CONSTRUCTING PHYSICIAN'S PROFESSIONAL IDENTITY – EXPLORATIONS OF STUDENTS' CRITICAL EXPERIENCES IN MEDICAL EDUCATION

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Abstract

The formation of a physician's professional identity and conception of him/herself as a doctor is often taken for granted and considered a by-product of learning. During professional socialization, medical students internalize knowledge, skills, attitudes, behavioral models as well as ethical and moral values of medicine. However, certain critical experiences may trigger an active construction of professional identity.

The aim of this research was to explore the process of constructing professional identity during medical education in the framework of cultural-historical activity theory. Multiple methods (questionnaires, videotapes of medical students' reflection group sessions, and interviews of the supervisors) were used in data collection and analysis.

Medical students were found to have differing orientations towards learning and practising medicine. Some of the students, more commonly females, expressed a need for more support for their professional development. Reflection groups offered medical students a possibility to share their experiences of critical situations. The topics of discussion dealt with career choice, medical education (teaching, patient encounters, communication), working experiences and career opportunities. Medical students' narratives of their experiences in university hospital learning situations revealed the way in which various interaction situations laid the basis for the development of professional identity. In constructing a physician's professional identity, medical students had to solve dilemmas encountered in three different activity systems: Personal life, Medical education and Work.

Encountering critical situations is part of the daily practice in medical schools. These situations may induce reflection on action and conscious development of professional identity. Medical students should be provided with more possibilities to elaborate on especially dilemmas concerning professionalism, communication skills, encountering death, and biomedical versus psychosocial aspects of medicine during their medical education.

Keywords: undergraduate medical education, professional identity, peer group, reflective learning, narratives, dilemmas

To my parents Ulla and Kalevi Nevala

Acknowledgements

Definitions

Short definitions of the key concepts are presented here, in order to give the reader an understanding of how these terms have been understood in this research. These concepts will be presented more broadly in the text.

Identity	A dynamic conception of oneself as a person (Erikson 1964), which is constructed in activity and in the social relationships in which a person participates (Leontjev 1978).
Professional identity	Conceptions of oneself as a professional (Niemi 2001).
Professional orientation	Direction of professional interests (Järvinen 1985) and career preferences.
Professional socialization	A process by which neophytes come to acquire the attitudes, values, skills, knowledge, and ways of life established in the professional subculture (Merton et al. 1957).
Critical experience	Critical situations (Vasilyuk 1988) are ones which cannot be resolved by practical activity or mental reflection, but which have to be experienced. Critical experiences in this research refer to either positive or negative incidences and meaningful moments during medical education.
Reflection	An activity based on interaction, in which one person mirrors back, i.e. reflects, another person's (or group's) situation. In self-reflection, a person clarifies his/her own experiences by examining his/her own feelings, emotions or thoughts. (Tiuraniemi 1994).

Reflective learning   Reflective learning occurs when the routine way of doing things does not function (Dewey 1989/1909). It is a process in which a dilemmatic situation creates a need for learning, which leads to a definition of the problem, the formulation of a hypothesis, reasoning, and the testing of the new hypothesis or concept in action (Miettinen 2000).

Reflection group   Medical students' supervision groups, influenced by the Balint group method (Rekola 1994), in which students can discuss critical experiences during medical education.

Activity system   A general mode to describe collective human activity (Engeström 1987).

Dilemma   A situation in which a person has to make a decision between equally bad (or good) options (Billig *et al.* 1988).

Narrative   A story about a specific past event with a clear beginning and end, which is detachable from the surrounding discourse (Labov, 1972, Kohler-Riessman 1993).

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1 Introduction

My interest in conducting research concerning medical education emerged during the reformation of the curriculum in the medical faculty in the University of Oulu while I was still a medical student in the mid-1990's. During my undergraduate studies, the process of becoming a medical professional seemed to require growing tough and detached from the feelings that emerged in various strange and sometimes even upsetting learning situations. I was amazed that there were hardly any possibilities to reflect on the ethical and practical dilemmas encountered during the education with our teachers. We, as medical students, were often left alone with our questions of why things were as they were, and we felt that nobody actually cared whether or not we learnt anything. There was hardly any feedback on our performance with patients, and especially instruction concerning communication skills in practical situations as well as support for professional development were scarce.

In the literature concerning medical education, curricula have been criticized for content (not relevant in practice), volume (overload of fragmentary knowledge) and form (taught in a manner that is boring and unchallenging). The justifications for the traditional curriculum have been that it will weed out the weaker and less motivated students as well as reduce sensitivity and encourage efficient use of time, respect for the profession, and acceptance of the medical hierarchy. (Downie & Charlton 1992). The problems acknowledged have been that medical education may lead to a subjective loss of motivation, growing cynicism and a decreasing ability to show compassion as well as deterioration of the student's approach to studying. Further, theory is usually presented prior to its application and separately from the medical practice, which may lead to a failure to apply knowledge in a practical setting. (Coles & Holm 1993).

The need to reform medical education has been acknowledged internationally, and the major issues discussed have been curriculum planning, reasoning and learning, skills training and evaluation of competence, communication skills and team work, professional development, student recruitment criteria as well as faculty development (Scherpbier *et al.* 1997).

In medical education research, the emphasis of most studies so far has been on individual learning or on evaluating the outcome of various teaching experiments. The focus of these studies has been on how individual medical students' cognitive and practical skills develop, regardless of whether learning has been understood as an

increase of knowledge and skills or as a qualitative personal change. The process by which medical students become professionals has been ignored, as the development of physician's professional identity has commonly been considered a self-evident by-product of learning.

When examining the process of making doctors, Downie and Charlton (1992) defined *education* as involving a wide perspective, as aiming at growth and understanding (the person's entire view of life is transformed), and as morally acceptable as well as person-respecting, whereas *training* involves skills in narrow techniques aimed at operative efficiency. In their opinion, medical education should involve both aspects, but they considered much of the current medical education to consist of merely training. They emphasized the importance of a personal relationship between a student and at least one doctor as a basis for professional development.

As part of the curricular reform at the University of Oulu, voluntary, extracurricular reflection groups of medical students were introduced. In these groups, students could elaborate the experiences they had encountered during their medical education under supervision. The groups offered a chance for emotional ventilation, sharing of critical experiences and discussions about psychosocial issues in patient care, which had been neglected in the official curriculum. My experiences of participating in one of the groups made me interested in how professional identity develops during medical education, since much of the conversation had to do with the participants' ways of preparing for a life as a physician.

Most of the studies concerning the professional identity of physicians have focused on the process of professional socialization: study on the medical profession (history, functioning in society, occupational structure), analysis of individual change, or examination of social institutions. I view professional socialization as enculturation, a learning process by which medical students acquire the norms, values and relevant roles within an institutional setting, namely a university hospital. (Olesen & Whittaker 1970). The aim of this research was to disclose some of the cultural dialectics that affect the process of constructing physician's professional identity.

My view of the construction of professional identity is based on the ideas of activity theorists and social constructionist. Jenkins (1996) understood the processes of professional socialization and construction of professional identity as being in a dialectical relationship with each other. I have become to understand professional identity as a social, continuously on-going, dialectical process. Professional identity is produced in situations involving interaction, learning, and practical, professional activity. Even though professional identity is not solely institutionally determined, I chose institutional influence as the main perspective of my study. Rather than focusing on the individual development of students, I paid attention to the social circumstances in which students built their professional identities. I decided to view the construction of physician's professional identity from the students' perspective as it is manifested in the stories medical students tell about their experiences of their learning environment. The personal backgrounds of the students were only considered if these issues appeared in the reflection group discussions.

Undergraduate education is, for many, a time for the reconstruction of identity (Bucher & Stelling 1977). Most medical students begin studying in their early adulthood at a time during which many other important changes are also taking place in their lives, including

separation from their own parents as well as building intimate relationships and starting a family (Lidz, 1968). Even though the construction of professional identity most likely begins even before enrolment in medical school and the more specific career commitments are only made during postgraduate education, I decided to study undergraduate education. As far as I can see, an important foundation for professional identity is laid during that period. I have, on purpose, ignored the curricular context and the students' acquisition of medical knowledge and skills. My main interest was to find out what kinds of critical situations medical students encounter during their studies, and how they construct their professional identities based on these experiences.

By reviewing the literature on identity and professional socialization, medical education and reflective learning, I tried to gain a basis for understanding the context and the structural as well as situational constraints within which professional identity develops. Multiple methods were used for data collection. The data are like biopsies of how medical students experience studying and prepare themselves to their future role as physicians: *the questionnaire* was used to get an overview of how medical students perceive their educational environment, the analysis of narratives and dilemmas from the *videotaped reflection group discussions* aimed at getting a deeper insight into the critical situations medical students encounter during their undergraduate education, *reflection sheets* gave a longitudinal perspective into the reflection groups, and *interviews* provided me with understanding of the supervisors' views of the reflection group activity.

This research aims to clear paths for further research rather than answer all the questions concerning the process of construction of physician's professional identity. However, I hope that some of the findings could be found useful in planning the future reforms of medical education.

2 Review of the literature

2.1 Identity and professional socialization in medicine

2.1.1 Concept of identity

Identity research has been conducted in various fields of science: psychology, sociology, anthropology, etc. In this chapter, conceptions of identity formation in different theoretical frameworks are reviewed. However, the early formation theories, which assume personality to be largely formed during the first years of life, are not quoted. The review begins by introducing a psychosocial framework of identity formation and then moves on to constructionist, socio-cultural, and dialectic notions of identity. In the summary, the notions relevant for this research are highlighted. The concept of professional identity in cultural-historical activity theory will be more thoroughly examined in chapter 3.

2.1.1.1 Psychosocial theory of identity formation

Erikson (1964, 1968) defined identity as "a subjective sense of sameness felt by individuals within themselves, an experience of continuity oriented towards a self-chosen future". According to Erikson, however, the sameness is in dynamic tension, and there is thus no guarantee of its permanent stability. He saw identity as being constructed through a coordination of perspectives, in which others' images of one's self and one's own self-images are brought into harmony through processes of self-reflection, self-observation and self-judgement. In his opinion, identity formation evolves through a process of simultaneous reflection and observation, in which the individual judges himself in the light of what he perceives to be the way in which others judge him in comparison to themselves. In his view, it is up to the individual to create and maintain a dynamic conception of him/herself as a coherent whole, involving complex perspective

coordination. He refers to ego-identity, instead of self-identity, when focusing on the aspect of identity that actively evaluates, selects, and organizes self-perceptions.

Erikson (1982) defined eight stages of development based on the psychodynamic theory: 1) trust versus mistrust, 2) autonomy versus shame and doubt, 3) initiative versus guilt, 4) industry versus inferiority, 5) identity versus role confusion, 6) intimacy versus separation, 7) generativity versus regression, and 8) coherence versus hopelessness. In his opinion, each stage is qualitatively different and discontinuous from the previous one, a crisis or a critical choice leads to a relatively abrupt termination of each period, and even though the transition may take months or even years, once the crisis is solved, the person is able to tackle successfully the conflicts of the next stage. The turning points signify moments of decision between progress and regression, integration and retardation.

In Erikson's view, identity formation encompasses three broad domains: fidelity, ideology, and work. The basic process of identity formation consists of choosing commitments. It is a process of active seeking, and becoming committed to a group of people and to a set of ideas one can trust. To form their identities, people must base their choices of values, career, work, political commitments, and religious beliefs on ideological alternatives related to the existing range of alternatives for identity formation (Erikson 1968). Coherence is achieved when the ideology chosen is one that provides a convincing world image. The choice of occupation is implicit in the larger need for coherence and sameness that defines identity.

Based on the Eriksonian criteria of self-exploratory crises and personal commitments, Marcia (1966) developed an identity status paradigm. An identity status interview is used to assess the presence or absence of self-reported crises and commitments. Two of the statuses involve active self-exploration: Achievers and Moratoriums. They differ on the commitment dimension. Achievers have reportedly resolved an identity crisis and arrived at self-determined values and goals, whereas Moratoriums are still in the process of examining alternatives to resolve a crisis. The remaining two statuses have not been engaged in a period of effortful self-examination: Foreclosures and Diffusions. Foreclosures have automatically adopted the norms, values, and aspirations prescribed by significant others, especially their parents. Diffusions are uncommited without crisis. This paradigm has been assessed as being a valid method for assessing interindividual differences in identity formation, and it has been used in numerous recent psychological investigations concerning identity (Berzonsky 1990).

Developing further the ideas of Erikson and Marcia, Berzonsky (1990) investigated the strategies individuals use as they process and structure self-relevant information into a sense of self-identity. According to him, people have an implicit core of untestable assumptions about life, reality, knowledge, desired images of self and so on, which he called self-theory. In the process of identity development, this self-theory directs problem-solving in situations encountered in different social of physical contexts, which may then confirm or induce a need to revise the original self-theory. This process model of identity development contained some constructionist elements, which will be discussed in more detail in the following chapter.

2.1.1.2 Constructionist notions on identity, self and personality

Social constructionists are concerned with a person living within a network of relations with others (Shotter 1995, Gergen 1999). Instead of the traditional view of a fixed core self, they promote the idea of identity being formed in language. They see both self and other as created concepts, something constructed linguistically, and manifested in dialogue and relationships (Anderson 1997, Berger & Luckmann 1967, Gergen 1985, 1991, 1994, Harré 1995, Shotter 1989, 1984). According to this view, identity is a dialogical-narrative identity, and the self, i.e. the narrator, consists of many *I*s, occupies many persons, and has many voices. In the view of Hermans and his colleagues:

> "The voices function like interacting characters in a story. Once a character is set in motion in a story, the character takes on a life of its own and thus assumates a certain narrative necessity. Each character has a story to tell about experiences from its own stance. As different voices these characters exchange information about their respective *Mes* and their worlds, resulting in a complex, narratively structured self." (Hermans *et al.* 1992)

For social constructionists, relationship is the locus of knowledge. From this perspective, ideas, truths, or self-identities, for instance, are products of human relationships. Gergen (1994, 1999) proposed the concept of a linguistic, relational self. In his view, self is realized in language and dialogue: self and self-identity are narrative realities socially constructed in language (Gergen 1987, 1989). Identity is not based on any psychological continuity or discontinuity of selfhood, but on the constancy of an ongoing narrative, of the stories we tell about ourselves and others. The self is an ever-changing expression of our narratives, as we attempt to make sense of the world and ourselves. One's self is constructed and re-constructed in a reflexive process through continuous interactions and relationships (Anderson 1997, Anderson & Goolishian 1988). Selfhood maintains coherence and continuity in the stories we tell about ourselves by constructing narratives that make sense of life. The self is a configuration of personal events into a historical unity, which includes not only what one has been but also anticipations of what one will be. The self becomes the person or persons our stories demand (Gergen 1994).

Self-identities are the function of the socially constructed stories we continually narrate. Shotter (1989) emphasized that we must pay attention not only to the construction of the *I* but also to the construction of the *other*. He talks of the formative nature of the *you* in communication (and relationship) as "a process by which people can, in communication with one another, literally in-form on another's being, that is, help to make each other persons of this or that kind". Thus, also, the narratives *I* tell about *you* are part of the process of your identity, and vice versa.

The cultural research approach comes close to the notions of constructionists concerning identity. Hall (1999), who has mainly studied national identities, emphasizes that subjects consist of not one but many identities, which are mutually contradictory or even incompatible with each other. A finalized, certain and consistent identity is fantasy. In his view, identity is something that is formed in unconscious processes rather than something that one could be naturally conscious of. We keep looking for an identity and

building life stories that bind shared "*Me*s" into one. Identity should be understood as a production that is never ready, but always in process, and is formed rather in than outside presentation. To be effective, an ideology has to operate both at the psychic level and at the level of discursive constructs and practices that make up the social field. Thus, the meanings of identification come from both discursive and psychoanalytical repertoires, and identity exists at the conjunction of these domains. Identifications are never perfect, they are continuously constructed and re-constructed, they are material, i.e. continuously re-configured, confirmed, and compromised and occasionally put aside. Identities should be examined in specific historical and institutional places, in certain specific discursive constructions and practices.

2.1.1.3 Socio-cultural notions of identity, self and personality

Foundations for conceptualizing identity. Many socio-cultural researchers have based their work on the foundation laid by Vygotsky and Bakhtin. Even though they came from different theoretical frameworks, and neither had explicitly examined the concept of identity, both provide useful theoretical concepts for identity research.

Vygotsky (1981) was especially interested in the development of higher mental processes, such as thinking and memory, as well as the human ability to control his or her own and others' behavior by using signs or symbols. He emphasized the potential of words as tools and social interaction as the context in which individuals are exposed to cultural forms and come to use them. In his opinion, language and other sign systems are resources in action and integrally related to thinking (Vygotsky 1978, 1981, 1987). He named the process through which thoughts are formed in language and verbalized as words as inner speech:

> "The relation of thought to word is not a thing but a process, a continual movement backward and forth from thought to word and from word to thought. In that process, the relation of thought to word undergoes changes that themselves may be regarded as developmental in the functional sense. Thought is not merely expressed in words; it comes to existence through them. Every thought tends to connect something with something else, to establish a relation between things. Every thought moves, grows and develops, fulfills a function, solves a problem."

Vygotsky's concept of mediated action attempts an integration of cultural and mental processes. According to Vygotsky, all higher mental functions have their origin in social interaction, and only later become properties of individuals through a process of internalization. He proposed that every function in a child's cultural development appears twice: first at the social level and later at the individual level – speech begins for others and is then directed towards oneself. Mediating devices, especially symbols, are generally first taken up in interaction with others and then gradually integrated into one's self-activity. "Sign is always originally a means used for social purposes, and only later becomes a means of influencing oneself" (Vygotsky 1981).

Bakhtin's understanding of the concept of self is somewhat analogous to "*I*". To him, self is the nexus of a continuing flow of activity, dialogue. His concepts give rise to a vision organized around the conflictual, continuing dialogic of inner speech, where active identities are taking shape. The self consists of positions from which meanings are made. Bakhtin sees identity as an expressible relationship to others, which is dialogical at the moments of expression, listening and speaking. He also insists that we represent ourselves from the vantage point of others, and that those representations are significant to our experience of ourselves. In the making of meaning, we "author" the world and ourselves – "*I*" draws upon the languages, the dialects and the worlds of others to which she has been exposed (Bakhtin 1981).

For Bakhtin, identity is a socio-historical product in interaction. The self as it reflects upon its activity is different from the self that acts. To be understood by others, people have to cast themselves in terms of the other, and they do that by seeing themselves from outside. Bakhtin writes about "the space of authoring", implying differences between a neophyte and a person of greater experience, who begins to rearrange, reword, rephrase, reorchestrate different voices and, by this process, develops his/her own "authorial stance". "One's own discourse and one's own voice, although born of another or dynamically stimulated by another, will sooner or later begin to liberate themselves form the authority of the other's discourse" (Bakhtin 1981). Bakhtin's concepts of meaning, dialogue, and multivoicedness have been used previously in, for example, examining interaction in psychotherapy settings (Seikkula 1994, 1998, Wahlström 1992) and in doctor-patient interaction (Engeström 1999, Puustinen 1999).

Recent socio-cultural conceptions of identity. Penuel and Wertsch (1995), building on the work of Vygotsky and Erikson, proposed an integrated, socio-cultural perspective towards identity formation. They borrowed from Vygotsky the conceptual and methodological tools for understanding how sociocultural processes shape individual identity formation (Vygotsky 1981, 1987, Wertsch 1991). Their basic assumption was that all human mental functioning is socioculturally, historically, and institutionally situated (Wertsch 1985 1991). And they were therefore interested in tool-mediated action rather than in individuals acting to form self-chosen identities.

Penuel and Wertsch (1995) proposed that identity formation should be viewed as shaped by and shaping forms of action, involving the complex interplay between the cultural tools employed in action, the sociocultural and institutional context, and the purposes embedded in the action. They argue that identity formation involves an encounter between the cultural resources for identity and individual choices with respect to fidelity, values, ideology, and commitment to a vocational path that takes place in human action (compare with Erikson 1968). They suggested an integration of the poles of individual functioning and socio-cultural processes in terms of the "mediated action approach" to identity formation. By taking human action as the starting point for identity and identity research, they propose that it is possible to make several claims about identity that draw on various aspects of Vygotsky's and Erikson's work.

> "Four basic points of this approach are (a) the use of a genetic method calls for attention to the importance of studying identity in settings where forming identities are at stake in the course of the activity; (b) cultural and historical

resources for identity formation are integral as empowering and constraining tools for identity formation; (c) mediating action, rather than an inner sense of identity, provides a basic unit of analysis; and (d) variation in the use of cultural resources for identity formation must be viewed in terms of commitments in Erikson's domains of identity – fidelity, ideology and work. "
(Penuel & Wertsch 1995)

Identity is conceived as a form of action that is, first and foremost, rhetorical, i.e. concerned with persuading others (and oneself) about who one is and what one values. And identity is about realizing and transforming one's purposes and using signs to accomplish meaningful action. Identity formation can be seen as a moment of rhetorical action (Penuel & Wertsch 1995). The cultural and historical resources for identity formation represent a diversity of mediational means. Identity may be conceived of as formed when individuals choose, on particular occasions, to use one of more resources from a cultural "tool kit" to accomplish a given action (see Bruner 1990, Wertsch 1991).

Their suggestion was that identity should be examined in contexts in which identity is contested or under transforming shifts. For example, studying identity within organizational meetings, community support groups, and psychotherapy sessions provides and insight into how individuals and groups can struggle against the dominant discourses of their identity to co-construct a different way of speaking about themselves and to develop new forms of action. The "mediated action" approach would provide an opportunity to observe how groups and individuals struggle to come to terms with their membership in societies and with their own sense of who they are. This would mean an attempt to explain or analyze meaningful human action rather than either the inner states of individuals or sociocultural processes considered in isolation. The focus of research would thus be on questions about the mediational means or cultural tools that people employ to construct their identities in the course of different activities and how they are put into use in particular actions.

Holland *et al.* (1998), building on the research of Vygotsky and Bakhtin, define the concept of identity in the following way:

> "People tell others who they are, but even more important they tell themselves and then try to act as though they are who they say they are. These self-understandings, especially those with strong emotional resonance for the teller, are what we refer to as identities." (Holland *et al.* 1998)

In their understanding, persons are composites of many, often contradictory, self-understandings and identities, whose loci are often not confined to a body but "spread over the material and social environment". Identities, for them, are social forms of organization, a process of personal formation that occurs via cultural resources in a social context. People's communications make claims about who they are relative to one another and the nature of their relationships. Persons develop more or less conscious conceptions of themselves as actors, and identities are the key means through which people care about and care for what is going on around them. Identities are important bases for people to create new activities, new ways of being. The person's history also

significantly shapes his/her social activity. Identities can even function as tools by which individuals and groups seek to manage one another and their own behavior.

