygghet och som en frizon vid sidan av den övriga utbildningen. Mentorskapet gav en förhoppning om att klara av att arbeta som läkare i framtiden, och det ökade motivationen för att studera och bli klar med utbildningen. Studenterna uppskattade att ha en personlig relation till en läkare och att komma bakom den ”professionella masken”. Dom kände sig introducerade till en ny yrkesgemenskap och började identifiera sig som läkare. Det individuella mentorskapet skapade förutsättningar för utveckling av de mer svårfångade professionella läkarkompetenserna såsom reflektiv förmåga, känslomässig kompetens och känslan av att tillhöra en yrkesgemenskap.

I **Delarbete III och IV** undersöktes läkarstudenters upplevelser av kombinerat grupp- och individuellt mentorskap som pågick under hela utbildningen, terminerna 1-11. Det här mentorsprogrammet var obligatoriskt med schemalagda träffar där vissa fasta moment ingick. Sexton individuella intervjuer gjordes med studenter från terminerna 2, 4, 6 och 8 om deras upplevelser av mentorskapet. Intervjuerna gav underlag till Delarbetena III och IV, och de analyserades med en riktad form av innehållsanalys där resultatet i Delarbete II guidade den initiala delen av processen.

I **Delarbete III** framkom fem teman om betydelsen av mentorskap och vad det skapade förutsättningar för: *psykosocialt stöd från mentorn, en relation till en läkare under den professionella ytan, space för någonting annat, medvetenhet om sin egen utveckling, och reflektion och lärande tillsammans med kamrater*. Kombinerat grupp- och individuellt mentorskap skapade utrymme för att reflektera över den egna personligheten och den professionella läkarrollen. En mentorsrelation kan etableras på ett personligt plan trots att man inte träffas ofta eller känner varandra väl. Kontinuiteten i mentorskapet hjälpte studenterna att se sin egen utveckling.

**Delarbete IV** fokuserade på betydelsen av mentorskap för studenternas transition, dvs övergångsprocess, till att bli läkare. I analysen framkom tre teman: *integrera sig själv med den framtida läkarrollen, spännande kliniska upplevelser med mentorn ger drivkraft till att lära, och på väg mot att förstå läkarens professionella kompetenser*. Studenterna fick en inblick i det framtida yrkeslivet och kunde börja integrera läkarrollen med sig själva som personer. Att vistas i klinisk verksamhet tidigt i utbildningen, och att få tillgång till den miljön tillsammans med mentorn, gav drivkraft för lärande och mening till teoretisk, medicinsk kunskap. Studenternas förståelse av läkarens professionella kompetenser och professionellt förhållningssätt utvecklades under mentorskapet, och de kom närmare en förståelse av läkarrollen som helhet.

Slutsatser från de fyra delarbetena är att mentorskap under läkarutbildning kan underlätta studenters professionella och personliga utveckling genom att skapa ett särskilt *utrymme* för reflektion och utveckling av de mer svårfångade

läkarkompetenserna, ge *drivkraft* för lärande och underlätta studenternas *övergångsprocess* att bli läkare.

#### Mentorskap

- kan underlätta professionell och personlig utveckling
- möjliggör för studenter att ha en personlig relation till en yrkesverksam läkare
- möjliggör psykosocialt stöd
- kan ge drivkraft att lära
- kan skapa utrymme för utveckling av reflektiv förmåga
- möjliggör utvecklad självförståelse
- kan bidra till att bli medveten om sin egen utveckling
- kan främja utvecklingen av de mer svårfångade läkarkompetenserna
- möjliggör lärande om helheten och komplexiteten i yrket
- möjliggör utvecklad förståelse av professionellt förhållningssätt
- kan underlätta övergångsprocessen att bli läkare

Utifrån dessa studier kan rekommendationer ges för praktisk användning av mentorskap inom läkarutbildning. Rekommendationerna kan ses som förutsättningar för att skapa den här formen av utvecklingsmiljö. De avser formellt mentorskap där mentorerna inte har valts av studenterna själva.

- Neutral mentorsroll, ej bedöma studenternas prestationer
- Innehålla självreflektion
- Innehålla reflektion över professionens olika kompetensområden
- Innehålla reflektion över professionellt förhållningssätt
- Möjlighet att följa mentorn i kliniskt arbete, främst tidigt i utbildningen
- Långvarigt mentorskap med kontinuitet
- Kombination av både grupp- och individuella mentorssamtal
- Obligatoriskt och schemalagt
- Höja statusen för den här formen av utbildningsaktiviteter inom universitetens programledning, bland lärare och i hälso- och sjukvårdsorganisationen

Det är fullt möjligt för universitet och institutioner att organisera formella mentorsprogram för stora studentgrupper och därmed erbjuda varje student fördelarna med mentorskap. Det här forskningsprojektet har inte jämfört betydelsen av mentorskap i relation till andra delar av läkarutbildningen och de övriga aktiviteter som studenterna deltar i. Studenters utveckling av yrkesroll och yrkesidentitet sker sannolikt även utan mentorskap, men de här studierna påvisade att mentorskap kan främja dessa processer.

Avhandlingen bidrar med en djupare förståelse för vilken betydelse mentorskap kan ha för läkarstudenters professionella och personliga utveckling. Forskningsfrågan framkom ur ett kliniskt, praktiskt perspektiv och intentionen var att resultaten ska kunna användas i praktiken. Avsikten var att beskriva de olika studierna tillräckligt grundligt för att göra resultaten överförbara till andra sammanhang. Det är dock läsarens uppgift att bedöma detta.

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