Holland *et al.* (1998) take identity to be a central means by which selves form and reform over personal lifetimes and in the histories of social collectives. They emphasize that identities are improvised in the flow of activity within specific social situations – formulated from the cultural resources at hand. Identity is a concept that figuratively combines the intimate or personal world with the collective space of cultural forms and social relations. People participate in several discourses and fields of activity relevant to their "psychological" identities. Identities are lived in and through activity and must hence be conceptualized as they develop in the social practice. Holland *et al.* (1998) see the importance of the situatedness of identity in collectively formed activities in the same way as Lave and Wenger (1991) are concerned with "situated learning" in "communities of practice", i.e. with how newcomers are inducted into socially enduring and complex activities. Identities become important outcomes of participation in communities of practice.

Holland *et al.* (1998) focus on the development of identities specific to practices and activities situated in historically contingent, socially enacted, culturally constructed frames of social life. Identities are constantly being generated, they are responses to, develop in, and hence include the dilemmas set by the struggles, personal crises, and social recruitment under which they form. The interplay of a person's identities is open to and dependent upon continuing social discourse and everyday interaction. Improvisation of new identities makes it possible to draft new answers to the dilemmas encountered, as people author the meaning of action.

2.1.1.4 Dialectic notions of identity, self and personality

Jenkins (1996) criticizes the taken-for-granted distinction between individual-personal and social-cultural identities in current research and proposes a concept of social identity to bridge them. He argues that the individual's unique identity and collective shared identity are, in fact, produced, reproduced and changed by similar processes, and that both are intrinsically social. He insists that selfhood and personhood are completely implicated in each other as internal and external aspects of individual identity. The most important difference between the individual and collective identities is that the former emphasizes difference and the latter similarity. Individual identity – embodied in selfhood – is not meaningful in isolation of the social world of other people. Individuals are unique and variable, but selfhood is thoroughly socially constructed. Social identity refers to the ways in which individuals and collectives are distinguished in their social relations with others.

Jenkins' (1996) meaning of "self" is parallel to the general meanings of "identity". He sees all human identities as in some sense social, and he is interested in the process and reflectivity through which identity "works" or is "worked" in interaction and institutionally. He sees identity as an ongoing process about defining meaning (agreeing and disagreeing, which are always a matter of convention and innovation and to some extent shared and negotiable). He defines self as "each individual's reflexive sense of her

or his own particular identity, constituted vis à vis others in terms of similarity and difference, without which we wouldn't know who we are and hence wouldn't be able to act". In order to identify things, one has to have something in common, but also something that is distinct from the others. People identify themselves so that others may know what to expect from them. Social identities are in themselves one foundation upon which order and predictability in the social world are based.

The processes of primary and subsequent socialization are important for the construction of identity. The development of cognition and the development of identity can be seen as located side by side in primary socialization. Jenkins proposes that the internal-external dialectic of identification is the process whereby all identities – individual and collective – are constituted. What people think about us is no less important than what we think about ourselves. It is not enough to assert an identity, it has to be validated by those with whom we have dealings – the internal-external dialectics between the self-image and the public image. He thus describes the distinction between nominal identity (the name) and virtual identity (experience of what it means to bear it). It is not enough to send a message about identity, but this identity has to be accepted by the significant others before it can be "taken on". Jenkins understands the internal and external "moments of identification" – your external definition of me is part of my internal definition of myself.

Analytically, according to Jenkins (1996), it may be necessary to distinguish between different collective identities – groups and categories. He makes a distinction between a collectivity that identifies and defines itself (a group for itself, as a product of group identification) and a collectivity defined by others (a category in itself, as a product of categorization). Identity contains both individual and social aspects, which are both developed in the dialectical process between the internal (group identification) and external (social categorization) moments of identification.

2.1.1.5 Summary

The *psychosocial perspective* emphasizes the individual aspects of identity formation, even though it also acknowledges the socio-cultural aspects implicit in the process. Development of identity is seen to be based on the *individual's choices* in a process which involves self-exploration, *self-reflection*, and commitment to certain decisions. Thus, "work identity" points out the reasons for one's career choice and one's conceptions of oneself as a worker, but ignores the actual working practices, whereby people struggle to create or maintain their identities.

The *social constructionist* approach understands *identity* as being *constantly formed in language* and in relationships. It suggests an opportunity to use narratives as data when examining the construction of identities. The shortcoming of the narrative approach, however, is that it tends to focus on the linguistic aspects and to overlook the situated practices, such as the work in which the identities are formed.

From the *sociocultural perspective*, Penuel and Wertsch suggested that *identity* formation should be examined *in action*, specifically in contexts where identity is contested or under transforming shifts (such as organizational meetings, community

support groups and psychotherapy sessions). These contexts would provide an insight into how individuals and groups struggle to co-construct a different way of speaking about themselves and to develop new forms of action. However, even this approach fails to consider collective activities and actual work practices.

Holland and her colleagues proposed a collective orientation to examining identity formation. They proposed that *identity formation* should be examined *as a situated practice within*, for example, the *institutions* in which the identities are used, constructed and reconstructed.

Jenkins, representing a dialectic perspective, suggested a concept of *social identity* to overcome the distiction between individual and collective identities. Individual identity is not meaningful in isolation of the social world. Social identity is understood as *a practical matter of what people do*, and the importance of *organization as a context* in which identifications occur is acknowledged.

Even though the reviewed literature increased my understanding concerning the concept of identity, none of the perspectives alone provided conceptual tools for analysing the process of professional identity construction within an institutional context. This is why cultural-historical activity theory was chosen as the theoretical framework for this research. Professional identity is seen to be constructed collectively in discursive processes as well as in practical learning and work situations. The university hospital provides the organizational context for examining the development of professional identity in this study. The process of novice physicians' professional development is examined by paying attention to the critical experiences medical students encounter during their professional socialization. The concept of professional identity within the framework of the cultural-historical activity theory will be more thoroughly reviewed in chapter 3.

2.1.2 Professional socialization in medicine

This chapter aims to review the literature concerning professional socialization in medicine. Some aspects concerning the concept of profession are tackled in brief, but the literature concerning professionalization, i.e. the process by which professions are formed (Abbott, 1988, Burrage & Torstendal, 1990, Konttinen, 1991), is not included. Similarly, the literature concering cognitive expertise development (Ericsson & Smith, 1991) is excluded. I will first present the concept of profession, some general considerations concerning the process of professional socialization in medicine as well as the socializing agents that influence this process. Then, I will look at the socialization process from 1) cognitive, practical and symbolic, 2) emotional and 3) moral points of view. I will mainly concentrate on professional socialization during undergraduate medical education, and will only quote a few studies concerning postgraduate education. The considerations of the process of professional socialization relevant for this study are summed up at the end of this chapter.

2.1.2.1 What is a profession?

Starr (1982) defines profession as "an occupation that regulates itself through systematic, required training; that has a base in technical, specialized knowledge; and that has service rather than profit orientation enshrined in its code of ethics".

Freidson (1970) introduces two meanings of the word "profession"; firstly "an occupation" and secondly "an avowal or promise". Professionals are members of a certain occupational group that have an avowal from the government or other authority for their practice. The legitimization of professional authority involves three claims: 1) the knowledge and competence of the professional have been validated by a community, 2) his knowledge and competence are based on rational, scientific grounds, 3) the professional's judgement and advice are oriented toward a set of substantive values, such as health.

According to the traditional sociological view, medical professionals enjoy a high social status due to their highly regarded skills, knowledge and ethical commitment. Medical professionality involves 1) *specificity* (high levels of technical competence and long and intensive training), 2) *expertness* (in matters of health and disease), 3) *affective neutrality* (expectation to treat problems in objective, scientifically justifiable ways), 4) strong insistence on a *collectivity orientation* (collegiality), and 5) obligation to put *the patient's welfare above one's personal interests*. These make it possible for the physician to perform his function acceptably, to validate his professional authority, and to justify the privileges he is accorded. (Parsons 1951).

Professionals possess formal knowledge and skills that ensure them a high social status. The profession has autonomy to control, organize, define, and develop the practice, education, and intake of new members free of outside control. Professional power is based on the formal knowledge possessed by the group and maintained by scietific activity (Freidson 1970, 1986, 1994). Physicians possess authority to interpret people's health problems in the language of science, to diagnose illnesses and name diseases, to offer prognoses, to shape the patients' understanding of their own experience, and to judge the clients' needs (Starr 1982).

Professionals also have their own professional ethical code, which regulates their relationships with the clients and other professionals (Freidson 1970). In justifying the public's trust, professionals have set higher standards of conduct for themselves. The institutional reinforcement of professional authority also regulates the relations of physicians to each other. The long training imparts a strong sense of common identity as well as technical skills. Professional solidarity has shaped the formulation of professional ethics. (Starr 1982).

2.1.2.2 Professional socialization in medicine

Definition of professional socialization. The term 'socialization' in its psychological and sociological meaning refers to the ways in which individuals are shaped into members of certain groups by specific cultures (Merton *et al.* 1957). The socialization experience involves learning specific skills and techniques as well as taking on an occupational culture. They define the term 'socialization' as:

> "the process by which people selectively acquire the values and attitudes, the interests, skills, and knowledge – in short, the culture – current in the groups of which they are, or seek to become, a member. It refers to the learning of social roles… In application to medical students socialization refers to the process through which he develops his professional self, with its characteristic values, attitudes, knowledge, and skills, fusing these into more or less consistent set of dispositions which govern his behavior in a wide variety of professional (and extraprofessional) situations". (Merton *et al.* 1957)

Process of professional socialization. In short, socialization can be defined as a process by which neophytes come to acquire the attitudes, values, skills, knowledge, and ways of life established in the professional subculture. Socialization takes place primarily through social interaction with people who are significant for the individual –in medical school, faculty members, fellow students, associate personnel (such as nurses) and patients. Since the patterns of medical interaction vary, the results also vary, even though the social environment may seem to be the "same". (Merton *et al.* 1957).

Haas and Shaffir (1977, 1982, 1987) see professional socialization as a moral and symbolic transformation of a lay person into an individual who can take on the special role and status. The process includes several dimensions: 1) developing and identifying with and committing oneself to the profession and a professional career, 2) developing greater loyalty to colleagues than to clients, 3) acquiring a certain detachment and routinization toward one's work, 4) gaining formal knowledge and skills in order to make competent judgements, and 5) developing a pretence of competence even though one may be privately uncertain. Becoming a medical professional is a social process of legitimization of authority, which involves a symbolic, ideational and psychological transformation. Through observation, role-taking, imitation, and practice, students begin to identify with the organization and practice of the medical profession. Professional values and norms are internalized by medical students during the course of their socialization. Students become more empathetic to the profession as they begin to identify with their future role. (Haas & Shaffir 1977, 1987). The perception of exaggerated expectations from the audiences and the ritual ordeal nature of the socialization process contribute to the model of omnipotence that students believed is helpful for successful performance (Haas & Shaffir 1987).

Olmsted and Paget (1969) refer to professional socialization in medical school as an extension of childhood socialization, because it has a strong normative emphasis and medical students have a low status in the power hierarchy and are notably dependent on their socializers. The power of physician-teachers stems from the high motivation of medical students to enter real professional role performance, and the students' success in

clinical performance is regularly evaluated by these socializers, which further enhances the dependency.

Bucher and Stelling (1977) conducted a study on postgraduate trainees in different specialties. They defined the outcomes of the socialization process as being: 1) a specific *professional identity*, 2) *commitment*, and 3) a *sense of career*. They viewed the construction of professional identity as an active process, in which the trainees aimed at managing their own performance, and defined two sets of variables important in the process: 1) *structural* (nature of the organization, position of the professional staff, power positions between the segments, relationship of the professionals in the organization with the larger professional community, selection process), and 2) *situational* (role-playing or work, role models, peer group, coaching and criticism, emotionally important experiences and status passages, i.e. transitional points in the passage). In their view, structural variables set the stage, but situational variables are more important for understanding the process. Role-playing activities are of outstanding importance. The trainee's sense of mastery of knowledge and skills is crucial to the development of commitment and a specific professional identity. The trainee has to perceive that he or she is acting independently and has responsibility for these actions. The sense of mastery or achievement - from being treated as an expert by others, having an original experiment work the first time around, making a correct diagnosis, or seeing a patient improve during treatment – is crucial to the process of constructing professional identity. Other variables, such as role-modeling, coaching and peer group relations, have a supportive influence. Trainees select specific attributes of another person they admire, instead of wanting to be like a certain person. Negative models are also influential – trainees try actively to avoid acquiring certain characteristics. The peer group serves as a reference group – as a standard by which to determine how well they are doing. Trainees actively evaluate themselves and others, they get better in that process, acquire a sense of mastery, and can more confidently pick and choose from the elements provided within the structure of the program and validate their choices. A strong supportive peer group may have a considerable influence on trainees, but it is not critical. The authors conclude that trainees' professional identity, level of commitment, and projected career strongly reflected the structural and situational variables within the training program. (Bucher & Stelling 1977).

Students themselves play an active role in the socialization process by sorting out, evaluating, and selecting alternative cues presented by various socializing agents. Shuval (1975) studied professional socialization by participant observation during early clinical training. She viewed professional socialization as a two-way process in which the socializees are alternately pushed forward into professional roles and backward into their familiar student role. Both extremes in the role transformation carried rewards for the socializee: the professional role rewarded the high motivation and the focus on the long-range goal, whereas the student role carried the rewards of familiarity, ease of performance, and less responsibility. Systematic observation of four socializing agents – physician-teachers, other hospital personnel, patients and peers - showed evidence of pressure on medical students in both directions. The strength of the relative push toward the collegial or student role by the physician-teachers was shown to depend on the rigidity of the status hierarchy in the hospital as well as on the frequency of informal relations.

2.1.2.3 Socializing agents

Peer. The peer group of students plays a role in social control, regulating the speed with which it is considered legitimate by socializees to take on the professional role (Shuval 1975). Students co-operate in many ways. They limit their learning by defining a proper workload collectively, for example, by having consensus as to how long and detailed a medical history they should take on their patients. Students allocate the work between the members of a group, and students shifting their workload on others are not tolerated. Students also co-operate by passing tips and by the more knowledgeable ones helping the others. Students are very tolerant of various unusual behaviors, as long as they do not make school more difficult for others. (Becker *et al.* 1963). Students are assigned to tutorial groups by the faculty, and these groups often remain the same throughout the studies. Sinclair (1997) noted that students co-operated within tutorial groups, but competed with outsiders. However, co-operation turned into competition by the end of the studies. Students' competitive needs to gain experience and to maintain the co-operative links with other students produced tension – a dilemma of co-operating or competing with peers. Haas and Shaffir (1987) highlighted the collective support for independent work in medical schools, which caused many students to put interpersonal relations aside. At the beginning of their studies, students often talked about problematic and puzzling situations with their peers in unofficial settings, but during the clinical phase these opportunities became more scarce (Sinclair 1997).

Faculty. Becker *et al.* (1963) noted that students developed an academic perspective in their relations with the faculty: "In order to finish the school it was necessary to make a good impression on the faculty, either to know or at least give an appearance of knowing". There was pressure to be seen as competent by the faculty, and face-to-face evaluation thus produced anxiety. Giving an impression of themselves as enthusiastic, interested, and eager to learn reduced the possibility of embarrassment and humiliation. (Haas & Shaffir 1977, 1987). Sinclair (1997) and DelVeccio Good (1995) also noted the need of students to express professional idealism towards learning and acquiring experience, to be enthusiastic and show willingness to learn, and to behave appropriately to one's position in the medical hierarchy. Attendings, residents and interns rewarded students who interacted with enthusiasm, diligence, and attentiveness in patient care and expressed commitment to specific clinical specialties.

Students found the situations in which they might make a bad impression on faculty members (giving a wrong answer during a teaching situation or doing badly in an examination) very traumatic (Becker *et al.* 1963). Similarly, Sinclair (1997) reported that a failure to show professional idealism (to get the point of the story, to pick up major clinical signs, to state the likely diagnosis or the fundamental principles of management) produced feelings of inadequacy in students and were felt as deeply wounding to their personal sense of identity. In situations of this kind, students might also experience shame for being "stupid" in public and feel regret for "not knowing" and anger because of the perceived abusive or unfair comments by the seniors. (DelVecchio Good 1995). The majority of clinical students described experiences of mistreatment (such as humiliation) during medical education from many sources, but mostly from their clinical teachers (Sinclair 1997). Students tended to judge faculty members according to how

well they treated students, that is, according to how little they took advantage of their opportunity to embarrass or humiliate them (Becker *et al.* 1963).

During the clerkship phase, a dramatic shift occurred in the process of professionalization as the students were given greater responsibility for patient care. Throughout the medical training, students continually watched doctors' working habits, listened to their philosophies of medical practice, and took note of their competencies and incompetencies. (Haas & Shaffir 1977, 1987). Shuval and Adler (1980) noted three basic patterns of role modeling: active identification, active rejection and inactive orientation. They suggested that students selectively pick and choose their professional role models and anti-models from among their teachers in various learning situations.

Students' competence developed through interactions with attendings, residents, and interns throughout the training. The professional discourse of competence (both in informal and formal settings) often occurred in emotionally laden learning contexts, where students had to examine patients. (DelVecchio Good 1995). The students' dilemma was that they tried to prove themselves as competent to others while they were personally concerned about the limits of their competence (Haas and Shaffir 1977, 1987). The importance of feedback received in interactive situations was commonly described by the students as affecting the experience of being competent. When attendings conveyed their trust in the students' abilities, they encouraged them to push their boundaries of competence (DelVecchio Good 1995).

Nurses. Nurses play an important role as socializers as they run a major part of the activities in the hospital wards where medical students practise. Although nurses do not possess any direct authority on medical students, the most immediate feedback in learning situations often came from the nurses. Medical students' position in relation to nurses is dialectic due to the fact that their status as students is lower than that of legitimized nurses, whereas after graduation, these power relations are reversed (Shuval 1975). Sinclair (1997) also noted this dialectic tension in the relationship between medical students and nurses.

Patients. Throughout the medical education, students reflected upon the nature of their own present and future relationships with patients. During the dissections in the preclinical phase, a link was already established between the student's contemporary attitude towards the dead body and his or her future attitude towards patients (Sinclair 1997). During the clinical studies, students exhibited anxiety over how patients would accept them in their pseudomedical role (Becker *et al.* 1963). Dilemmas in the student–patient relationship were at least partly due to the fact that there were no clear guidelines as to whether to emphasize the learner's or the student-physician's role when meeting patients. (Haas & Shaffir 1987). Especially since examining the patients, i.e. clerking, often served only the purpose of learning, it did not form any part of the treatment. Additionally, on many occasions, the doctor-student relationship was more important than the patient-student relationship. In patient encounters, students often had to proclaim ignorance concerning the diagnosis or treatment because of fear of revealing something that the doctors wanted the patient not to know or that they had been told not to reveal. (Sinclair 1997)

Students had well-defined but variable expectations as to how patients ought to act and what kinds of people they ought to be. Students evaluated patients according to the ease with which an adequate history could be extracted from them (showing a dislike of charity patients unable to give an intelligible history). Patients should not take up a student's time without giving him something worthwhile in return. For example, coronary patients stay in hospital for weeks and students have to visit them daily and keep track of laboratory reports, patient who die in the hospital are autopsied and students have to prepare a lengthy report on the findings. On the other hand, shortcuts to what would normally be a time-consuming process are highly prized (mother delivering a baby in a few minutes instead of 24 hours). (Becker *et al.* 1963).

Students were embarrassed about having to invade patients' privacy with potentially embarrassing questions or disliked having to cause patients pain by performing procedures that hurt them. Students were sometimes also upset by the fact of death (especially when the patient was close to their own age) or some hideous sights occasionally encountered in hospitals, such as infants born with anomalies or patients with extensive brain damage. Students made a distinction between patients who were "really sick" and patients who were "not really sick" (no discernible pathology or common or minor disease, "crocks"). The latter were disliked, because they took up students' time but left them with no more knowledge than before. Co-operative, friendly patients with curable diseases were preferred. Patients with pathology were referred to by students as "interesting cases", because they gave students new clinical experiences or a chance to exercise responsibility. (Becker *et al.* 1963).

2.1.2.4 Cognitive, practical and symbolic socialization

Becker *et al.* (1963) were interested in the immediate (situational) and long-range perspectives that students used to solve the problem of where to direct their effort during medical education. They found that *the long-range perspectives* of freshmen were both unspecific and idealistic – the goal was to become an ideal physician. *The initial perspective* was concern about academic work and a high level of effort directed towards learning everything by working hard. The researchers found that the academic concerns were worse than, for example, the experience of attending a dissection. By the middle of the first year, however, the students realized that, despite all their efforts, they could not learn everything in the time available *(the provisional perspective)*. They hence had to select what they considered important either for practice or for examinations. Students were motivated and committed to work, and many tried to learn exactly what the faculty wanted, using various systems to find out what it was (old exams, faculty tips). *The final perspective* at the end of the first year was pragmatic; the students decided to select the things to study by finding out what the faculty wanted. (Becker *et al.* 1963).

Sinclair (1997) found that, at the preclinical phase already, students aimed to become competent doctors rather than scientists and judged the things to be learned according to their clinical relevance. In dissections, the theoretical knowledge (from books) and the practical knowledge (from gaining experience and responsibility) were combined, but the conflicts between them were left to the students to work out for themselves.

During the clinical years, the students also needed to learn the basic skills involved in getting along with patients and making good observations in order to arrive at the best possible diagnosis. Ward rounds were the most frequent setting for clinical teaching, during which theoretical knowledge was verified through practical experience. In clinical teaching, good clinical examples (typical) or interesting (atypical) cases were appreciated. (Sinclair 1997). The perspective of *clinical experience* implied knowledge acquired by seeing clinical phenomena and dealing with clinical problems at first hand, a polarity with "book learning". It was impossible to learn to recognize heart murmurs from the book alone, and clinical experience was necessary for performing a physical examination. Students valued teaching situations in which they got to see in practice how patients were treated. (Becker *et al.* 1963). There was no commonly agreed way of gaining experience, and students noted that doctors performed physical examinations in different ways. Students acquired experience by taking a history from and examining patients and writing their findings down (Sinclair 1997).

Medical responsibility was seen as a basic duty of the practising physician. Students considered it important to have a chance to exercise responsibility - time spent in the operating room felt "wasted" if one did not get to do anything. The experience of exercising responsibility was found to have a crucial influence on the student's assessment of himself - the chance to do procedures gave a symbolic boost to their self-esteem. The opportunities to exercise responsibility and acquire clinical experience depended on whether the faculty thought the students were capable of handling the situations, and these opportunities were strictly limited by the number of patients. Students were often denied opportunities for both exercising responsibility and gaining clinical experience in a situation where the faculty placed the patient's welfare above the students' needs. The most obvious disparity occurred between the assumptions of teachers and students with regard to the kinds of procedures students were allowed to do on patients. (Becker *et al*. 1963). Clinical teaching was often interrupted by emergencies and patients' needs, which signalled to the students that teaching was less important than practising medicine (Sinclair 1997).

Haas and Shaffir (1987) noted that professional expectations during medical education seemed to focus on learning biomedical knowledge, while psychosocial issues were considered peripheral to "real" medicine. Good (1994) claimed this to be due to the fact that medical language on the whole emphasizes the biomedical paradigm. Weinholz (1991) found that ward rounds meet students' needs for learning biomedical knowledge and problem solving, but are inadequate for teaching them how to address patients' psychosocial needs and how to work effectively with other health professionals.

In addition to the core of professional knowledge, students also have to learn impression management skills to demonstrate competence. They have to give a credible, convincing, and correct performance in front of legitimating audiences (faculty, staff members, patients, peers, family, friends). Thus, professionalization involves a transformation into a role that meets the public's expectations, which might be ill-defined and even contradictory. Faced with inordinate expectations, students professionalize by distancing themselves form those they interact with, using symbols of this new status and managing their performances to convince others and themselves that they are competent and confident to face the immense responsibilities of their privileged role. These symbols (medical language, stethoscopes and other tools, lab jackets, name tags, and demeanor)

function to identify medical professionals as well as to distinguish them from lay people. Symbolic changes also affirm the new role and identity and help students to sustain it. The significance of the symbolic communication of professional competence provides students with a hidden curriculum. Students observed how practising physicians used these symbols of their profession to shape and control the definition of the situations and learned the role play to meet the sometimes impossible expectations. They learned to adopt a cloak of competence, to objectify patients and to control their personal feelings. (Haas & Shaffir 1977, 1987).

Clinical language was a vehicle for conveying doctors' medical status and their privileged access to forms of medical knowledge, and part of their professional identity, enabling efficient communication with other doctors. In taking history, students had to use the clinical narrative style and the languages of different academic disciplines. They learned to communicate in the language that defines medical work and workers. During their education, students heard various "medical morality stories", which suggest that candidates should show that they are not dangerous to the patients. (Sinclair 1997). Stories, jokes and personal anecdotes told by the faculty or peers functioned as part of the oral culture in medical training (Hafferty & Franks 1994).

2.1.2.5 Emotional socialization

According to Hafferty and Franks (1994), emotional socialization, which means internalization of the medical feeling rules, is one of the functions of professional training. In the course of this process, things that are startling or disquieting become something that are routine, acceptable or even preferred. Lay persons are transformed into professionals. The informal, hidden curriculum may often be antithetical to the goals and contents of the courses that are formally offered – students encounter conflicting messages about the nature of medical work and their place in it. Students may perceive the educational process as structured around inconsistencies, contradictions and double messages – and this may lead to feelings of moral relativism and cynicism. The overall process of medical training helps to establish and reinforce a value climate of what is wrong and what is right.

Uncertainty and anxiety have been seen as significant characteristics of professional socialization. Medical students have been noted to experience profound anxiety during the socialization process, and the theme of uncomfortable adaptation to uncertainty is especially common in reports of medical students (Fox 1957, Becker *et al.* 1963, Bucher & Stelling, 1977, Haas & Shaffir 1987).

Uncertainty. Fox (1957) emphasized in her research that, additionally to scientific facts, medical students had to learn about the uncertainties of medicine and how to cope with them. She recognized different types of uncertainty students have to acknowledge during the medical education: 1) incomplete or imperfect mastery of available knowledge, 2) limitations in current medical knowledge and 3) difficulty in distinguishing between personal ignorance and the limitations of current medical knowledge.

Pre-clinical students were inclined to regard their uncertainty as reflecting their own personal inadequacy. The amount to be learned made it impossible to "know all there is to know", and studying hard did not always help them do well. Participation in autopsies heightened their awareness of the uncertainties that result from medical knowledge – not even the doctors were always sure what had caused the patient's death. (Fox 1957).

During their clinical years, students sought for an organized way of learning to think like a doctor. In the early clinical phase, medical students were unsure of the borderline between their personal limitations and the limitations of medical science. For example, while taking a medical history or performing a physical examination, students were many times expected to see things before they knew how to look or what to look for. During the third year, students developed a sense of responsibility as they got to treat infections, remove sutures and dress wounds. The cases students handled were often classic and obvious, and they often continued to be isolated from some of the diagnostic and therapeutic uncertainties. (Fox 1957).

During the fourth year, students encountered the problem of managing a long-term doctor-patient relationship and trying to handle the emotional and environmental components of their patient's disorder. Uncertainty grew and became harder to deal with in a dispassionate way. Students learned to appraise conflicting evidence in arriving at a diagnosis and the connection between emotional stress and physical illness. Their growing competence during the clinical years decreased their uncertainty about their personal knowledge and skills. They accepted the fact that everyone experiences uncertainties and that the admission of ignorance evokes peer approval. They found that neither their classmates nor their instructors had sure and easy answers to some of the questions they find puzzling. Fox (1957) noted that part of the experiences through which the students became acquainted with the uncertainties of medicine were directly comparable to those encountered by physicians, while part seemed to derive from the teaching philosophy or curricular organization of the medical school. (Fox 1957).

Anxiety. The theme of anxiety characterizes the uncomfortable adaptation to uncertainty. Haas and Shaffir (1982) compared the factors that caused anxiety and uncertainty in a traditional and an innovative medical school curriculum, trying to uncover this hidden curriculum. The sources of anxiety common to all medical students include: 1) learning a massive *amount of information* in a short period of time, 2) avoiding *making errors* in diagnosis and prescription, 3) adapting to the *imperfect nature of medical science*, 4) performing *intimate physical examinations*, and 5) adjusting to the *varied reactions* of family, friends, and medical faculty and staff to their new medical student status. They noted that even though the innovative educational setting differed in curriculum and pedagogical methods from the traditional school, these differences did not seem to alter the character of the students' experience. In both settings, the students were dubious about the relevance of their curricula to the demands they would face as professionals as well as the effectiveness of the evaluation processes.

In the long-term perspective, students also felt anxiety about their future responsibilities: 1) continuous awareness that the role they were preparing themselves for would require them to make decisions that affect life and death, 2) assessment of whether they know all they believe they need to know, 3) unease about their ability to predict their future performance, and 4) trying to achieve standards of learning in an educational

system that lacks clear standards. Students tried to conceal their nervousness and discomfort by taking on a "professional" posture, masking their uncertainty and anxiety with an image of self-confidence. They accommodated themselves to uncertainty by selective learning and a careful presentation of self. They also learned to control their feelings and adopted a view that caring for others was best served by detachment and authority. (Haas & Shaffir 1987).

Cynicism. Eron (1955) found a homogenizing effect of medical education, which tended to make medical students more cynical and less idealistic. Becker *et al.* (1963), on the other hand, suggested that medical students transform from being naïve idealistic to pragmatically idealistic during medical education. They claimed that cynicism and idealism are not general attributes of the actor, but judgements made by either the actor or someone else about his activity and feelings in certain circumstances. No act or attitude is in itself cynical or idealistic, but such qualities depend upon the situation and on how one looks at it. In their view, a student may be cynical about certain things but quite idealistic about others, and a person's attitude may or may not be cynical, depending on the audience to whom he is interpreting his actions. For example, the technical attitude that prevented students from becoming emotionally involved in the tragedy of patients' diseases seemed to laymen cruel, heartless, and cynical. Becker *et al.* (1963) found that medical students learned to look upon death and disabling disease not with horror, but as problems of medical responsibility. They claimed that students did not lose their idealistic long-range perspective, but realistically developed a "cynical" concern with the day-to-day details of getting through medical school. When the idealistic values of their lay backgrounds were irrelevant and inapplicable in the medical school situation, they used others with a more immediate bearing, while still maintaining their idealistic values for situations in which they would be more appropriate. Graduating students' idealism was more informed and knowledgeable, more specific and professional, for they knew what to expect and fear in medical practice. (Becker *et al.* 1963).

Haas and Shaffir (1977, 1987) claimed that a loss of idealism was inherent in the very demands of professionalization. They suggested that, as students moved through medical school, developed a professional self-image and took on the identity of a doctor, their views of medicine became transformed from what they described as an idealistic phase to what they believed to be a more realistic one. Students accepted the requirements of detachment and emotional control and the view that patients must be objectified and depersonalized or else the doctor would be unable to maintain clinical objectivity. Striving for competence was the primary student rationale to explain avoiding or shutting off emotional reactions. They came to believe that the relationship with the patient should be governed strictly by the patient's medical problem, while emotional involvement was a hindrance. Students also believed they were being trained for busy lives and accepted the hectic pace as inevitable – it would continue throughout the medical career, as doctors had to work long and irregular hours. The dominant concern with learning was efficiency and productivity. Students believed that they did not have time to learn both medical stuff and caring. Many were interested in working with and helping people, but as they noted, there was too much to learn and too little time, and psychosocial issues therefore tended to become less interesting. They shared accounts of experiences during social occasions and wanted to know whether others had had similar experiences. Their assessment of the

situation was that they had to act professionally (completely and objectively), and they organized their self-presentation to coincide with this expectation.

In Sinclair's (1997) view, medical students' desire to help people (personal idealism) gave way to professional idealism. Emotional socialization included separation from the lay world and increased individualism, the tension between caring and competence and the conflict between personal idealism and acquisition of the basic medical habitus. Students' professional aim transformed to a safe and competent doctor rather than a caring one.

2.1.2.6 Moral socialization

Downie and Charlton (1992) saw socialization as the development of a particular "world-view" of medical morality, which was practical and directed towards action. It involved 1) a short attention span, as *decisions* have to be made *quickly*, 2) *interest with disease* and illness and 3) a high level of *collegiality*. Medical students were divided into classes, all shared the same curriculum and out-of-hours study was expected. A standard of professional behaviour and clothing was encouraged. During apprenticeship, students learned the bedside manners by modeling behaviors, attitudes and emotions. The researchers used the term "esprit de corps" to describe the strong team spirit in medical school classes. They noted that the loyalty to the institution and its members was already emerged at the early stages of the medical programme and later developed further in practice, and even though their cynicism might have grown, the students did not turn against the profession. (Downie & Charlton 1992).

Processes of selection, preparation, initiation, testing, and threats of humiliation during the socialization process helped to sustain the myth that significant changes were under way. Students needed to devote more and more time and energy to their studies instead of their past relationships and interests. Public initiations or "rites de passage" prepared students for their new role. They learned to appropriate detachment and control and took on a new persona. The profession provided newcomers with justifications for changing their values. (Haas & Shaffir 1977, 1982, 1987).

Good and DelVecchio Good (1993) were interested in how the medical world was constructed in the experiences of the students. When interviewed, students reflected on the meaning of a good doctor as being "competent" (skills, knowledge, action – natural sciences) and "caring" (values of relationships, attitudes, compassion and empathy - humanities). Central to the demands of medical education was the need to educate competent physicians while maintaining the qualities of caring. Medical education involved the construction of a completely new world - the development of a new way of looking at the human body as well as learning the language of medicine. As the students needed to identify themselves as physicians, they had to redefine their personal boundaries in several ways – struggling to resist being "swallowed" by medicine and losing their personal lives to their growing professional selves. Students felt enormous concern about how to relate medicine to their private lives and how to reconstruct their personal boundaries – relationship with the patients, relations to colleagues and faculty. The authors pointed out that the moral development of medical students took place in the

dual discourse of competence and caring and involved reconstruction of their personal boundaries. (Good & DelVecchio Good 1993).

Clerkship rotations also provide students with diverse models of how to develop and, at times, to silence a moral voice. Silence regarding errors and medical mistakes ("the conspiracy of silence") is often still a norm. The moral dilemmas of "caring for the patient" and disagreements with the training team over patient care may affront students' moral sensibility. Female and male students' moral conflict narratives contained certain differences; females' stories were more commonly about defending patients, whereas males' stories had to do with how they managed to negotiate power with those above them in the hierarchy. Taking a moral stance required that students had developed a sense of their own competence in exercising professional civility and acquired an ability to judge the practices of their seniors. By the end of the fourth year, students had acquired the basic clinical skills and knowledge expected by the faculty, and most had developed a professional demeanor, some even a new professional persona. Students developed a professional moral voice in which to express their concerns about patients and to engage senior physicians in practical and effective ways. They acquired not only moral but also cautious voices, as they realized which repertoires were tolerated by the profession. (DelVecchio Good 1995).

2.1.2.7 Summary

Profession can be defined as an occupational group that possess specific knowledge and skills, ethical codes of their own and autonomy to control, organize, define, and develop the practice, education, and intake of new members free from outside control. During the professional socialization process, neophytes come to acquire the knowledge, skills, attitudes, values, and ways of life established in the professional subculture. The process involves cognitive, practical, symbolic, emotional, and moral components. Medical socialization takes place primarily through social interaction with different people in the medical school and university hospital: peer, faculty members, associate personnel (such as nurses) and patients. The structural variables (organization, staff, power positions and so on) set the stage for professional socialization, but the situational variables (role playing, role models, peer group, coaching and emotionally important experiences) have the most significant influence on the process.

The peer group of students plays a role in social control, regulating the speed with which it is considered legitimate to take on the professional role. Faculty are important as role models and evaluators. Students are eager to gain clinical experience, to see how real doctors treat patients. However, the chances to role-play (examine patients) and practise medical responsibility (perform procedures on patients) have the most important influence on the development of professional identity. Getting feedback from learning situations is important, but face-to-face evaluation often also produces anxiety. Situations of humiliation (giving a wrong answer, not getting the point) during training evoke feelings of inadequacy in students and can be deeply wounding. Patients are also very important as socializers - throughout the medical education students reflect upon the

nature of their own present and future relationships with patients as they construct their professional role.

The biomedical paradigm, i.e. professional knowledge and skills, are emphasized in the curricula, while psychosocial issues tend to remain peripheral to "real" medicine due to the perceived lack of time to learn everything. The image of an ideal physician is competent rather than caring. Emotional socialization is one of the functions of professional training. Faced with uncertainty, anxiety and inordinate expectations, students learn to control their emotions and develop a professional cloak of competence. During moral socialization, medical students' personal idealism develops into professional idealism, as the realities of medical practice gradually become clear.

There is a lot of literature concerning professional socialization in medicine, but studies concerning specifically the development of professional identity are scarce. This study aims to clarify the process of construction of physician's professional identity by examining medical students' critical experiences of various learning situations during their professional socialization in undergraduate medical education.

2.1.3 Empirical studies of socialization during medical education in Finland

Most of the empirical studies of socialization during medical education in Finland have concentrated on the conceptions of medical students or graduated doctors concerning various aspects of medical education. These aspects include: 1) *medical education in general* (reasons for applying to medical school, content of the studies), 2) *emotional learning environment* (stress and mistreatment), 3) *features of an ideal physician,* 4) *professional orientation and career plans*, with which only a few of the studies tackle specifically 5) *professional socialization and development of identity*. In this chapter, I will mainly concentrate on studies that deal with the development of skills and attitudes as well as studies concerning emotional socialization.

2.1.3.1 Medical education in general

Young Physician 88 Study. Kumpusalo *et al.* (1991) studied young physicians' opinions of undergraduate medical education in the Young Physician 88 Study. The study population consisted of all the doctors registered in Finland during the years 1977-1986. The survey was sent, after randomization, to half of these doctors (n=2632). The response rate was 66 %. According to the respondents, undergraduate hospital instruction was adequate, but the teaching of practice in health care centers did not meet their professional needs. The doctors' criticism focused on the teaching of particular professional knowledge and skills needed in primary care. Ethical and social issues as well as research and teaching skills, team work and administration were also inadequately taught.

Physician 93 Study. The results were similar in a five-year follow-up survey (Virjo *et al.* 1995, Kumpusalo *et al.* 1995, Hyppölä *et al.* 1996). The study population consisted of all the doctors registered in Finland during 1977-1991, and the questionnaire was sent to half of these doctors (n=2332). The response rate was 78%. Only every third doctor said that undergraduate medical education responds well or very well to the demands in practice. Clinical skills were perceived to have been taught well, while communication skills, group and team work skills as well as administrative, organizational, and leadership skills were taught poorly. The authors concluded that the instruction given in a university hospital trains students to know diseases, but does not prepare them to solve ordinary people's ordinary problems. There were inadequacies in teaching, especially in the field of social and ethical issues.

Physician 98 Study. The ten-year follow-up study of Finnish physicians was conducted in 1998 (Hyppölä 2000, Hyppölä *et al.* 2000). The study population of the Physician 98 Study consisted of all the doctors registered in Finland during 1977-1996. The physicians born on odd-numbered days (n=2492) were selected into the sample. The response rate was 73 %. Of the respondents, 68 % were female. Altogether 57 % worked in hospitals, 26 % in health care centers, 9 % in research or teaching, and 8 % in other places. Of the respondents, 66% were married, 14% were co-habiting, and 3% were divorced, 16% were single, and less than 1% were widows. The spouse of the respondent was a doctor in 29% of the cases. Of the respondents, 10% had a doctor as a father, while the fathers of 3% had a training in some other field of health care. The mothers of 4% of the respondents were doctors, and the mother had received training in another field of health care in 19% of the cases.

A quarter of the respondents said that they would not choose medicine again if they were now beginning their university studies. Most of the respondents felt that they had received adequate training for working in hospitals and health care centers as well as in health education. However, over 80% of the respondents were of the opinion that they had received inadequate instruction about administrative duties and for working as general practitioners work. Concerning work in hospital, over half of the respondents were satisfied with the teaching of diagnostics, examination techniques, and procedures as well as working on wards. Most of the respondents thought, however, that undergraduate medical education had prepared them poorly for work in primary health care (Hyppölä 2000). The graduates from community-oriented medical schools were more satisfied (Kuopio 84%, Tampere 76%) with the teaching of health care center work than the ones who had graduated from traditional schools (Helsinki, 35%, Turku, 44% and Oulu 47%) (Hyppölä *et al.* 2000). The results of the survey were similar to those obtained in 1988 and 1993 (Hyppölä 2001).

2.1.3.2 Emotional learning environment

Medical students' stress and coping skills. The perceived stress and coping skills of medical students were examined in a survey of 3rd and 5th year medical students (n=88) at the University of Oulu, Finland (Leinonen *et al.* 1995, Nevala *et al.* 1996). The most important stressors were reported to be the threat of unemployment and uncertainty about the future. Responsibility, fear of making mistakes and feelings of not being competent enough caused stress more commonly to female students. Women found the problems implicit in professional life and studying more stressing than male students. Male students reported themselves to tolerate stress better and to influence the pace and content of their studies more often than females. Confronting dying and severely (either mentally or physically) ill patients was also perceived as stressful, especially at the beginning of the clinical studies. Personal life caused less stress than the studies. Financial worries were not common. One fourth of the respondents reported values over 90 (on a visual analogue scale between 0 -no stress- and 100 -extreme stress-) for at least two items, and one seventh for at least three of the stressor items. Female students reported more commonly extreme values for at least three of the stress items (21% vs. 3%). There was no difference between the younger and older students in reporting extreme values. The most important resources relieving stress, especially for younger and female students, were social relations (friends, family and peer) and physical exercise. For the older students, cognitive coping strategies (reasoning, theorizing, forming routines) were more important. Alcohol, coffee, cigarettes and drugs were not considered important factors relieving stress. However, older students, especially men, used alcohol significantly more commonly than younger ones (Nevala *et al.* 1996).

Niemi and Vainiomäki (1999) studied medical students' distress and coping strategies during the preclinical phase of medical education and found a significant increase in symptoms during the first two years of study. The highest level of stress symptoms was seen in the socially coping group. Although the majority of students seemed to cope well, the subgroups that did not articulate any means of coping as well as those that reported themselves to cope socially were identified as being at a potential risk for negative development. The authors suggest that more attention should be given to supporting medical students during the first study years.

Perceived mistreatment. Uhari *et al.* (1994) studied the perceived mistreatment of medical students in two medical schools (Oulu and Tampere) in Finland. They found that three out of every four informants reported of some kind of mistreatment during medical education. The most common types of mistreatment were sexual mistreatment (37%), such as slurs, and sexual discrimination by classmates, teachers, nurses, or patients. Some of the respondents reported having experienced nasty, rude, or hostile behaviour from nurses (39%) or from patients (15%). About 15% of the students reported having heard derogatory or offensive remarks about medicine from fellow students, nurses, family members, or teachers.

Rautio *et al.* (1999) studied the perceived mistreatment of 2nd and 4th year students in all faculties in the University of Oulu. The survey instrument was the same as that used by Uhari and his colleagues. A total of 70 % of the respondents had experienced some kind of mistreatment during their university studies. The most common form of

mistreatment was humiliation among both male and female students. The results suggested that female medical students felt themselves having been treated worse than males. Sexual mistreatment was reported by 28% of the medical students. Of the respondents, 22% reported having heard derogatory remarks about studying medicine from family members and 29% from other medical students. Students were also asked to answer to an open-ended question "Have you, during your university education, ever been demanded to do something that you thought was immoral, unethical, or something that you personally couldn't accept?" Of the medical students, 17% responded having had acted against their conviction. In their answers, students criticized the practice of using too seriously ill patients in teaching situations. They also reported problems concerning some laboratory experiments or clinical training situations. The authors suggest that more attention should be paid to improving the emotional learning environment and giving support to students.

2.1.3.3 Characteristics of an ideal physician

Professional conceptions. Järvinen (1985) studied the professional and scientific conceptions of medical students in a follow-up study in Helsinki, Turku, Tampere and Kuopio. The data were collected during 1977-1983. The answers were classified, based on the respondents' conceptions of what a good doctor is like, into three categories: 1) professional clinician (emphasizing professional skills), 2) authoritarian clinician (emphasizing authority and calling), and 3) humanist clinician (emphasizing holistic care). The responses of male and female students did not differ. The answers to the question "What are, for you personally, the most difficult issues in the medical profession?" could be classified into three categories: 1) insufficient knowledge or skills, 2) factors that have to do with the working context (administration, wages, routine-like work), and 3) problems caused by patients (unnecessary consultations, complaints, asocial patients). At the time of the first inquiry, 72% of the respondents felt that teaching of psychology and sociology was important in medical education (Järvinen 1985).

Doctor in the year 2000. Niemi *et al.* (1993) studied medical student's learning experiences, conceptions concerning medical training and the work of physicians, career plans, and development of professional identity. The research design was longitudinal and involved both quantitative (questionnaire) as qualitative methods (interviews, essays). Students were asked to list the most important *qualities of an ideal physician*. In their responses, 81% of the preclinical students and 57% of the graduating students mentioned empathy, while professional skills were mentioned by 48% and 52%, respectively. The preclinical students ranked communication skills as the third most important quality (42%), while graduating students ranked professional knowledge third (34%).

Conceptions of the ideal physician. Rimpelä *et al.* (1992) studied medical students' conceptions of the ideal physician. The study group consisted of one hundred medical students enrolled at the same time. They used a self-assessment questionnaire during a

small group learning experience. The students considered as important many capabilities that had to do more with the doctor's personality than professional knowledge and technical skills. The students valued responsibility, tolerance, willingness to help, and coping skills against stress. Many of the students felt a lacking capacity to be empathetic, to acknowledge one's mistakes, and to know one's limits.

2.1.3.4 Professional orientations and career plans

Professional orientations. Järvinen (1985) identified three professional orientations among medical students: 1) skills orientation (students adapt to and concentrate on school-like studying), 2) professional orientation (students adapt to the traditional norms and expectations of the profession), and 3) societal orientation (students expand their interests outside medical school). She noted that the different professional orientations developed early, already during the preclinical years. By the end of their studies, most medical students had a profession-oriented approach. They emphasized professional autonomy, specialized skills and an authoritarian role on the one hand and a service role on the other and underlined early commitment to the profession. When examining medical students' scientific conceptions, she found that the thinking of medical students in terms of disease concepts and professional orientations narrowed down during the medical education. A wider conception of illness was held by female medical students at the beginning of their studies, but this difference disappeared during the pre-clinical phase. By the end of the studies, however, the gender difference re-appeared. She concluded that medical education homogenizes the thinking of students and apparently does not provide enough support for building a subjective professional personality instead of adopting the professional model. (Järvinen 1985).

Murto (1996) studied medical students' (n=109) professional orientations based on essays written on the topic "My work and future as a physician in the 21st century" by first-year medical students. Five different dimensions of professional orientation were identified: 1) impersonal (37%) - personal (47%) - personal, but in the societal context (16%), 2) uncritical (25%) - reflective (67%) - multidimensional, mature reflection (8%), 3) idealistic (57%) - realistic (43%), 4) technical (37%) - humanistic (45%) - both technical and humanistic (18%), 5) professional (66%) - divergent professional (16%) - empathetic professional (18%). When these results were analyzed by cross-tabulation, it turned out that the professional orientation was linked with technical and idealistic orientations as well as with less reflectivity, whereas reflectivity was linked with personal commitment and an empathetic orientation. The students' age or the number of relatives employed in health care did not affect their orientation. However, the students whose parents were doctors presented more specific career plans then the rest of the students at the beginning of their studies already. Working experience in health care was related to a more realistic orientation. Male students had a technical and professional orientation more commonly than females.

Career plans. Concerning career choices, Niemi *et al.* (1993) found that medical students were most interested in hospital work or in work in the private sector. More than one third of the respondents did not even consider a career in primary care. Only one third of the respondents were interested in research work. Approximately half of the respondents felt that they had received too little theoretical instruction in social and ethical issues. The authors noted a strong commitment to the future career already at the beginning of medical studies, even though the students only had a vague idea of what medical education consists of. Most of the students aimed at a clinician's career, preferably in a hospital or in the private sector.

2.1.3.5 Professional socialization and identity

Factors influencing professional socialization. Uutela *et al.* (1982) were interested in the social background and factors influencing the socialization of medical and dentistry students in the University of Helsinki medical faculty. The response rate was 51% (n=89). Of the respondents, two thirds were female and three fourths were dentistry students. The respondents viewed their parents as having had the most influence on their personality and values. The decision to apply to medical school had been made most frequently during high school. Of the respondents, seven out of ten had been accepted to medical school the first time they applied. One third of the respondents had working experience from a health care field before beginning their studies. One fourth thought that they had performed better than average in medical school. When asked about their satisfaction with work, the respondent said that the most important factors were professional competence, the patients' trust and the possibility to help suffering people. The answers to the question of what kind of doctors the respondents would like to be in the future emphasized professional competence and patient-centeredness. The most important aspects concerning the ideal profession according to the respondents were the chance to develop oneself, being close to people and helping and understanding others. The most important social values (connected to the definition of one's own identity and close relationships) for the respondents were mental balance, real friendship, mature love, self-respect, and freedom. Of the instrumental values, the most important were honesty, responsibility, and open-mindedness (Uutela *et al.* 1982).

Physician 1988 Study. Kumpusalo *et al.* (1994) studied graduated doctors' conceptions of professional identity by asking them to assess on a five-point Likert scale how well certain characteristics applied to themselves as doctors. Five factors representing the physicians' professional identities were identified. There were statistically significant differences in identity between female and male physicians as well as between hospital and primary care physicians. Female physicians and doctors working in primary care identified themselves more as humanists and bureaucrats, whereas male physicians and doctors working in hospitals were more likely to consider themselves as healers and scientists.

Growing up to be a physician. Vainiomäki (1995) reported medical students' evaluation of the implementation of an early patient contact track in medical education in the University of Turku. The data consisted of questionnaires, diaries, interviews as well as documents produced during the process. The students were offered an opportunity to get acquainted with general practitioners' work by visiting a health care center for one afternoon in every two weeks during the first year of medical education. The results suggested that the early patient contact track served well in supporting students' motivation to learn medicine as well as their professional growth in the early stages of studying. Students' conceptions about what it meant to become a doctor became clearer and the certainty of their career choice increased. They also recognized the need to learn communications skills and came to appreciate general practitioners as competent professionals.

Professional development. Sankala *et al.* (1996) studied the essay answers of volunteer medical students in the University of Oulu concerning their own professional development. Professional development was defined by the respondents as active self-directed training based on working experience. The process was seen to have begun in childhood based on various experiences of illness and health, but the respondents also acknowledged the influence of experiences during basic medical education. Professional development was seen to include, additionally to a growing amount of professional knowledge and skills, also personal growth and an increasing ability to respond to the needs of patients and society. Collegiality and learning from role models as well as role playing were considered essential aspects of the process. Patient contacts and especially feedback from the patients and their relatives were seen as important. Students also mentioned the need to learn to relate to the outside expectations towards doctors and to admit their own limits.

Doctor in the year 2000. Murto (1996) studied medical students' identity development by interviewing medical students (n=35) at the beginning of their clinical studies. She evaluated the phase of identity development according to Marcia's identity status model (Marcia 1966) and found that most of the students (26/35) were at the stage of moratorium. Only 3 students were at the diffuse state and 6 students at the achieved stage of identity. In defining the factors influencing professional development, Murto (1996) found the most frequently mentioned issues to be 1) seeing teachers or other doctors work, 2) patient contacts, 3) increasing knowledge, and 4) the medical atmosphere at the hospital. The following items were also mentioned: practising procedures, peer group activities, personal development, relatives' expectations and illness experiences and collegiality. In the interviews, the students described the process of professional development as taking place gradually. They did not report phases of regression, but mentioned phases of "plateau" and phases of exponential development. They perceived professional development as an inseparable part of personal development.

Murto (1996) also distinguished different themes of professional development: cognitive development, development of competency, and socialization to the profession. The phases of *cognitive development* she mentioned were: 1) motivation to learn, 2) information overload, 3) reflection on the minimum content one should learn, prioritizing the hard facts, 4) learning for the exams, 5) trust that to do one's best must be enough.

The development of competency seemed to occur in situations where theoretical and the practical knowledge coincided. Patient contacts, especially situations where the student had managed to perform well in a situation he/she has perceived as difficult, were also reported as important for professional development. Murto (1996) modeled the development as consisting of three stages: 1) uncertainty and concentrating on oneself, 2) concentrating on the disease, examining techniques and trying to remember all, 3) concentrating on the disease on the one hand and on the patient as a human being on the other. In *socialization to the profession*, the importance of other doctors is crucial. Students construct their conception of a good doctor by following other doctors' work.

Niemi and Murto (1996) and Niemi (1997) studied medical students' identities using learning logs and identity status interviews among preclinical students during an early patient contact track. They found four types of early professional reflection in the learning logs: "committed reflection", "emotional exploration", "objective reporting" and "scant and avoidant reporting". In comparing the types of reflection to the students' professional views, they noted that "committed reflectors" were the most certain and "emotional explorers" the least certain group. "Emotional explorers" and "scant reporters" had more often considered quitting the medical programme. Based on the identity status interviews, they identified four subgroups: "achieved professional identity", "active exploration of specific alternatives", "vague fantasies and tentative ideas", and "diffuse identity status". When comparing the students' identity status and professional views, they found that the more "exploring" and "achieved identity" students (67%) were more certain about their career choice than the "diffuse" and "vague" identity students (44%) at the end of the preclinical training. There was no direct association between professional reflection during the first study year and identity status at the end of the preclinical training. "Committed reflectors", however tended to reach the "achieved identity status" (33%) more often than "objective reporters" (10%).

2.1.3.6 Summary

Studies concerning professional socialization in medical education in Finland during the late 1990's are scarce. The studies on medical education have mainly dealt with the reasons for applying to medical school, the content of the studies, perceived stress and mistreatment, conceptions of an ideal physician, professional orientation and career plans. Only a few of the studies have tackled specifically the construction of professional identity, which is the aim of this study.

2.2 Medical education

In this chapter, the literature on the history of the medical profession and medical education as well as the aims and standards of medical education are reviewed to the extent that they are relevant for understanding physicians' professional development. At the end of this chapter, the context of this research, the Medical Faculty of Oulu, is presented in more detail.

2.2.1 History of medical profession and medical education

History of medical profession. Physicians have never been the only group claiming to have healing powers. The high levels of illness and the very limited success of pre-modern medicine in alleviating the major lethal and crippling diseases led to wide-ranging pluralism. Until the late 18th century, there were several reputable healers – priests or gentlemen - and naturally also unlearned "quacks", who were even more reputable and more widely respected than learned physicians. By far the greatest part of medical care was administered by women in communal and domestic settings. Women learned their medical methods by experience and oral transmission (Sinclair 1997).

Only since the early 19th century has the label of 'physician' been applied to the group of healers who claimed to have scientific knowledge of the human body and a shared approach to solve medical problems. This group gradually gained a dominant position by integrating the competing groups into a united medical profession (Freidson 1970). There were historically three separate categories of qualified medical practitioners in Europe: the learned profession (physicians), the craft (surgeons), and the trade (apothecaries) (Sinclair 1997). The physicians were theoretically trained, their job included observation of the patients, theoretical speculation and prescribing medicine.

> "The physician was concerned with internal medicine. Aside from feeling the pulse, and observing the urine and feces, practice involved history-taking, elaborate diagnosis based on theoretical pathology and considered opinion, and specific prescribing… What physicians did not do was as important as what they did – they did not examine, they did not operate, they did not dispense medicine" (Downie & Charlton 1992).

The manual tasks, i.e. procedures and operations, were carried out by surgeons. Apothecaries also had a right to attend to patients and prescribe. They could charge for the drugs, but not for their advice (Downie & Charlton 1992).

In America, the physician's role did not exist in an independent form in the colonies. All manner of people took up medicine and appropriated the title of doctor. It was common for the clergy to combine religious and medical services, but men and women of lower ranks also served as doctors. The doctors of the colonies were comparable to the surgeon-apothecaries who practised in England. Gradually, those who practised medicine began to practise it as a primary role and attended apprenticeships in Europe, mainly in Paris. (Starr 1982).

Professional medical status in England was fully established by the Medical Act in 1858. At that time, the General Medical Council (GMC) was also founded. The Act established the profession legally and ensured the profession's autonomy (Sinclair, 1997), aiming to regulate both education and ethical behavior. However, the profession was not unified and the education remained virtually unchanged (Downie & Charlton 1992). In America, the first licensure law calling for prospective examination of doctors was passed in New York in 1760. At this time, medicine began to separate from religion (Starr 1982).

History of medical education. Historically, there was no single, defined pathway for training doctors. Prescribed courses of studies were seldom required, and various combinations of apprenticeships were used to prepare for the examination. (Downie and Charlton 1992). For example, the term of apprenticeship for surgeon-apothecaries was seven years. The benefits for the apprentice were that he could not be dismissed during the term and that, at the end, he would become legally entitled to practise as a surgeon-apothecary with the possibility of himself becoming a master (Sinclair 1997). From the beginning of 19th century onwards, there were three types of medical training. *In France and England*, medical education was mainly given in hospitals. The training produced very good clinicians, but there was not much scientific research included in the education. *In Germany, Scandinavia and Holland*, the physicians were trained at universities. Medical education was based on scientific work and included less practical training. Due to the scientific discoveries, Germany became the leading center of medicine at the end of 19th century. *In the United States*, there were various combinations of educational systems: apprenticeship, commercial training ,and scientific training.

In America, the nominal requirements for an M.D. degree in the 18th century were knowledge of Latin and natural and experimental philosophy, three years of supervision as an apprentice, attendance for two terms of lectures and passing of all examinations, and a thesis. To graduate, the student had to be at least 21 years of age. But these requirements were not well enforced – the exams were less rigorous, partly because the professors were paid by the student only if he passed. Medical schools and medical societies were mutually competitive and offered competing means of certification. In the 1840's, the first woman had formal medical training in America. (Starr 1982).

At the end of 19th century, a new model, where the basic education was given in a university and the clinical instruction in a highly specialized hospital, was developed (Vuori 1979). Abraham Flexner (1910) renewed the standards of medical education in the USA in his report to the Carnagie Foundation for the advancement of teaching. He reviewed all the medical schools in the USA and heavily criticized the standards and poor results of many institutions: "overproduction of ill trained men". He wanted to establish a scientific basis in doctor training and suggested that college education should be obligatory for everyone entering medicine. He also introduced a modern curriculum containing preclinical (normal functioning) and clinical (pathological functioning; ward work, patient work, demonstrations, class exercises and lectures) education. He emphasized that all schools should have close connections with teaching hospitals in order to provide their students enough possibilities to examine patients and to "learn by doing". He also set requirements for the teaching hospitals, claiming that they should be of sufficient size and well equipped with teaching and working quarters. The school

faculty should also work as hospital staff. Teaching arrangements should be left to the judgement of each teacher, but they should always protect the welfare of individual patients. He acknowledged that the physicians' function is becoming more social and preventive rather than individual and curative. Thus, in his opinion, the doctor was to be, most of all, an educated man. As a result of this report and in order to improve the quality of medical education, approximately half of the medical education institutions were closed down. As a long-term effect, the Flexner report set the standards of medical education: biomedical, hospital-centered, aimed at curing and specialized knowledge (Vuori 1979).

By the end of the 19th century, medical education aimed at producing relatively uniformly trained general practitioners with dual qualifications in medicine and surgery. *The safe general practitioner* was the essential goal of undergraduate education. The minimal length of study was set to four years, and all new teachers were to be graduates. For several decades, it had been possible to practise with either a medical or a surgical qualification. Now, double qualification became the minimum requirement for a general practitioner (Downie & Charlton 1992).

History of medical education in Finland. The first county hospital with 6 beds, funded by the inhabitants of the city, was started in Turku in 1759. The county hospital of Oulu was founded in 1792. The total number of hospital beds in Finland at the beginning of 19th century was 60. There were 30 doctors, of whom 20 worked in the bigger cities. The first district doctor began working in Saarijärvi in 1821. It became possible to study medicine in Finland when the Collegium Medicum was founded in Turku in 1811. (Vuoria 1989). Before this, Finnish doctors had acquired their training in Sweden or in Central Europe, mainly in Germany. The Finnish medical education system was originally based on the German model (Vuori 1979). The first female physician in the Nordic Countries was Finnish Rosina Heikel (1842-1929) who got a permission to practise medicine in spite of her gender in the year 1878 (Turpeinen-Alitalo 1987). The number of female physicians grew remarkably in the 20th century. The growth of the number of doctors in Finland during 1900-1999 is presented in Table 1.

Table 1. Number of doctors in Finland in 1900-1999 (Finnish Medical Association 2000).

Year	Doctors	Females (%)	Admissions	Inhabitants per doctor
1900	373	1		7 143
1930	1000	9		3 463
1950	2034	21	127	2 018
1960	2915	22	317	1 573
1970	4965	27	488	958
1980	9517	33	557	530
1990	14325	42	525	364
1996	17142	46	362	317
1999	18590	48	485	296

Summary. The professional status of doctors as well as the role of physicians has changed over the history as a result of the growing amount of scientific knowledge, and throughout the history of medical education there has been some tension between practical and scientific training. In its earlier forms, medical education was based on apprenticeship training with a master. The training was practical, and there were no clear standards for education. The institutionalization of medical education began as the universities and hospital medical schools developed. At this time, the common professional standards were also set. However, it was only in the early 20th century, after the publication of Flexner's report, that the biomedical paradigm and natural sciences became the basis of medical education. The combined model of education with preclinical (university) and clinical (hospital) studies was introduced as a standard.

2.2.2 Aims and standards of medical education

Aims of medical education in the late 20th century. The aim of medical education is to produce competent doctors, and there have been various attempts to try and define what "a good doctor" is like. The Educational Committee of the General Medical Council in England has defined the goals of medical education in the Recommendations on Undergraduate Medical Education (GMC 1993) as follows:

> "The student should acquire *knowledge* and *understanding* of health and its promotion, and of disease, its prevention and management, in the context of the whole individual and his or her place in the family and in society;
>
> The student should acquire and become proficient in basic clinical *skills*, such as the ability to obtain a patient's history, to undertake a comprehensive physical and mental state examination and interpret the findings, and to demonstrate competence in the performance of a limited number of basic technical procedures;
>
> The student should acquire and demonstrate *attitudes* necessary for the achievement of high standards of medical practice, both in relation to the provision of care of individuals and populations and to his or her own personal development."

General Medical Council additionally defined more specifically the attributes of the independent practitioner in this report (GMC 1993), as shown in detail in Table 2.

Table 2. Attributes of the independent practitioner (GMC 1993) (italics by the author).

	Attributes of the independent practitioner
1	the ability to *solve* clinical and other *problems* in medical practice,
2	possession of *adequate knowledge and understanding* of the general structure and function of the human body and workings of the mind, in health and in disease, and of their interaction also with the physical and social environment,
3	possession of *consultation skills*,
4	acquisition of *a high standard of knowledge and skills* in the doctor's specialty,
5	willingness and *ability to deal with common medical emergencies* and with other illness in an emergency,
6	the ability to contribute appropriately to the *prevention of illness* and promotion of health,
7	the ability to recognize and analyze *ethical problems*,
8	the maintenance of *appropriate attitudes and conduct*,
9	mastery of skills required to *work within a team*,
10	acquisition of experience in *administration* and planning,
11	duty to contribute to *the advancement of medical knowledge* and skill,
12	recognition of the obligation to *teach others*.

The international organization of medical faculties from all over the world, World Federation for Medical Education (WFME 1993), on the other hand, has designated the doctor of the 21st century in the following way:

> "Doctors must promote health, prevent and treat disease, and rehabilitate the disabled in a compassionate, ethical way. Increasingly they must do this within resource constraints. But society, the profession, and medical educators call for more. Doctors have also to be better providers of primary care; communicators; critical thinkers; motivated life-long learners, information specialists; practitioners of applied economics; sociology, anthropology, epidemiology and behavioral medicine; health team managers; and advocates for communities."

Independent researchers have also made attempts to define the aims of medical education. Coombs and Virshup (1994) called for a concept of "good enough doctor" (see Table 3). In their opinion, a good enough doctor is a knowledgeable, skilled, and a reasonably good person with the following qualities:

Table 3. A good enough doctor (Coombs & Virshup 1994).

	A good enough doctor
1	Respect, caring, compassion, and desire to help others
2	Has a good sense of self and of self-worth
3	Is open to his/her own feelings and those of the others and can communicate them appropriately
4	Is capable of close, caring, supportive, intimate relationships
5	Can relate comfortably with patients and other people without strain or anxiety
6	Is not overly anxious about failures or mistakes and learns from the others' criticism and negative evaluations without needing to deny, defend or attack
7	Takes care of his/ her own needs for rest, exercise, outside interests, and interaction with the others
8	Can work reasonable hours, efficiently and effectively
9	Enjoys life, school, family and other people

Standards of medical education in the late 20th century. Various international recommendations on medical education have been issued since the beginning of the 1980´s (see Table 4). This review covers these recommendations only to the extent they are relevant concerning physician's professional development.

Table 4. International recommendations for medical education 1984-1993.

Organization	Year	Title of the report
AAMC	1984	Report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine (GPEP).
WFME	1988	Edinburgh declaration
WFME	1993	Recommendations of the World Summit on Medical education
GMC	1993	Principle recommendations on medical education
AAMC	1993	Report on Assessing Change in Medical Education – The Road for Implementation (ACME-TRI report)

AAMC (1984) published the results of a panel for General Professional Education of Physicians (GPEP report) (see also Cooper 1985). In this report, it was noted that the rapid and profound change of medicine (new knowledge produced by biomedical research, complex technology, demographic shifts in society, and new approaches to the delivery of medical care) was the force that created a need to re-examine the medical education. The report highlighted *the lack of general awareness of the content of the entire span of a student's requirements*. The knowledge and skills students are expected to acquire were found to be poorly defined and the clinical experiences to be poorly integrated and inadequately supervised by the faculty. Additionally, concern for the lack of role models and feedback to students about their performances was expressed.

In the "Edinburgh declaration" published by the World Federation for Medical Education (WFME 1988), special attention was paid to the *integration of science with clinical practice, training of teachers and life-long learning*. This declaration was

criticized by Metcalfe (1989), who noted that there was still no specific teaching aimed at coping with uncertainty in medical education. He suggested that one tool available for use would be "reflection on action", whereby real decisions would be reviewed by the decision-maker and peers. He suggested the restoration of ordinary consultations and qualitative assessment methods to be developed for research on medical education.

The World Summit on Medical Education (WFME 1993) aimed at collecting a systematic overview of the range of problems and formulating strategies to implement changes in medical education worldwide. The recommendations included, among other things, that the teaching of medicine should be based on integrated knowledge from different scientific fields (biomedical, behavioral, and social sciences) and competency-based learning strategies in real world settings even outside university hospitals. *A reviewed core curriculum supplemented by special study modules* (emphasizing critical thinking, communication and interviewing skills as well as ethics and providing instruction of the health care system) was suggested as the basis of education. Programs to enhance teaching expertise and communicative skills of their staff should be developed.

In England, the General Medical Council published recommendations on medical education (GMC 1993). This report suggested that medical education should promote exploration and *critical evaluation of knowledge*, that the teaching of essential skills should occur under *supervision,* and that the teaching of *communication skills as well as attitudes* should be included in the curriculum.

In the report on Assessing Change in Medical Education – The Road to Implementation (ACME-TRI report, AAMC 1993), it was recommended that a faculty member and a senior resident responsible for medical students should be appointed for every clinical discipline. The report also suggested that *cross-disciplinary teaching* opportunities should be arranged and that special attention should be paid to fostering life-long learning.

Summary. The recommendations concerning the aims of medical education reveal an idealistic picture of a doctor, which may be hard to accomplish in reality. The increasing knowledge produced by biomedical research, the advanced technology, the demographic shifts in society and the new approaches to the delivery of medical care have changed the professional role of doctors, and a re-evaluation of medical education is thus needed. The recommendations concerning medical education reforms worldwide suggest that medical instruction should be based on integrated knowledge from different scientific fields. Special study modules emphasizing critical thinking, communication, interviewing, and team work skills as well as ethics have been suggested as the basis of education. Medical education should provide, additionally to clinical knowledge and skills, also support for the attitudinal, both personal and professional, development of students. This study aims to find out how medical students reconcile the dilemmas arising due to the contradictory objectives in their learning environment and whether they receive enough support for their professional development during undergraduate medical education.

2.2.3 Medical education in the University of Oulu

History of the Medical Faculty in Oulu. The University of Oulu was founded in 1959 and the Medical Faculty in 1960. The first clinics founded in the teaching hospital were for internal medicine, surgery, pathology, pharmacology, bacteriology, and radiology. During the following years, the clinics were developed to meet the needs of teaching, as the first class progressed in their studies (see Table 5) (Salo & Lackman 1998).

Table 5. History of the medical faculty at the University of Oulu.

Year	History of the medical faculty at the university of Oulu
1959	Founding of the university
1960	Founding of the medical faculty
1962	Founding of the administration of the medical faculty
1963	Clinical teaching began in the Oulu County Hospital
1968	Preclinical medical teaching began in Oulu
1970	Instruction in basic science teaching began in the medical faculty,
	8 departments and 10 clinics, 20 professors
1971	The new building of Oulu University Hospital was ready for use
1993	34 professors, 27 associate professors
	11 departments and 15 clinics
1999	119 professors*

* the number of professors increased significantly in 1998, when the title "associate professor" was abolished

The first part of the programme consisted of 2.5 to 3 years of theoretical training. Until 1970, the first year of education (basic sciences) was taught in the faculty of philosophy at the University of Oulu, after which the students had to transfer to the University of Turku, to complete their studies for the degree of Bachelor of Medicine. During that period, the students were taught the basic aspects of medicine, including anatomy, physiology, and medical biochemistry. The first class of students returned to Oulu University Hospital at the beginning of 1963 to do the four-year clinical part of the training for the degree of Licentiate of Medicine. (Salo & Lackman 1998).

The teaching staff at first consisted mainly of the professors, as only two clinics had also other teachers. In the beginning, there were also limited facilities for learning. Intake was doubled to 120 in 1970. Medical education remained the same until 1973, when a national renovation of medical education began. Undergraduate medication education was established in its final form in the statute on the medical degree in 1975. Medical education was shortened from 7 to 6 years, entailing 4 years of clinical training and compulsory as well as optional internships in different clinics. Additionally, it became compulsory to write a thesis during the education. After graduation, the doctors had to work for one year before getting the license to practise after 1978 (Salo & Lackman 1998).

The medical students' union (Oulun lääketieteellinen kilta) was also founded in 1960, and officially registered in 1962. Since the beginning, the union has been active in

organizing various events (health checkups and health education) as well as recreational activities (culture, sports, parties, student exchange, etc.) for medical students. During the early years, part of the activities were organized in Turku, where most medical students studied before the year 1963. Oulu medical students were active since the beginning in the Association of Finnish Medical Students, which was founded in 1968 (Niemelä *et al.* 1985).

Curriculum. The general composition of the curriculum is traditional: two preclinical and four clinical years, rotations, clinical practices, 2-year training after graduation (Asetus 762/75). The first two years of studies consist of preclinical courses (chemistry, physics, anatomy, physiology, pharmacology, biochemistry and part of pathology), and during the following four years the students rotate between the different departments, learning the basics of the different specialties at the hospital (medicine, surgery, gynecology, ediatrics, psychiatry, primary health care, etc.). Clinical training consists of bedside instruction, which is part of the students' daily routine. Students also have to conduct patient examinations and learn to perform various clinical procedures. Six months of internship training in a hospital is required before graduation. Students are also required to write a thesis on a subject they are free to choose themselves. Additionally, primary health care rotations during the studies take altogether 2 months. After graduation, 2 years of working under supervision is required before full licensing as a doctor. (Naukkarinen & Lonkila 1999).

Faculty and students. The faculty consists of 119 professors, 20 senior assistants, 51 assistants and 4 lecturers. The faculty staff work full-time or part-time, and many of the positions are occupied by temporary teacher-physicians. Not all the teachers are specialists. Especially small group instruction and laboratory exercises in the preclinical phase are partly taught by more experienced students. Not all of the teaching staff have working experience outside the hospital, i.e. in health care centers. On the other hand, part of the instruction in general practice is given by local general practitioners with no close connections with the faculty. Most teachers have some pedagogical training, but it is not compulsory. The total number of medical students at the faculty in the spring 2000 was 486. The number of admissions in 2000 was 100. Medical students have representatives in all the department and clinic boards as well as in all the faculty boards.

Background of the medical education reform. In the early 1990's, medical education reforms compatible with the international trends of implementing problem-based learning (PBL) or early patient contacts and community-based education, were begun in all of the five medical faculties in Finland. Especially the medical faculty of Linköping in Sweden had set an example for the Finnish reforms (Bergdahl *et al.* 1990a, 1990b and 1994, Svedin & Koch 1990).

Helsinki began an experiment with a problem-based learning (PBL) parallel track for 14 students in 1995. As a result of this, a hybrid problem-based learning curriculum "Helsinki 2000" was introduced to all medical students in 1998 (Lonka 2001). Additionally, a program titled "Growing up to be a Physician" – aimed at promoting doctor-patient interaction, team work and leadership skills as well as emphasizing ethics and scientific thinking – was introduced. In this program, innovative learning methods

such as role play, simulated patients, learning portfolios, case-based instruction, activating lectures and seminars were applied (Mäntyranta 1996, Mäntyranta *et al.* 1996a, 1996b, Pitkälä *et al.* 2000a, 2000b).

In *Turku*, the main theme of the educational reform was a track of early patient contacts. Students were given a general practitioner as a tutor, and they visited health care centers for one afternoon every other week at the beginning of their studies. The aim of this experiment was to introduce the students to the work in health care centers and their role as a doctor in the future and to motivate them better for the theoretical studies (Vainiomäki 1995).

In *Tampere*, the whole curriculum was restructured as compatible with the principle of problem-based learning in 1994. The key elements of the reform were integration, problem-based learning, early patient contacts and promotion of clinical and communication skills as well as multiprofessional training (Hakkarainen 2000). The track of clinical skills, with an emphasis on communication skills, was designed to progress simultaneously with the studies and to provide the basic skills needed in the medical profession (Holmberg-Marttila 1998).

In *Kuopio*, the aim was to define the core curriculum of the undergraduate medical education. Integration between the preclinical and clinical studies was emphasized and students' self-directed learning was encouraged. Additionally, the students were offered an opportunity to choose between clinical, scientific or public health studies as an optional track. (Hyppölä 1997).

Planning and implementation of the curricular reform in Oulu. In Oulu, the planning of the reform began as a result of nationwide discussion on the need to improve medical education in the early 1990's. *A curricular committee* was appointed in January 1991 to be responsible for the planning of the reform. The curricular committee had 12 members, including 4 students. The aims of the curricular committee were: 1) to explore the need for restructuring the medical curriculum in the Oulu University, 2) to choose the direction of change, and 3) to evaluate the process of planning the reform. The committee was divided into preclinical and clinical workgroups, to review the curriculum for overlapping content and deficiencies in teaching.

During *the planning of the new curriculum*, the curricular committee chose to get acquainted with the reforms made in other universities by inviting national and international *expert lecturers* for seminars arranged by the faculty. Faculty members also visited other medical faculties, including Rochester, USA (communication, negotiation skills), McMasters, Canada, and Linköping, Sweden (problem-based learning and early patient contacts). The committee also arranged various *brainstorming sessions* for the faculty. The students had representatives in these seminars. In the first seminar, the contents of the medical education reform was discussed. Integration of preclinical and clinical instruction was considered important. The second brainstorming session was arranged concerning teaching in the general practice track in the preclinical phase. The third meeting centered on the reform of the clinical curriculum and the possibilities to use problem-based learning in medical education. At the point when the planning of the clinical phase began, new *committees for planning each clinical year* were appointed. Student members were active in these groups throughout the whole process.

In the self-assessment report of the University of Oulu in 1993, special attention was paid to the lack of integration and the fragmentary nature of the medical education, the scantness of patient-level clinical training, the excessive amount of lectures and the "hospital-centered" nature of the instruction (Davies *et al.* 1993, Liuhanen 1993). These aspects were taken into consideration in planning the reform. One of the aims of the reform was to develop the lecture-based education towards problem-based small group tutorials and self-directed learning. *Small group instruction* was increased by 50%, *integrated theme days* were arranged once a week on different themes, lectures were reduced. For example, during the 3rd year, the courses on surgery and internal medicine were integrated. *Ward service* was also introduced to the medical students. The *core curricula* in different specialties were identified. *Clinical teaching experiments using PBL* were tried out. Additionally, three *"learning tracks"* were designed in the preclinical phase: 1) human, society, health and illness (psychosocially oriented track, compulsory for all students), 2) molecular biology (biomedically oriented track, compulsory for all students), and 3) MD-Ph.D. track (research-oriented track, for selected students). Below, I will describe only the first of these tracks because it is the most important in view of this work. The medical students' reflection groups, which were initiated as part of this track, are described in chapter 2.3.5.

The human being, society, health and illness track was planned as a joint project of the Department of Public Health and General Medicine and the Department of Psychiatry (Larivaara *et al.* 1994a, 1994b, 1994c, 1997, 2000, Ylilehto 1997). It had been noted that, in Finland and elsewhere, a large percentage of the patients consulting general practitioners suffer from psychiatric, psychosomatic, or psychosocial problems (Larivaara 1987), and even experienced general practitioners appear to have problems in making the diagnosis and providing treatment in situations where the patient's symptoms can be classified as psychosomatic or psychiatric (Kiuttu 1994). The aim of the track was to introduce psychosocial matters into the undergraduate medical curriculum and to prepare medical students better for their work in primary care, since these aspects had apparently been previously neglected in the medical education.

The model for this track was influenced by the ideas of family systems medicine (later referred to as FMS), which is based on concepts of the systems theory (Bertalanffy 1971), family therapy, general practice and modern clinical medicine (Larivaara 1987, Larivaara *et al.* 1994a, 1997). FSM has also been influenced by the biopsychosocial model proposed by Engel (1977, 1978, 1980). In this approach, the family is understood as the most influential social context that has an impact on health and illness, and the importance of the quality of doctor-patient interaction is emphasized. Attention is given to the relationship between the individual and the environment, not only to the patient's somatic condition. The FSM approach has been used especially in educating doctors for primary health care (Kiuttu 1994, Larivaara 1982, 1987, Larivaara *et al.* 1994a, 1995, McDaniel *et al.* 1990, 1992).

The teaching of FSM in the preclinical phase of the undergraduate medical curriculum began in 1993 (Larivaara *et al.* 1996). The programme included an introduction to the basic conceptions of biopsychosocial health and illness and encouraged the students to take into account the relationships between the patient and the family. Special attention was given to the issues concerning the doctor-patient relationship. The track also

provided students with an opportunity for practising patient contacts during the visits to health care centers during the first year of studies already (Larivaara *et al.* 1994b, 1994c, 2000, Naukkarinen & Lonkila 1999, Ylilehto 1997). The reflection groups were started as an extracurricular activity for volunteer medical students at the end of 1993 (see in detail chapter 2.3.5.).

Summary. The medical faculty of Oulu was founded in 1960. The curriculum structure has remained mainly the same since the beginning. Even after the medical education reform in the early 1990's, the traditional structure of medical education was conserved, although integration of teaching and co-operation between different clinics and departments was increased. Small group instruction was increased, lectures were cut, clinical practice in wards was increased, and special topic days were introduced into the curriculum. Some new methods of teaching, including medical students' reflection groups, were introduced. The reform was important in that it increased the co-operation between teachers, but its effects on the content of the programme or the learning environment were insignificant.

2.3 Reflective learning in medical education

In this chapter, the concept of reflective learning as well as the different aspects of reflection as used in medical education at the present are introduced. Medical students' reflection groups in the University of Oulu, which formed the main source of data for this research, are described in the last part of this chapter.

2.3.1 Reflective learning

Definition. To reflect is to evaluate a situation based on one's own experience. Reflection, according to Tiuraniemi (1994), means an activity based on interaction, in which another person mirrors back, i.e. reflects, a person's (or group's) situation. In self-reflection, a person clarifies his or her own experiences by examining his/her own feelings, emotions or thoughts. Reflective professional practice is activity that entails reflection and critical evaluation of one's own actions and professional activity as a whole.

   Reflective learning. According to Dewey, reflective thinking and learning occur whenever adaptation to the environment, i.e. the routine way of doing things, does not function (Dewey 1989/1909, Miettinen 2000). On these occasions, a problem, uncertainty and crisis emerge and demand reflective thought and investigation of the conditions of the situation. As in experimental research in natural science, a hypothesis is formulated and then tested in practice. Dewey made a distinction between primary and secondary experiences. A primary experience is composed of material interaction with the physical and social environment. A secondary experience is reflective experience, which makes

the environment and its things into objects of reflection and knowledge. Failure and uncertainty of the primary experience give rise to reflective thought in learning. The key phases and concepts of Dewey's model of reflective thought and action are presented in Figure 1.

Idea,
concept

Solution of the problem
and control of the action

5. Testing the hypothesis
in action

1. Disturbance and uncertainty:
habit does not work

4. Reasoning

2. Intellectualization
and definition of the
problem

3. Studying the conditions of the
situation and formation of a
working hypothesis
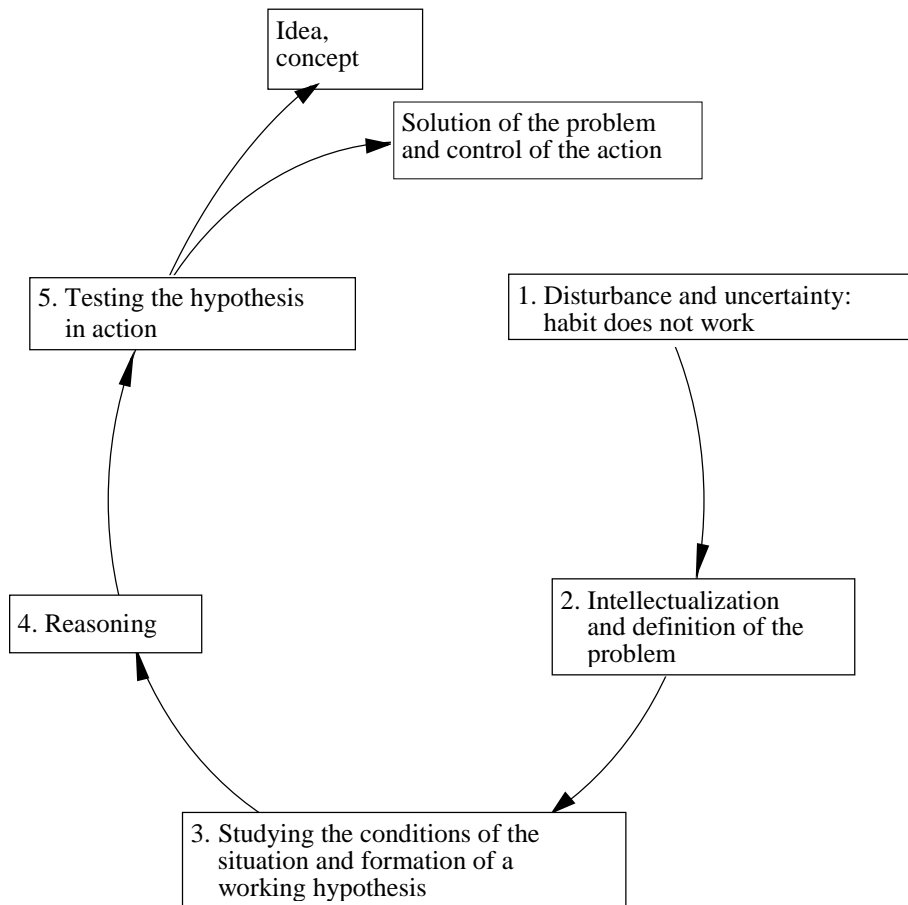
Fig. 1. Dewey's model of reflective learning (Miettinen 2000).

In the first phase, the dilemma and uncertainty emerge when a habit or routine way of doing things does not work. The second phase consists of the definition of the problem and the third phase of a study of the conditions of the situation, action, and the formulation of a hypothesis. The fourth phase involves reasoning: testing through experiments. The fifth stage consists of testing in action. If the working hypothesis works, control over the action is achieved and the hypothesis or concept can be transferred to another situation (Miettinen 2000). For Dewey, there is no reflective thought without a disturbance in the habits and ways of doing things or without hypotheses and their testing in practice, and the experience includes all artifacts and things involved in the interaction between humans and their environment.

Reflective professional practice. Schön (1983, 1992) criticized the emphasis on technical problem-solving skills in professional education, which he calls the model of technical rationality. Traditionally, the systematic knowledge base of a profession is thought to have four essential properties: specialized, firmly bounded, scientific, and standardized. The hierarchic differentiation of research and practice is also apparent in the curricula of professional schools (Schön 1992). One should first learn the theory, whereas applied sciences and skills are treated as an ambiguous, secondary kind of knowledge.

Schön (1983) claims that, by focusing on problem solving, we ignore the problem setting, the process by which we define the decisions to be made, the goals to be achieved, and the means which may be chosen. Problems do not present themselves to the practitioners as given, but they have to be constructed in puzzling, uncertain situations. In order to convert a problematic situation into a problem, a practitioner has to make sense of the situation by *naming* the things to be attended and then *framing* the context. When the goals are clear, the decision to act can present itself as an instrumental problem, but when the goals are confused and conflicting, there is no problem yet to be solved. A conflict of goals cannot be solved by the use of techniques derived from applied research, and this presents as a gap between the professional knowledge and the demands of real-world practice. Professional practice has as much to do with finding the problem as with solving the problem found, and problem-setting should thus also be regarded as professional activity. Effective use of specialized knowledge depends on prior restructuring of situations that are complex and uncertain.

When trying to deal with an interesting phenomenon, we often think about what we are doing. However, our knowing in practice is often implicit in our action, and it may be hard to tell what it actually is that we know. Schön (1983) defines the concept of *reflection-in-action* as a process where an actor is thinking about something he is doing at the time, while *reflection-on-action* takes place afterwards. Reflection-in-action is central to the art through which practitioners sometimes cope with the troublesome "divergent" situations of practice. When practice becomes more repetitive and routine, the practitioner may miss important opportunities to think about what he is doing, and this might lead to boredom or a feeling of burnout as well as rigidity of practice. Reflection may serve as a corrective to overlearning. While reflecting, one can construct a new description of the event and test it on-the-spot, or one may construct a new way of setting the problem or framing the experiment. When someone reflects in action, he becomes a researcher in the practical context. He does not depend on established theory, but

constructs a new one of the unique case, by defining the means and ends interactively as he frames the problematic situation. Implementation is built into his inquiry. However, because professionalism is still mainly identified with technical expertise, reflection in action is not generally accepted as a legitimate form of professional knowing. Many practitioners view themselves as technical experts. For them, uncertainty is a threat and its admission a sign of weakness.

Reflective learning and education. Reflective learning has been widely used in adult education (Malinen 2000). The model of experiential learning (Kolb 1984) introduces an information processing view of learning, which emphasizes that professionals must be allowed to create their own personal knowledge through the opportunities afforded by education. The cycle of learning starting from an experience, which the learner reflects on, derives some abstract principles and applies them in a new situation. Mezirow (1990) introduced critical reflection, i.e. the process of evaluating one's pre-assumptions, as the basis for transformative learning. Critical reflectivity means that we question the commonly accepted definition of a certain problem in order to find new ways to solve it. Critical reflection requires one to stop to think, and thus cannot be part of activity. By transformative learning, Mezirow (1990) means a learning process during which an individual's meaning perspectives are transformed so as to allow him/her to create a more comprehensive, distinguished and logical conception of his/her experience.

Examples of reflective learning in medical education. Branch *et al.* (1995) described a course designed to support the professional development of third-year medical students during clinical clerkships. The small group instruction addressed the ethical, social and communicative issues in medicine in addition to knowledge and skills. During this course, six to ten students met with three members of the faculty for two hours weekly at the medical school. The principal teaching method was case-based discussion, based mainly on the students' own experiences. Occasionally, patient interviews, group projects, large-group sessions with panels or lecturers, or field excursions, such as visiting a nursing home, were used. The topics discussed in the groups included: HIV needle exposures, ethical dilemmas encountered on the wards, critical incident reports, health care financing, risk management and malpractice, chronic illness, death and dying, dealing with difficult patient-physician interactions, issues involving diversity, choosing a specialty, and relationships with other professionals.

Burack *et al.* (1991) developed an integrated approach, "a challenging case conference", for resident education and support in the University of Rochester. The aims were to reduce the frustration experienced by the residents and to promote interactive problem-solving skills. The challenging case conference is a weekly one-hour group discussion that is conducted as a regular component of the teaching program. The ward team was asked, the day before the meeting, to identify a situation relating to their patient care responsibilities that at least one of them had experienced as troubling. In the conference, the focus was on the broader context of the professional and personal experience, the identification of shared emotional responses, and the consideration of alternative problem-solving approaches. Of the 130 conferences during 1984-1989, three topic categories were found: 1) those focusing on the patients themselves, 2) those

focusing on the physician's response to an uncomfortable situation, and 3) those involving interpersonal conflict.

Summary. Reflection is understood as an activity occurring in interaction, during which someone mirrors back the situation of another person. Self-reflection is directed to one's own thoughts and feelings in order to understand the experiences encountered. Reflective learning means evaluation of the experience or thing to be learned in the light of prior experience, which leads to either adaptation or rejection of the new knowledge as such or transformation of one's own meaning system to accommodate the new knowledge. Reflective professional practice has not so far been widely encouraged in medical education, although there have been some attempts to use reflective learning in teaching.

2.3.2 Cognitive reflection in medical education

In constructive learning theories (Rauste-von Wright & von Wright 1994, Lonka 1997), learning and memory are understood as dynamic processes, which are influenced by what we already know and how we learn. Effective information processing depends on cognitive reflection, i.e. elaboration of the new things to be learned against one's prior knowledge. Forgetting is also an active process – memorizing knowledge is less effective if you do not know the kinds of situations in which you are likely to need the information. We learn theory best through practical applications, and students should therefore get some relevant practical experience or a concrete example before the theory is presented. Learning is also understood as a social interactive process; argumenting for one's own conceptions and solutions to others creates opportunities to evaluate one's presumptions and to learn from the others. This chapter deals with the most widely adopted innovation in the medical education methodology, which is based on cognitive reflection and group work, namely problem-based learning.

Historical and epistemological background. Problem-based learning was originally developed at the faculty of health sciences of McMaster University in the mid-1960's (Neufeld & Barrows 1974, Schmidt 1993). The development of the PBL method was strongly influenced by cognitive psychology of learning (Norman & Schmidt 1992), according to which knowledge cannot be "transferred" but the learner has to actively master it. According to Schmidt (1993), the basic principles in cognitive psychology of learning are: 1) prior knowledge is the most important determinant of the nature and amount of new information that can be processed, 2) prior knowledge has to be activated by cues in the context in which the information is being studied, 3) knowledge is structured in semantic networks, which are a reflection of the person's experiences, views and ideas, 4) elaboration enhances storage and retrieval of information, 5) contextual cues affect memory, 6) motivation to learn prolongs the time spent studying and improves achievement.

Definitions. The problem-based learning method (referred to as PBL below) is widely used in medical education all around the world, but the conceptions and definitions of what PBL is and how it is implemented in the curriculum vary a lot. The component features of the original PBL method are self-directed learning, problem-based learning and small-group tutorial learning (Neufeld & Barrows 1974). Vernon and Blake (1993) defined the PBL as a method of learning that includes 1) the study of *clinical cases* (either real or hypothetical), 2) *small discussion groups*, 3) collaborative *independent study*, 4) *hypothetico-deductive reasoning*, and 5) a style of faculty direction that concentrates on *group process*. Barrows (1986) enumerated the following educational objectives of PBL: 1) *structure knowledge* for use in clinical contexts, 2) develop effective *clinical reasoning*, 3) develop effective *self-directed learning* skills, and 4) increase the *internal motivation* for learning. He presented the modifications of the PBL method in use: lecture-based cases, case-based lectures, case method, modified case-based education and problem-based learning.

Neufeld and the colleagues (1989) articulated the key features of PBL as being "the analysis of health care problems as the main method of acquiring and applying knowledge; the development of independent lifelong learning skills by students; and the use of small tutorial groups, with five or six students and a faculty tutor in each group, as the central educational event". Walton and Matthews (1989) defined PBL as "curricular organization around problems, not disciplines; integration of basic and clinical sciences; facilitating conditions: small groups, student-centeredness, active learning, independent study, simulation, and relevant problems". Albanese and Mitchell (1993) used the following definition: "problem-based learning is an instructional method characterized by the use of patient problems as a context for student to learn problem-solving skills and acquire knowledge about the basic and clinical sciences".

The most important feature, which distinguishes PBL from other problem-centered methods (such as the case method) is that the problem is presented before the concepts (Barrows 1986, Albanese & Mitchell 1993). In PBL, the students are presented real-life problems before any preparation or lectures. The students thereafter identify the pertinent areas of learning in the tutorial groups, and these learning goals are then used as a guide to individualized study (Barrows & Tamblyn 1980).

Small group process in problem-based learning. Teaching in PBL occurs mainly in tutorial groups of five to eight students. The learning process involves 1) definition of the concepts, 2) discussion based on prior knowledge, 3) definition of the problem, 4) determination of the learning goals, 5) self-directed learning, 6) problem solving, and 7) evaluation of the knowledge learned.

Integration of knowledge from different specialties (anatomy, physiology) as well as from different clinical fields is achieved by using "problems", i.e. case examples with descriptions of patients' history. The problems are first discussed in the light of the prior knowledge the students have on the subject. The questions that cannot be solved with the shared knowledge in the group are then formulated into learning goals. The students are responsible for searching the requisite knowledge from various sources of information (textbooks, articles, interviews, etc). After the self-directed learning period, the students discuss the topic again to reach conclusions (see Table 6).

Table 6. Steps involved in problem-based learning (modified from Schmidt 1983, and Walton & Matthews 1989).

Steps of PBL	Schmidt (1983)	Walton and Matthews (1989)
1	Clarify the terms and concepts	Address realistic problems
2	Define the problem	Apply prior knowledge
3	Analyze the problem	Rehearse scientific approach
4	Draw a systematic inventory of explanations	Identify learning gaps
5	Formulate the learning objectives	Recognize learning as infinite
6	Collect additional information outside the group	Discuss the value of information sources
7	Synthesize and test the newly acquired information	Apply knowledge to new problems

Roles of the students and the tutor. In problem-based learning, the students learn to determine what they need to know and to place an emphasis on active acquisition of knowledge. The tutor's role is facilitative: to provide the students with necessary experience and guidance (Barrows & Tamblyn 1980). It has been found that students learn more in tutorial sessions where the tutor is an expert on the content under discussion (Albanese & Mitchell 1993). However, not even expert tutors can compensate for a lack of curricular structure or the students' lack of prior knowledge (Dolmans *et al.* 1996). By observing tutorial groups, Schmidt and Moust (1995) found the determinants of an effective tutor to be subject-matter expertise, commitment to the students' learning and an ability to express oneself in the language used by the students.

Hughes Caplow *et al.* (1997) studied medical students perceptions concerning tutors and defined three categories: 1) facilitative expertise, 2) knowledge expertise, and 3) clinical reasoning expertise. Similar findings indicating that students expected the tutor to be a skilled group facilitator who would guide them in their learning, while helping them maintain a positive group climate, were made by Kaufman and Holmes (1996). Dolmans *et al.* (1998) found that interaction and motivation directly influenced tutorial groups' productivity, whereas elaboration and cohesion had only indirect influences. They recommended that the tutors should be well trained in stimulating group interaction and in motivating students by encouraging the tutorial group's team spirit.

Outcomes of PBL. The research reviews comparing traditional and PBL training systems (Norman & Schmidt 1992, Albanese & Mitchell 1993, Vernon & Blake 1993, Thomas 1997) propose that there are no differences in the factual knowledge of students. Norman and Schmidt (1992) found no evidence to show that PBL curricula result in any improvement in general or in content-free problem-solving skills (see also Norman, 1988). PBL may initially even reduce the levels of learning, but it may foster increased retention of knowledge later on. PBL may enhance the transfer of knowledge to new problems and the integration of the basic science concepts into clinical problems. PBL enhances intrinsic interest in the subject matter and appears to enhance self-directed learning skills.

Vernon and Blake (1993) found that the clinical performances of PBL students were superior compared to those educated in a traditional curriculum. PBL was significantly superior with respect to the students' program evaluations, and the faculty also reported they enjoyed teaching in PBL. Albanese and Mitchell (1993) found that PBL students performed worse in basic sciences (possible gaps in cognitive knowledge). There was no difference in clinical examinations, but PBL students did better in clinical performance situations and spent more time with the patients when working. Thomas (1997) found that PBL student pursued fewer questions than those identified by the staff who planned the problem. They also consulted more journal articles and books and made more computer searches.

Summary. Problem-based learning is an educational method based on students' active learning in small tutorial groups. Elaboration based on the prior knowledge of a real-life problem, self-directed learning based on negotiated learning goals, and evaluation of the knowledge acquired are emphasized in this method. In various studies concerning the outcomes of PBL, students have been noted to perceive problem-based learning as more motivating than traditional instruction. The method does not necessarily increase the acquisition of factual knowledge, but it appears to enhance self-directed learning skills. Problem-based learning requires team-working skills, and group interaction influences learning directly. The ability to share, reflect on and negotiate different conceptions of the issues at hand is likely to deepen the learning process.

2.3.3 Ethical reflection

Ethical reflection, i.e. the evaluation of one's own values, which are the basis of clinical decision-making, is an essential part of professionalization. This review mainly concentrates on research dealing with the practical ethical dilemmas medical students encounter during their studies.

Background. Throughout decades, there has been a debate over whether ethics can and should be taught in medical school and whether the teaching of ethics makes any difference. At the moment, however, some form of medical ethics teaching has become a norm in most American medical schools (Pellegrino 1989, Hundert *et al.* 1996). Medical ethics has been taught in various forms: compulsory or voluntary courses, lectures or small group discussions, abstract case vignettes or real ethical problems that arise in practical situations, journal keeping and reflection upon one's experiences. Pellegrino (1976) criticized the predominant emphasis of medical ethics teaching on "biomedical ethics" as opposed to "professional medical ethics" or "social ethics". In his opinion (Pellegrino 1989), ethics is a practical discipline that deals with concrete judgements in situations where some action must be taken despite uncertainty. The trend in research concerning ethics teaching and moral development is shifting from the investigation of classical moral dilemmas towards examining behavior in actual practice (DeCamp foundation 1985, Hundert *et al.* 1996). Studies with case vignettes are giving way to

critical event interviews, narrative writing protocols and audio- or videotaping of practical situations.

Curricular goals of medical ethics teaching. Medical education does not take place within a value-neutral environment. Hafferty and Franks (1994) noted that students' values are not changed much by a course of ethics, since they internalize the clinically relevant values through the hidden curriculum even before entering clinical training. In their opinion, ethics is inherent in clinical decision-making and thus critical to the development of a physician. Medical education is not only about the acquisition of knowledge and skills but also about the acquisition of a physician's identity and character. If students are surrounded by a medical culture that discourages certain feelings, introspection or personal reflection, these skills may already stop developing in the early stages of the training process. They emphasize the role of ethics as part of professional identity and suggest the need to establish an overall value climate that will integrate ethical principles into the students' professional identity.

Bickel (1991) criticized medical educators for having paid insufficient attention to students' development of professional standards. The medical curricula tend to provide little opportunity for questioning or reflection, and only a few faculty members devote time to ethics teaching. The immediate ethical dilemmas that students face as students and their ways to deal with them (how they adapt to the stresses of their environment and how they relate to their peers and teachers) are likely indicators of the codes of professional ethics they will assume as physicians. During the medical education, students experience great pressures to succeed and master material in order to prevent life-threatening errors, and their position in the power structure also leaves them occasionally vulnerable to oppressive behavior. Kerridge and Lowe (1997) paid attention to the fact that medical students are often placed in situations where real ethical dilemmas are ignored or denied by those in higher positions. Problems often arise because of the conflicting demands of being both a learner and a carer. The lack of recognition of these dilemmas may lead to erosion of ethical standards or compassion and to reacting with a policy of silence. O'Toole (1995) suggested that medical students could learn to embrace the human perspective of the patient relationship by reflecting on stories of ethical dilemmas. Bickel (1991) suggested that the instruction of medical ethics should include cases featuring dilemmas commonly encountered by medical student rather than focusing exclusively on patient care issues. Some suggestions concerning the basic curricular goal of ethics instruction in medical education are presented in Table 7. These suggestions include the recommendation that medical students should be educated to identify the moral aspects of medical practice and to reflect on the values they base their decisions on.

Original research reports. There is a substantial amount of literature concerning the ethical dilemmas medical students encounter during medical education. A summary of the reviewed literature is presented in Table 8. The results of these studies are presented in the text, and the issues of special importance for this study are summed up at the end of this chapter.

Table 7. Recommendations for the basic curricular goals of ethics instruction in medical education.

DeCamp foundation (1985)	Pellegrino (1989)	The American College of Physicians (1992)
1) tability to identify the *moral aspects of medical practice*	1) teaching *skills of ethical analysis*	1) *the physician and the patient* (confidentiality, medical records, consent, disclosure, medical risks, unorthodox treatments, care of physician's family…)
2) ability to *obtain a valid consent* or a valid refusal of treatment	2) raising *sensitivity to ethical issues* in everyday clinical practice	2) *decisions near the end of life* (do-not-resuscitate orders, terminally ill patients, determination of death, intravenous fluids and artificial feeding, euthanasia…)
3) knowledge of how to proceed if *a patient is incompetent* to give consent or to refuse treatment	3) enhancing critical *reflection on one's own personal values* and obligations as a physician	3) *the physician's relationship to other physicians* (teaching, consultation, the impaired physician, peer review…)
4) knowledge of *how to proceed if a patient refuses treatment*	4) identifying the substantive *ethical assumptions underlying clinical decisions*	4) *the physician and society* (obligations of physicians to society, resource allocation, relationship of the physician to other health professionals…)
5) ability to decide when it is morally justified to *withhold information* from the patient		5) *research* (clinical investigations, innovative therapies, publication…)
6) ability to decide when it is *morally justified to breach confidentiality*		
7) knowledge of the moral aspects of the care of patients with a poor prognosis, including patients who are *terminally ill*		

Table 8. Summary of the reviewed literature on ethics in medical education.

Author(s) (year)	Data	Methods	Aims
Pellegrino *et al.* (1985)	A stratified random sample of graduated physicians (n=1023)	Survey	1) To evaluate physicians' perceptions of the relative influence of medical education, personal values and medical practice on their approaches to ethical issues 2) To evaluate the medical ethics programs 3) To measure the relative frequency of the occurrence of specific ethical issues in medical practice 4) To elicit suggestions on how ethics instruction can be improved
Self *et al.* (1989)	1st year medical students (n=119), and 1st year veterinary medicine students (n=36)	Natural experiment	To examine the effect of teaching medical ethics on medical students moral reasoning
Self *et al.* (1993)	1st and 4th year medical students (n=20)	Moral Judgement Interview	To investigate the moral development of medical students throughout the medical education
Christakis and Feudtner (1993)	3rd year medical students (n=152) medical students taking part in a required minicourse of ethics during introductory internal medicine clerkship.	Discussion and written case reports describing and analyzing a personally encountered ethical dilemma	To find out what kind of critical ethical issues medical student confront daily
Feudtner *et al.* (1994)	3rd and 4th year medical students (n=667)	Survey	To find out what kind of ethical dilemmas medical students encounter while working in a hospital environment

Table 8.Continued.

Author(s) (year)	Data	Methods	Aims
Shapiro and Miller (1994)	2nd year students (n=92)	Written paper on a clinical ethical dilemma of one's own choice	To find out how medical students think about ethical issues
Smith et al. (1994)	4th year medical students (n=511)	1) An encounter with a standardized patient 2) Essays of moral conflicts	To develop an assessment technique to measure the abilities of medical students to deal with moral and ethical issues
Hundert et al. (1996)	Medical students and residents	Tape-recording informal conversations in a surgical setting	To find out the informal ways of producing "practical ethics of conduct" in a teaching hospital (Informal ethics curriculum)
Homenko et al. (1997)	Medical students and their preceptors	Critical review discussions	To determine the ethical perspectives of medical students during primary care rotation
Satterwhite III et al. (1998)	1st to 4th year medical students (n= 302)	A survey, multiple-choice and one open-ended question about a personally encountered clinical ethical dilemma	To assess medical students' perceptions of the ethical environment across four years of medical school
Hicks et al. (2001)	Clinical students (n=108)	Survey and focus groups	To find out dilemmas medical students face during medical education.

Pellegrino *et al.* (1985) found the formal ethics curricula to have the following inadequacies: placement too early in the curriculum (45%), insufficient time allotment (43%), too much theory (26%), emphasis on wrong issues (19%), and not analytical enough (8%). However, the training had been successful in enabling the respondents to identify value conflicts (82%), in increasing their sensitivities to patients' needs (79%), in helping them understand their own values better (76%), and in dealing more openly with moral dilemmas with patients and fellow professionals (73%). The most powerful factors influencing their approaches to ethical issues were personal values and beliefs (99%), but general clinical experience, role models and peers as well as family were also mentioned by 90% of the respondents. The most frequently encountered ethical problems in practice (mentioned by more than 50% of the respondents) included compassion, veracity, maintaining competence, participation of patients in decision-making, obtaining informed consent, obtaining consultation, relating to other professionals, confidentiality, and pain control. Concerning suggestions on how to improve the ethics teaching, the following topics, quoted in the order of preference, were mentioned: emphasis on clinical decisions in specific cases and problems, ethical relationships with patients and other professionals, legal and economical issues, and help in clarifying one's own ethical values.

Self *et al.* (1989) examined the moral development of medical students. According to the research design, part of the medical student had ethics teaching in a lecture format, while another part were taught in small groups with the case-study method, and the control group of veterinary students did not receive any ethics instructions. The pre- and post-tests were conducted with the Sociomoral Reflection Measure (SRM), which is a paper and pencil version of Kohlberg's Moral Judgement Interview (Kohlberg 1984). Both experimental groups improved significantly relative to the control group. The data suggest a tendency for the small-group method to promote the development of moral reasoning compared to the lecture-based format, even though this finding was not statistically significant. The authors suggested that the teaching of medical ethics could reduce the increase in cynicism and the loss of idealism in medical students.

In another study, Self *et al.* (1993) conducted semistructured, oral, tape-recorded interviews of medical students. They were asked to resolve a series of three hypothetical moral dilemmas. He noted that medical education seems to inhibit the normal growth in moral reasoning, as the increase in the results remained insignificant. Medical education seems to have a homogenizing effect, since there was a significant reduction in the variance of moral reasoning and no significant gender differences.

According to Christakis and Feudtner (1993), the recurrent problematic themes during medical education appeared to be 1) performing procedures, 2) being a "team player", 3) challenging the medical routine, 4) knowing the patient as a person, and 5) witnessing unethical behavior. Many of these dilemmas were found to be an interplay of three often-conflicting aims: to learn medicine, to work as a member of the medical team, and to care for the patients.

Feudtner *et al.* (1994) studied medical students' experiences of unethical behavior in a medical education environment. Of the respondents, 58% reported having done something that they thought was unethical and 52% reported having misled a patient. Of the respondents, 98% had heard physicians refer derogatorily to patients, 61% had witnessed what they believed to be unethical behavior by other medical team members,

and 54% felt like accomplices. Many students reported being dissatisfied with their actions and their ethical development: 67% had felt bad or guilty about something they had done as clinical clerks, 62% thought at least some ethical principles had been eroded or lost. The researchers additionally found that the students who had witnessed an episode of unethical behavior had more commonly acted improperly themselves for fear of poor evaluation or to fit in with the team. The authors concluded that the ethical dilemmas that medical students encounter during medical studies are common and often detrimental, thus warranting the attention of the educators and other hospital staff.

Shapiro and Miller (1994) found that medical students did not have problems in identifying ethical dilemmas, and the majority of students were also able to successfully resolve their ethical dilemmas. However, there were gender-related differences. Female students tended to be interested in issues involving broad social perspectives, to emphasize the rights of the patients and families and to incorporate personal responses as well as abstract theories. Males tended to be interested in issues involving personal control, authority, and responsibility. They also advocated more commonly cost containment and relied on abstract logical arguments.

Smith *et al.* (1994) found the performances in the interactive and written portions to be hardly related at all. The authors developed a model for categorizing students' performances in an assessment measuring competence in moral reasoning and ethical judgement (see table 9), and suggested that the faculty should pay more attention to the students who seem to have problems.

Table 9. A model for categorizing students' performance (Smith et al. 1994).

	High analytical skills	Low analytical skills
High interactive skills	Empathetic and ethical "The Doctor" 76.3 % (n=367)	Kind-hearted and uncritical "The Nice Guy" 12.5 % (n=60)
Low interactive skills	Impersonal but moral "The Puritan" 8.7 % (n=42)	Confused and confounded "The Problem" 2.5 % (n=12)

Hundert and his colleagues (1996) studied the informal ethics curriculum in a teaching hospital. They were especially interested in conversations about issues bearing on professional development. Their conclusions were that 1) "showing real interest" is a cardinal rule of the unwritten code of clinical medicine, 2) the residents' ways of judging the knowledge level of the clerk are tied to the routine demands of practice and to accomplishing their day-to-day work, 3) it is one thing not to know what you really need to know, but worse still is not to care, and 4) expecting to be given answers rather than trying to find out by oneself is a problem. The authors came to the conclusion that there are important lessons to be learned about what is right, fair, skilful, and good from observing the informal curriculum of medical education. The informal ethics curriculum offers a window on how the culture of medicine creates a moral world for its participants that is binding and consequential.

According to Homenko and her colleagues (1997), the major ethical dilemmas during primary care rotation involve: 1) *decision-making* (in right-to-die, living wills, and no-code situations) (40%), 2) *professional standards* (concerning how to handle incompetent peers) (16%), 3) *locus of care* (home vs. hospital care) (12%), 4) *community responsibility* (public awareness and education) (10%), 5) *confidentiality* (in cases of sexually transmitted disease or drug abuse) (10%), and 6) *legal issues* (patients' competence to make decisions) (6%). The authors concluded that ethical issues are also important to medical students outside hospitals. They suggest that ethical issues should be emphasized in a narrative and discussion format during medical education.

Satterwhite III and colleagues (1998) reported a high proportion of students who had heard derogatory comments about patients. Of the 1st year students, 66% reported having heard such comments, though not in the patient's presence (compared to 98% of the 4th year students), while 15% had heard them in the patient's presence (compared to 60% of the 4th year students). Over half of the respondents (58%) reported having observed unethical conduct by a resident or an attending physician once or more often during medical school. Of the respondents, 16% said that they had been encouraged to do or say something unethical, 13% had resorted to unethical behaviors out of fear of receiving poor evaluations if they did not, and 12% had acted unethically out of pressure "to fit in with the team". The authors suggest that ethics instruction should begin in the first year of studies and focus on the dilemmas that students actually face during each year of medical education.

Hicks *et al.* (2001) found three types of dilemmas encountered during medical education: conflict between medical education and patient care, responsibility exceeding student's capabilities and involvement in care perceived to be substandard. Their suggestion was that medical educators should learn to recognize these dilemmas in order to prevent the effect of a hidden curriculum hindering students' ethical growth.

Summary. Despite the debate on the role of medical ethics, some form of ethics teaching has become a norm in medical education. The trend in research concerning ethics teaching and moral development is moving from the investigation of classical moral dilemmas towards examining behavior in actual practice. The conflicting aims of trying to learn medicine, to work as a member of the medical team, and to care for the patients often lead to ethical dilemmas in practice. Suggestions for the improvement of medical ethics teaching include paying attention to the overall value climate at the faculty and to the students who have problems, making all faculty responsible for teaching ethics as well as defining the informal ethics curriculum. A comprehensive, integrated medical ethics curriculum with seminars, discussion groups and ethical rounds based on real-life cases is recommended by the researchers. A case-based discussion, in which the students could reflect on their own experiences and stories of ethical dilemmas encountered in practice, should become a regular component of ethics teaching. Topics concerning clinical decision-making in specific cases, ethical relationship with patients and other professionals, and help in clarifying a person's own ethical values should be included in the curriculum.

2.3.4 Professional reflection

Below, the literature concerning Balint group work, which is the most well-known method of professional reflection for physicians, is reviewed.

History and definition of Balint groups. The traditional Balint group method was developed by the psychiatrist and psychoanalyst Michael Balint (1896-1970). He was born in Hungary and moved to England at the beginning of the Second World War. He began his work with general practitioners in Tavistock Clinic in London in 1950 and reported the first findings in his book "The Doctor, His Patient and the Illness" (Balint 1964).

Traditional Balint groups are seminars of five to ten general practitioners who meet with a psychoanalyst-psychiatrist or other comparably trained seminar leader to study the psychological aspects of their work (Balint 1964, Seppälä 1977, Bourne & Lewis 1978, Finnish Balint Association 1991, Rekola 1979, 1994, Luban-Plozza 1996, Ottosson 1999). In the groups, the physicians are given a chance to reflect upon the doctor-patient relationship. The sessions begin with a description of a somehow meaningful or troublesome patient contact and the discussion then concentrates on the relationship between the patient and the doctor (Balint 1964). The aims are to improve general practitioners' skills in doctor-patient relationships by means of reflecting on patient cases that cause concern or puzzlement and to find a way to develop the doctor's work so as to involve psychotherapeutic aspects in the limited time available for consultation. The seminars meet for one and a half hours each week for a number of years. Balint groups are used to help general practitioners work, rather than turn to provide psychotherapy.

Balint groups in practice. In Finland, the Balint group activity has been mainly of interest for general practitioners and psychiatrists (Rekola 1979, 1994, Väisänen *et al.* 1980, Larivaara 1982). Balint groups are most widely considered part of continuing medical education, especially for general practitioners, but there have also been some experiments with groups of hospital doctors and even medical students (Finnish Balint Association 1991, Luban-Plozza 1995, 1996).

Over the years, various modifications of the traditional Balint method have been developed (Brock & Stock 1990, Norell 1991). What is common to all of these groups is that they aim to explore problematic interactions between the doctor and the patient and to promote the physician's professional development and personal growth. One example of the variations of the Balint method in continuing medical education is the family systems Balint group (Botelho *et al.* 1990). In family Balint groups, the patient is addressed in the context of the family and the doctor-patient relationship in the context of the medical system. In the sessions, the physicians first report the benefits of their past presentations, after which a new case by a volunteer physician, including a genogram or systems sociogram of the patients family, on a flipchart is presented. After the presentation, discussion on the case begins. After each session, the co-facilitators (a family physician and a family therapist) debrief the participants. In family systems Balint groups, the discussion is not restricted to the doctor-patient relationship, but may focus on any relationship affecting the doctor and the patient.

Balint groups in undergraduate medical education. The experiments conducted during undergraduate medical education have been called junior or student Balint groups. Levenstein (1980,1982) has reported of junior Balint group activity in Cape Town. The group was started based on a request by its six members. The group was led by a general practitioner and met weekly. The emphasis in this group was on the interaction between the patient and the medical student, rather than on any personal problems of the students. The students took turns to speak to patients in the wards where they were working in order to get to know the patient and to report to the group. The students reported after five months of progress that the experience was valuable in helping them relate to patients, as they felt that kind of training was lacking in their official curriculum. Especially, the experiment enhanced their skills of listening (understanding both the overt and latent messages as well as using silence to encourage patients to express their feelings) and improved their self-knowledge (awareness of their own defenses that influence the interaction and tolerance towards their own feelings and reactions in general). In an assessment carried out a year later, the quality of the presentations and discussion appeared to have markedly improved. All of the students expressed keen regrets about the neglect of the emotional aspects of patient care in the teaching hospital. The neglect was seen as defense against the anxiety evoked by the powerful emotions involved in taking care of seriously ill patients, which resulted in the use of distancing as a defense.

Roine (1986) and Tupola (1990) reported about a project called "General Iathrology" course, which has been offered to students since 1980 at the University of Helsinki in Finland. The course is a voluntary 2-year program including junior Balint groups, seminars and lectures on the doctor-patient relationship, psychosomatics, and a wide range of philosophical, psychological and sociological approaches to medicine, health care and, of course, being a doctor. In the Balint groups, students have an opportunity to discuss their experiences and to integrate their personal developmental challenges and problems into their theoretical and practical medical studies. In these discussions, interpersonal relations (doctors-patients, doctors-students, students-patients, students-nurses, students-students) have been in a major role.

Student Balint groups have also been available for Swedish medical students (Hammar *et al.* 1995, Bengtsson *et al.* 1997). The groups were started as a response to a student initiative and were voluntary to clinical medical students. The groups met for one and a half hours every other week. The group made a commitment to meet regularly and the goal of the group was defined as "helping to become doctors". The groups were neither therapy groups, nor literature groups, and they did not aim to compensate for clinical instruction as such. The whole group were from the same stage of the medical programme, and most participants were female. Students were allowed to share experiences and, in the process, also to modify, revise or clarify their own thoughts. They found it good to have a chance to reflect on such questions as: "How should a good doctor behave in a certain situation?" and "What is the limit between the patient's own responsibility for him/herself and the doctor's responsibility of his/her patient?" (Bengtsson *et al.* 1997).

Brazeau *et al.* (1998) reported of an educational experiment of using Balint groups during family medicine clerkship rotation among third-year medical students in the USA. Balint groups were offered to the students as an elective course, for which they would get

extra credit, and all but one student in the class attended (n=161). The students were divided into groups of 10. Each group met for a one-hour session four times during the rotation. There were two leaders in the groups: one was a family physician with experience of the Balint group method and the other was trained both as a family physician and a psychiatrist with experience of individual and group psychotherapy. The groups worked with the same basic principles as traditional Balint groups. Students were encouraged to present situations from their own experience, which had been difficult or especially gratifying. They could also present doctor-patient situations which they had witnessed and to which they had had significant emotional reactions. The leaders did not make specific recommendations as to how to handle the situations or to resolve the ethical dilemmas, but encouraged students to make their own conclusions. Challenging vignettes of patients with somatization disorder were kept in reserve by the leader to stimulate the discussion if needed. The following themes were discussed in the groups: 1) feeling angry at or abused by non-compliant or irresponsible patients, 2) feeling irritated at patients who somatize or have "minor" complaints, 3) dealing with death and giving a patient bad news, 4) liking or disliking a patient because of the student's own background, 5) stress in students and physicians and its effect on the doctor-patient relationship, 6) issues related to being a student, 7) verbal abuse or sexual harassment by preceptors, and 8) witnessing inappropriate doctor-patient interactions without having the power to intervene. The evaluations of the experiment by both the students and the teachers were positive.

Summary. The traditional Balint group method is based on reflection on doctor-patient relationships in a small group of physicians. The group aims to foster professional development and personal growth by exploring problematic interactions between a doctor and a patient. Modifications of this method are in use worldwide at all stages – from undergraduate to continuing - medical education. During undergraduate medical education, Balint groups have been used to provide medical students a possibility to elaborate on psychosocial issues in patient care. In the next chapter, the modification used at the Oulu Medical Faculty is described in more detail.

2.3.5 Reflection groups in the University of Oulu

History of reflection groups. Medical students' reflection groups were formed during the process of curriculum reform at the medical faculty in Oulu (Larivaara *et al.* 1994b, 1997). The initiative for this activity came from the students. The aim was to provide medical students with an opportunity to reflect on the various experiences encountered during medical education. The Department of Psychiatry introduced the concept of Balint groups and suggested that student groups should be formed. The activity was advertised by students on notice boards and in the students' publications. Additionally, the faculty informed the students about the groups during the lectures of the psychiatry and general medicine courses. Special information session about the students' groups were organized randomly. The groups were extracurricular and thus meant for voluntary students.

Definition of reflection groups. The reflection groups consisted of 8-10 medical students from either the same class or from various stages of studies. The supervisors of the groups were either psychiatrists or general practitioners with experience of leading Balint groups of medical professionals. The supervisor's role in the group was to facilitate discussion. The idea was to allow the participants to introduce for discussion any experiences encountered during their medical education they found somehow meaningful. Any of the participants was allowed to begin the conversation with any issue (s)he found important. The discussions in the group were treated as equally confidential as the issues emerging in doctor-patient relationships. It was decided that the groups would be closed, and no new members would be recruited without consulting the group members. The groups met once to twice a month for one and a half hours for a certain period of time.

The medical students' discussion groups were influenced by the traditional model of Balint group work (Rekola 1994), and they were originally called "junior Balint groups". During the supervision process, however, it became evident that the activity should be modified to meet the needs of the students. The students did not have long-lasting, burdensome patient contacts that needed to be elaborated, but instead felt a need to talk about various experiences they had encountered during their medical education. Due to the reflective nature of the discussion in the groups, they were re-named *reflection groups*. The differences between the original Balint group, junior Balint group and reflection group are presented in Table 10.

Table 10. Differences between the original Balint group, the junior Balint group and the reflection group.

Features	Original Balint Group	Junior Balint Group	Reflection Group
Leader			
style	authoritative	facilitative	facilitative
orientation	psychoanalytic	psychoanalytic	family systems
training	psychoanalysis	psychotherapy	psychotherapy or family therapy
Recruitment	mutual selection	open self-selected	open self-selected
Presentation			
subject	a difficult patient	a difficult patient	a difficult learning situation or patient encounter
initial focus	doctor-patient relationship	student-patient relationship	students' experiences
Intensity			
meetings	once or twice a week	once or twice a week	once a month

The themes discussed varied widely and reflected the current issues addressed at each stage of studies (Nevala *et al.* 1995, Nevala 1997). The focus was on professional issues and the psychosocial aspects of medicine, especially on themes that seemed to have been

neglected or scarcely elaborated on during medical education, such as expressing empathy, communicating bad news to the patients, emotional aspects in confronting a terminally ill or dying patient or their relatives, concerns about the future, working as a general practitioner, confidentiality, responsibility and ethics of healers, improvement of medical education, feelings of distress and burnout, and mental health (Kauppinen 1995, Nevala 1998, 2000a, 2000b).

Summary. A reflection group is a group of voluntary medical students meeting once a month with a supervisor to discuss experiences encountered during medical education. These groups also give medical students a chance to reflect on their own professional development. Videotaped medical students' reflection group discussions were the main source of data in this study.

3 Theoretical framework

3.1 Cultural-historical activity theory

Cultural-historical activity theory was chosen to be the framework for this research, because the aim was to examine how medical students collectively construct their professional identities in interactive and practical learning situations during medical education. My understanding of activity theory has been strongly influenced by its Finnish application known as developmental work research (Engeström, 1987, 1995b), which provided me with conceptual tools for understanding the process of construction of physician's professional identity within an institutional context. Below, the term 'activity theory' will be used to refer to this application.

This chapter begins with a short introduction to the history of activity theory (Chapter 3.1.1). After this, the concepts relevant for this research are presented with the help of the five central principles characterizing activity theory (Engeström 1995a, 2001). The first principle is that *a collective artifact-mediated and object-oriented activity system* and its network relations to other activity systems are used as the unit of analysis (Chapter 3.1.2). The second principle is *historicity*, as activity systems take shape and get transformed over lengthy periods of time (Chapter 3.1.3). The third principle proclaims *the possibility of expansive transformations*, i.e. long cycles of qualitative transformations, in activity systems (Chapter 3.1.4). The fourth principle is that an *activity system is always multivoiced* - a community of multiple points of view, traditions and interests (Chapter 3.1.5). The fifth principle is the central role of *contradictions as sources of change and development.* Contradictions are historically accumulating structural tensions within and between activity systems. The adoption of new elements in an activity system may cause contradictions that generate disturbances, conflicts, dilemmas or innovative attempts to change the activity (Chapter 3.1.6). (Engeström 2001). Finally, some considerations concerning narratives are presented in Chapter 3.1.7.

3.1.1 Generations of activity theory

The first phase in the development of cultural-historical activity theory was based on the research by the Russian psychologist Vygotsky (1978, 1981). He was interested in the development of higher mental functioning in humans and proposed "mediated action" as a unit of analysis (see Figure 2). According to him, tools and signs (especially language) make it possible for humans to regulate their own actions. Language enables human beings to be conscious of themselves and to evaluate their actions. Cultural artifacts, on the one hand, regulate and modify humans, but on the other hand, enable them to act and create. Object-orientedness of action became the key to understanding the human psyche. The limitation of the first generation was that the unit of analysis remained individually focused.
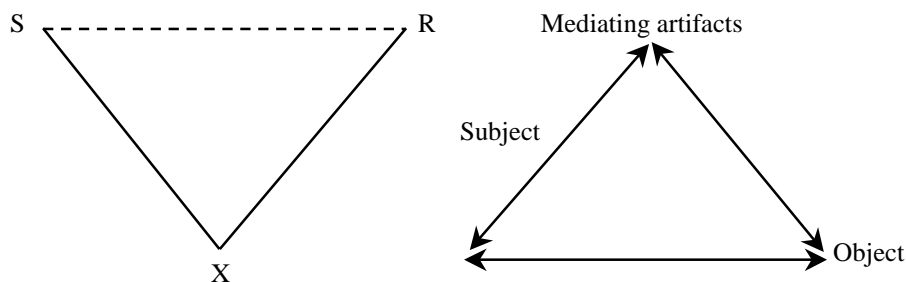
Fig. 2. Vygotsky's model of mediated action and a common formulation of it (Engeström 2001).

In the second generation, Leontjev (1978, 1981) developed the mediated action theory by introducing a model defining the conspectus of activity, action and act. Engeström (1987) developed the structural model of the human activity system further by adding the collective dimension: rules, community and division of labor (see Figure 3.). The concept of activity is understood to serve as a link to overcome the dualism of individual and society.
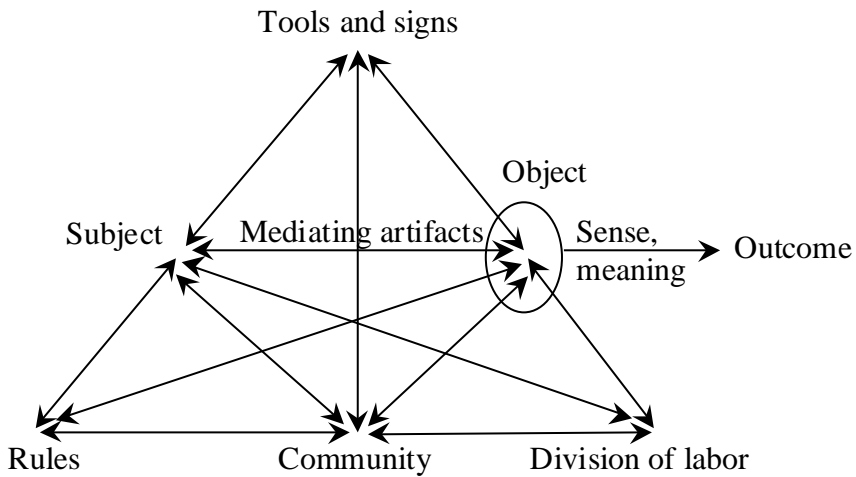
Fig. 3. Model of the human activity system (Engeström 1987).

According to this model, individual actions are seen in the context of the activity system, which is historically developing, dynamic, and contradictory (Engeström 1987). The object of activity is a moving target not reducible to conscious short-term goals.

The third generation of activity theory needed to develop conceptual tools to understand dialogue, multiple perspectives, and networks of interacting activity systems. The central activity system and the goal-directed activity system can be viewed as a pair (see Figure 4.) of systems that interact with one another, such as doctor-patient interaction (Engeström 1999). Or different activity systems can be seen as linked in a dynamic web-like construct (Virkkunen 1994), where the central activity interacts with the neighboring systems of goal-directed activity, tool-producing activity, subject-producing activity or rule-producing activity.

Fig. 4. Example of a third generation activity system model (Engeström, 2001).

3.1.2 Medical education as an activity system

Learning medicine as an activity system. In this study, medical education is approached from students' point of view. Figure 5 presents a hypothesis concerning the context of construction of physicians' professional identity. The aim of learning medicine is to become a doctor. Lectures, demonstrations, examining patients and performing procedures as well as writing exams serve as tools for learning. The context of learning is a university hospital. Various rules of professional ethics and conduct and the feedback from the socializing agents (physicians, staff, patients and peers) guide the processes of learning and professional development. The object of this activity may be difficult to define, as it is not reducible to conscious short-term goals. The object of medical education in a historical perspective is elaborated in chapter 3.1.3.

Tools and signs
Lectures
Demonstrations
Patient examinations
Exams

Object

Subject
Medical student

Sense

Meaning

Outcome
Doctor

Rules
Common sense
Professional ethics
and conduct

Community
University hospital

Division of labor
Physicians
Staff
Patients
Peer

Fig. 5. Learning medicine as an activity system.

Reflection group as an activity system. The reflection group is a mode of supervision for medical students. These groups consist of eight to ten medical students and a supervisor, who meet once a month for one and a half hours. In these groups, medical students are encouraged to elaborate on the critical experiences they have encountered during their medical education. The focus is on integrating the emotional learning experiences into the professional development. A videotaped reflection group session was used as a unit of analysis in the qualitative part of this study. The reflection group as an activity system is described in Figure 6.

Tools and signs
Conversation
-Reflection
-Narratives

Object

Subject
Reflection group

Sense

Meaning

Outcome
Professional
identity

Rules
Conversation rules
Confidentiality
Commitment

Community
Department of
psychiatry, semi-
institutional context

Division of labor
Medical students
Supervisor

Fig. 6. Reflection group as an activity system.

3.1.3 Historically constructed object of medical education

Medical education, along with medical practice, has evolved as a result of the increasing biomedical knowledge. Shorter (1985) divided the history of medical practice into three periods: traditional, modern and post-modern. According to him, *in the traditional phase,* before 1870, the diagnosis was based solely on interviewing the patient and naming the main symptom. *In the modern phase*, during 1870-1960, physical examination became the main method of arriving at the diagnosis. (Shorter 1985) The new knowledge based on anatomical dissection prepared the ground for a new type of medical practice, *hospital medicine.* Empirical evidence became the basis for assessing the truth. Concerning surgery, more thorough command of normal and pathological anatomy was required of a good surgeon. Advances in antisepsis and anesthesia made surgical operations more successful. On the other hand, public health also improved. At that time, specific treatments began to evolve as a result of scientific discoveries, including the diphtheria antitoxin in 1894. (Sinclair 1997). Foucault (1989/1973) noted that the relationship between the doctor and the patient was fundamentally altered by the new sort of knowledge derived from anatomy. The language of medicine became Latin due to the standard classifications, which additionally enforced this change in the doctor-patient relationship. Hospital medicine also created new relationships between medical professionals: hospital doctors vs. general practitioners, senior vs. junior hospital doctors, and students vs. hospital doctors (Sinclair 1997). *In the postmodern phase*, from 1960 onwards, treatment of patients became the main goal of doctors' work (Shorter 1985). The importance of taking the history and making physical examinations was diminished by the advent of elaborated imaging methods and laboratory examinations.

The rise of *laboratory medicine* had far-reaching influences on the content of medical education (Downie & Charlton 1992). The criticism against the narrow focus in treating patients' biomedical problems (Engel 1977) resulted in medical education reforms emphasizing "comprehensive care" (Riska 1990). The reforms have followed two main trends, which can be seen to complement each other (Vinten-Johansen & Riska 1991). One of them was the humanizing movement in the clinical phase of medical education, which suggested that behavioral sciences and humanities should be added to the curriculum (Riska & Vinten-Johansen 1981). The other emphasized the capacity to think and problem-solve in a scientific manner. These trends have also influenced the recommendations issued in the late 20th century (see Chapter 2.2.2). It was hoped that the acquisition of appropriate attitudes and values as well as medical knowledge (Kendall & Reader 1988) would be achieved by problem-based learning (see Chapter 2.3.2).

Engeström (1999) described an emerging contradiction in the present medical practice between the biomedical (curing disease) and psychosocial (caring for patients) orientations. His hypothesis for future development was that the *object of medical practice* should expand to being *an ill person instead of illness*. In order to achieve this kind of development in medical practice, an expansion of the object of medical education would also be needed. The historically constructed object of medical education and a hypothesis for future development are presented in Table 11. The future hypothesis involves a qualitative change in the physician's role, which cannot be achieved merely by adding "identity" to the aims of professional education. The need for expansion of the object of medical education has also been indicated in the discussion concerning medical ethics (Chapter 2.3.3) and reflective practice (Chapters 2.3.1 and 2.3.4).

Table 11. Historically constructed object of medical education and a hypothesis for future development.

Historical period Shorter (1985)	Traditional Before 1870	Modern 1870-1960	Postmodern 1960-2000	Future
Object of medical education	Knowledge	Knowledge Skills	Knowledge Skills Attitudes	Knowledge Skills Attitudes Identity

3.1.4 Activity theory and professional identity

 Below, some aspects relevant for understanding the construction of physicians' professional identity within the activity theoretical framework are discussed in more detail.

Development of personality in collective activity. Self-awareness and self-consciousness are preconditions for the development of personality. Leontjev (1978) claimed that personality is not determined by genetics alone; personality is not innate, but a product of socio-historical and individual development. He bases his ideas on the dialectic method of Marx and claims that personality, as well as consciousness, emerge through activity in the social relationships in which a person participates. The relations between the subject and the world are dual, consisting of mediated, practical activity on the one hand and social interaction on the other.

   There is some tension between the change and stability of personality. Personality changes, as does the person's life, but at the same time it conserves its stability and identity. When moving to a new system of relationships in society (such as professional education), the subject acquires new properties, which contribute and supplement to his or her personality. Leontjev (1978) proposes that scientific inquiry should focus on understanding the construction and re-construction of personality in concrete social practices.

> *"The fact that a person is working as a technician, doesn't tell anything about his personality. His characteristics are only observable in those conditions that he is necessarily subjected during the work processes and outside of them."* *(Leontjev 1978)*

   Cultural-historical activity theory makes a distinction between the concepts of activity and action. Activity is always collective and the outcome of individual actions. Whereas actions are motivated by individual's intentions, the motivation for activity is collectively constructed. Leontjev (1978) proposes activity to be the unit of analysis in the research on personality. The approach he recommends is to examine 1) the changes in the subject that occur due to his development in the system of cultural relationships, and 2) the inner contradictions of activity by examining the mediating and reflective processes. The construction of physician's professional activity, in this study, is examined as a collective activity within the institution of a medical school. Thus, the concept of social support is seen as inherent in the activities of learning and as inherent in practical interpersonal relationships.

Expansive learning. Bateson (1972) distinguished between three levels of learning. Learning I refers to conditioning, i.e. the acquisition of the responses deemed correct in a given context, for instance, learning to correct answers to an exam. But whenever we observe Learning I, there is also Learning II going on: people acquire deep-seated rules and patterns of behavior characteristic of the context itself. Students also learn "the hidden curriculum" of what it means to be a student: how to please the teachers, how to pass exams, how to belong to a group and so on. Sometimes the context entails

contradictory demands. A situation of this kind creates a double bind (Bateson 1972), which may lead to Learning III, where a person or a group begins to radically question the sense and meaning of the context and to construct a wider alternative. Engeström (1987) developed Bateson's ideas into a theory of expansive learning. Expansive learning is an open cycle or a spiral, which leads to culturally new patterns of activity. Expansive learning is induced by contradictions or dilemmas (see Chapter 3.1.6), a double-bind situation, which leads to the development of a new object for the activity. In the phase of externalization, changes are introduced into practice and, hopefully, stabilized as the new way of practice. (Engeström 1995b). The construction of physicians' professional identity, in this study, is understood as parallel to the process of expansive learning; in situations where the conceptions of oneself as a future doctor are challenged, a student is forced to construct new ways of thinking of him- or herself as a professional.

Critical experiences. Complementing the work of activity theorists, who studied object-oriented practical activity and cognitive activities, such as mental reflection, Vasilyuk (1988) proposed a new object of psychological investigation, namely *the activity of experiencing*. He was interested in examining critical situations which cannot be resolved by practical activity or mental reflection. As an example, he used a situation in which a beloved person dies. Neither practical activity nor perception of the situation can help one to cope with a misfortune of this kind. The person has to go through the labor of experiencing. The product of the labor of experiencing is always something internal and subjective – mental equilibrium, consciousness of meaning, tranquility, a new sense of values – in contrast to the external product of practical activity and the internal but objective product of cognitive activity (e.g. knowledge).

According to Vasilyuk (1988) a psychological situation can be determined by 1) what the actual "internal necessity" of a person's life is at the given moment, 2) what the internal and external conditions of life are, and 3) what means are available to the person for realizing that "internal necessity" under given conditions. A situation becomes critical when the relationship between these three components is such that realization of the "internal necessity" becomes impossible.

The key concepts in analyzing critical situations according to Vasilyuk (1988) are: 1) *stress* (any non-specific demand made by the environment that a person is unable to cope with), 2) *frustration* (a strong motivation to achieve a goal and an obstacle, either internal of external, that prevents this achievement), 3) *conflict* (simultaneous actualization of two or more motives/alternative possibilities of reaction present at the same time/collision between ideas, wishes, aims, values), and 4) *crisis* (impossibility for the individual to actualize himself in his old form, dialectics of identity (preservation) and metamorphosis (development).

According to Vasilyuk (1988), a critical situation motivates the individual to investigate the situation for "a possibility". This investigation aims to find answers to questions of vital interest to the individual. In this study, students' critical experiences during medical education are examined, as they are considered important in inducing reflective learning and the process of construction of physician's professional identity.

Professional orientation and professional identity in activity theory. The concept of *professional orientation* is used in this work as an indicator of the direction of

professional interests and career preferences, whereas *professional identity* refers more broadly to the conceptions of oneself as a future physician. Professional identity is considered an important "tool" in practising medicine. Professional identity is constructed in interaction as well as in practical learning and work situations. The university hospital provides the organizational context for the construction of professional identity in this study. The construction process is collective and involves various socializing agents: other doctors, nurses, patients and peers. Even though the formation of professional identity is partly an unconscious process, as a byproduct of learning or as part of the hidden curriculum, it can in certain situations become a target of reflection. As a result of the reflective process, professional identity may become conscious. Encountering critical situations is part of the daily practice in medical school. These situations can induce reflection-on-action and conscious development of professional identity. An opportunity to improvise new identities makes it possible to draft new answers to the dilemmas encountered. The process of physicians' professional development is examined by paying attention to the critical experiences medical students encounter during their socialization process. Special interest is paid to the dilemmas (Chapter 3.1.6) and narratives (Chapter 3.1.7) medical students produce in the reflection groups.

3.1.5 Multivoicedness and perspectives

Multivoicedness. Discourse is a dialogical process in which the speaker prepares for the responses of the listener, whether they be arguments, agreements or something else (Bakhtin 1981, 1984, Vygotsky 1978, 1987, Billig 1987, Billig *et al.* 1988). For Bakhtin (1981, 1984), languages are socially produced, ideological and lived perspectives into the world. Social languages are not neutral, but each has a taste of a profession, a genre, a tendency, a party, a particular work, a particular person, a generation, an age group, the day and hour. Words in language are half someone else's, and they become one's own only when the speaker populates them with his own intention, his own accent. *A voice* expresses the speaker's perspective, aims and world view in the situation. Voices are socially inscribed: they are derived from the social languages of the activity systems behind the speaker, and they thus reflect the historically formed models of that culture. However, voices are not permanent roles, they are always uttered by an individual in a specific context. Voices change and develop, a person can change his or her voice even during a single episode of interaction, and these voices can even be mutually conflicting. This phenomenon was called heteroglossia, or multivoicedness, by Bakhtin (Bakhtin 1981). In developmental work, the research voice is seen to reflect the interests of the activity system in which the speaker acts (Engeström R 1995, 1999, Engeström Y 1993, Saari 1995). Voice is a perspective with certain underlying values. The way in which one talks or chooses a certain style of speaking or the concepts that one uses can express a certain voice (Engeström 1992, Miettinen 1993, Mishler 1984, Wertch 1991). However, a person can change voices within one conversation in order to be better understood. In this research, the intermediate concept of perspective is used to analyze the multivoicedness of medical education.

Perspectives. The concept of perspective is understood in the literature as seeing things or situations from the perceiver's point of view (Billig *et al.* 1988). The production of perspectives is not independent of others' perspectives. Becker *et al.* (1963) defined perspective as a co-ordinated set of ideas and actions a person uses in dealing with a problematic situation, to refer to a person's ordinary way of thinking and feeling about and acting in such a situation.

> *"A person develops and maintains a perspective when he faces a situation calling for action which is not given by his own prior beliefs or by situational imperatives. In other words, perspectives arise when people face choice points".*

In frequently re-occurring situations, the perspective probably becomes an established part of a person's way of dealing with the world. People perceive situations differently, depending on their prior perspectives. Becker *et al.* (1963) defined group perspectives as modes of thought and action developed by a group of people facing the same problematic situation, i.e. they are customary ways of thinking and acting which appear natural and legitimate in such situations. Becker distinguishes perspectives from values in the following ways: 1) perspectives are collective in character, while values are individual, 2) perspectives are situationally specific; they are patterns of thought and action which have emerged in response to a specific set of institutional pressures and serve as a solution to the problems those pressures create, while values are generalized and abstract, capable of being applied to a great variety of situations, 3) perspectives are related directly to dilemmas faced by the persons who hold them, and, 4) perspectives contain definitions of the situations as the actor sees it (and about the nature of the situation in which judgements are to be made), while values are statements of the worth of things.

Holland and Reeves (1994) understand perspective in much the same way as Becker. According to their definition, perspective is "a place where contradictory elements of self-reflection become manifest and elaborated in consciousness". Perspective is not just the "angle" from which one views the world, but an understanding one comes to have of activity based on one's position in it. They also emphasize that the development of a perspective is a collective and contingent achievement. However, they note additionally the importance of historical development in the creation of a perspective. This aspect is also emphasized in Lave and Wenger's (1991) definition of perspective: "Perspectives emerge and evolve in an ongoing, situational interaction. Perspectives are historical products, collectively emergent, object-oriented stances, not individual positions, fixed and given". In their definition, perspective potentially "names a place where systemic contradictions become manifest in persons". Mehan (1993) on the other hand, described varying social languages as perspectives because of the participants' different backgrounds and experiences.

According to Holland *et al.* (1998), personal activity always occurs from a particular place in a social field. A person involved in an activity is presumed to have a perspective. Perspectives are tied to a sense of entitlement or disentitlement to the particular places, relationships, activities, and forms of expression. Lachicotte (1992) studied psychiatrists and other mental health workers and noted that public medical care has at least four vocational voices: the medical, the psychological, the sociological and the administrative.

Each professional learns and personalizes the discourse appropriate to that vocation. The vocations become "voices" and thus capable of responding to the problems that confront practitioners. Perspectives in this research refer to the ways in which medical students understand and share their experiences of the various activities they participate in during medical education.

3.1.6 Contradictions and dilemmas

Contradictions. Cultural-historical activity theory understands contradictions as a driving force of development and learning. Contradictions are the key to understanding shifts in activity systems. The effort to identify and work out the multilevel contradictions drives change. The primary contradictions arise as inner tensions between exchange value and use value within each corner (subject, object, tools, goal, rules, community and division of labor) of the triangle of activity. They are often hidden and cause friction in the activity system, but do not cause a crisis (for example, common sense versus professional rules of conduct in doctors' work). Secondary contradictions emerge when some part of the activity system qualitatively changes due, for example, to new influences from outside, while the other parts remain unchanged (hierarchical division of labor lagging behind the new methods of education). These contradictions manifest as conflicts between the different parts of the activity system. Tertiary contradictions appear between the new and old forms of activity (problem-based learning and traditional teaching methods). Quarternary contradictions require that we take into consideration the essential neighboring activities linked with the central activity (e.g. teaching versus research) (Engeström 1995b). In this study, the intermediate concept of 'dilemma' is used to examine the contradictions that serve as a driving force for physicians' professional development.

Dilemmas. Dilemmas represent the contradictory and dialogical nature of consciousness (Billig 1991). 'Dilemma' was defined by Billig *et al.* (1988) as a situation in which a person has to make a decision between equally bad (or good) options. Most psychological studies concerning decision-making have concentrated on the process of making difficult decisions, the dilemmas have been abstracted from the situation, and the dilemmatic content has been seen as less important than the output, i.e. the subject's decisions. Billig *et al.* (1988), however, were interested in the general preconditions and socially shared beliefs that give rise to dilemmatic thinking of individuals. According to them, dilemmas arise because people share values, norms, social expectations, duties, guilt feelings, wishful hopes and so on. In this respect, the individual decision-maker is never alone, although the act of choosing can be a lonely act. When one thinks about a dilemma, wondering whether to pursue one or the other course, one arranges the reasons as in an argument, shifting through the balance of justifications and criticisms. In justifying themselves and criticizing others, people employ rhetoric argumentation. Rhetorical skills are closely linked to the skills of thinking: the contrary themes of common sense represent the materials through which people can argue and think about their lives.

Each cultural condition produces its own particular dilemmatic arguments. Contradictory themes may arise from different sources, such as the contradiction between possessing a theoretical ideology and simultaneously living within a society whose everyday life seems to negate that ideology. *Lived ideology* refers to ideology as society's way of life, including what passes as common sense within that society. It seeks to define how people and their thinking are shaped by cultural patterns. *Intellectual ideology*, on the other hand, is a formalized philosophy of a particular group, whose members' thoughts, actions and values constitute an internally consistent pattern. Theoretical dilemmas may be contradictory to common sense. (Billig *et al.* 1988).

In activity theory, dilemmas are understood as inner contradictions between the various perspectives connected to a given activity. The concrete manifestations of contradictions in research data can be disturbances (visible discoordination in the work activity), disruptions (end of an activity), dilemmas or innovations (deviations from the script that opened up a possibility to produce a new idea or solution). Dilemmas appear in conversation as hesitation, reservation or alternation between two options, conflicting arguments, or even as arguing with oneself. (Engeström 1998). By identifying dilemmas in conversation, it is possible to recognize contradictions in the activity system (medical education) and find new alternatives for development. In this research, dilemmas are used as an intermediate concept in analysing the critical experiences medical students tell about in reflection group discussions.

3.1.7 Narratives

Narratives, in cultural historical activity theory, can be understood as socially developed cultural tools specialized in structuring experiences, modifying emotions and activity. Below, some considerations concerning the choice to use narratives as an intermediate concept for analyzing medical students' reflection group discussions are presented.

Narratives and experiences. Narratives help in structuring experiences. Individuals make sense of their experiences by casting them in a narrative form (Bruner 1990, 1991, Carr 1986, Mishler 1986, 1995). Narration is a form of understanding and interpreting human life (Rosenwald & Ochberg 1992, Somers 1994, Taylor 1989). Narratives structure experiences, organize memories and build purpose to life events (Bruner 1987). To narrate is to tell a story or a history of someone or something so that a meaningful sequence is portrayed. Models for narratives are drawn from the socio-cultural stock of stories; normative schemata of how one should act and feel in a certain situation (Rosenwald & Ochberg 1992). Narration can serve as both representing and constituting reality (Bruner 1991). On the one hand, stories serve to generate understanding, direction, and unity in our lives, while on the other hand, the narrated stories have repercussions on life and repattern it (Kerby 1991).

Narratives and emotions. Narratives can express or modify emotions. There is an essential narrative ingredient in our emotional life. The way we initially view a certain event, and create a story about it, are bound up with the resultant emotion. Before we tell

a story, the meaning of events may be obscure to us. In narrating and repeating our experiences, we must continually adjust our story until we are satisfied that "this is how it was". Emotional experiences are a result of interpretive emplotment, and articulation may change the emotion itself. Inarticulate feelings seem to demand to be narrated in order to be understood and developed. Our ongoing experience is quasi-narrative in nature, and the stories we tell are generated out of this narrative preunderstanding. Narrative activity is present in dreams, memories, future plans, emotional or moral experience and so on. In experience, we cannot differentiate between emotion and value. We have certain memories and histories, but additionally we assume certain attitudes towards them. Moral values are very much a product of how experience is reconstituted and sustained in our narrative reflections. A story may call forth an emotional response, or an emotion may call forth a story. (Kerby 1991).

Personal narratives and identity. Personal narratives help to construct our identities (Mishler 1995). We constantly narrate our own lives and also the lives of others, and we have already been narrated from a third-person perspective prior to gaining the competence for self-narration. Much of our self-narration is a matter of becoming conscious of the narratives that we already live with and in. By narrating, we articulate why and who we are and what we want, thus justifying our actions as well as constituting our identity. What is required in narrating is the ability to distance oneself from the action and to perceive it in a manner of a plot – we do this especially when a certain episode of one's life has reached a conclusion. At some instances, "who I am" can be perceived by others more clearly than by oneself. (Kerby 1991).

The way a person interprets his or her life can be called *inner narrative or self-narrative.* The evolution of an inner narrative is a creative process in which the constraints and opportunities of the circumstances of life are matched with a relevant narrative form. A self-narrative defines the relevant social space and the person's role in the matrix of social relations. The inner narrative has to fit in with the actual circumstances the person lives in. *A lived narrative* is a self-narrative in action – a process in which the person attempts to implement the visions generated by the inner narrative. *A told narrative* is the symbolic, social representation of past events – telling a narrative in a certain way in a special social context is a social act which can have various effects: establishing social identity, giving an excuse, claiming respect, arousing sympathy and so on. The different levels of narrative must be evaluated by their own specific criteria. Inner narrative has to be grounded on experience, lived narrative on actual circumstances and told narrative on forms of social intelligibility. (Hänninen 1996, 1999).

Identity is created by a self-narrative (Bruner 1990). Personal stories are not only acts of telling someone about one's life but also means by which identities can be fashioned (Holland et al, 1998). The self is inseparable from the narrative or life story it constructs for itself. Self-narration is both a receptive (reflecting our prenarrative experience) and a creative, interpretative (conscious narratives are inevitably refigured) activity. Things change in time and our notions of identity seek to find some continuity. Self-identity is dependent upon the coherence and continuity of one's personal narrative – one's identity may be or become fragmented into many different and discontinuous narratives. Questions of identity and self-understanding arise primarily in critical situations and at

certain turning points in our routine behavior. At difficult transitions of life, psychotherapists use narratives to change lives by retelling and constructing new ones (White & Epston 1990, Anderson 1997).

Institutional narratives and identity. Institutional narratives are important contexts for the construction of identities. Identities are created in interactions between individuals in the social context and performed in conversations. Narrative is the main form of social life, the main device for making sense of social action. There could be no civilization if people were not able to narrate their past, present and future actions to each other. The chief means of moral education in premodern societies was the telling of stories fitting into that society. We cannot understand human conduct if we ignore its intentions, and we cannot understand human intentions if we ignore the settings (institutions) in which they make sense. Organizations need a coherent narrative just as humans do. If we want to understand an institution we have to discover its repertoire of legitimate stories and interpretations of why things should be done this or some other way. The main source of organizational knowledge is narrative. Organizational stories capture organizational life in a way that no compilation of facts ever can. Stories explaining deviations are socially sensitive – stories are instruments for social negotiation. Institutions are collections of cultural rules and routines that define appropriate actions in terms of relations between roles and situations. In the socialization process, individuals try to discover, and are taught, relevant rules, values, and language. (Czarniawska 1997).

Professional narratives and identity. DelVecchio Good (1995) explored how students learn medicine in an innovative institutional context (Harvard Medical School) by developing competence narratives and finding a "moral" professional voice. She was interested in physicians' competence evaluated in terms of clinical narratives rather than as a specific set of skills and an acknowledged body of knowledge held by individuals, and the focus of analysis was on the ongoing clinical activities – interactions between students and the training hierarchy, between doctors and their patients as well as beween groups of physicians. She noted that students had to learn new narrative forms during their clinical clerkships. In order to be considered competent medical students, they had to undo the patients' common sense narratives and develop medically meaningful arguments and plots with therapeutic consequences for them. They learned how to tell a clinical story (genres of medical mystery or medical persuasion that aim to influence the therapeutic decisions in write-ups), and in that process the psychosocial aspects of most patients' illnesses were largely irrelevant. Similarly, Mishler (1999) studied the professional identity of craft artists by using a case-centered model of analysis of life story narratives. He was interested to find out how individuals make identity claims and how they manage conflicting demands within work and between work and family life.

Narrative structures. Bruner (1991) defined narrative characteristics as follows: 1) A narrative is an account of *events occurring over time* (temporal sequence is essential to a narrative), 2) narratives refer to *particular happenings*, 3) narratives are *about people acting in a setting*, and the happenings that befall must be relevant to their intentional states – to their beliefs, desires, theories, values, and so on, 4) narrative *compels to interpretative activity* - there is no unique solution to the task of determining the meaning

of a certain narrative – there is a difference between what is expressed and what the narrative might mean, the events need to be constituted in the light of the overall narrative (context: social conditions and background knowledge), 5) to be worth telling, a story has to be about *a departure from the routine*, 6) the *acceptability* of a narrative cannot depend on its correctly referring to reality (it is judged by verisimilitude rather than its verifiability), 7) there are *various narrative genres*: farce, black comedy, tragedy, romance, satire and so on, 8) narrative is necessarily *normative*, 9) stories *create culture* by accruing the happenings of the past into a diachronic structure that permits continuity into the present.

Labov (1972) suggests that narratives can be recognized in terms of two components; what happened and why it is worth telling. He defines narratives as stories about a specific past event having a clear beginning and end and being detachable from the surrounding discourse (see also Kohler-Riessman 1993). In his opinion, however well the narrative is constructed, it lacks significance unless the narrator has signaled the point of the story through an evaluation (the part which reveals the narrator's attitude towards the narrative by emphasizing the relative importance of some narrative units compared to others). A story that does not provide us with unity is usually regarded as a failed or incomplete story (Kerby 1991).

Narratives require a script or a plot – an interesting story is one where these scripts are violated or deviated from (Kohler-Riessman 1993). Emplotment serves to organize experienced events into meaningful sequences and placing them within a framing context or history (Czarniawska 1997). A plot helps one to remember by relating the happenings to the whole story. The plot brings together the actors, goals, means, interactions, situations, and unexpected results. And the plot also conveys scary events and sudden changes (Ricoeur 1991). Emplotment is an act of configuration, and the plot conveys the schemes and traditions, not only a temporal order and coherence. Plots are flexible – the same set of events can be organized around different plots. (Ricoeur 1984).

4 Aims of the research

The aim of the present study was to investigate the process of constructing physician's professional identity during undergraduate medical education by exploring

A) medical students' critical experiences, which affect the process of constructing professional identity during undergraduate medical education (Questions 1, 4 and 5)
B) medical students' conceptions concerning their own professional orientations and professional identities (Question 2)
C) reflection group method as a potential tool for professional development (Question 3)

The research questions were:

1. What kind of perceptions do medical students have of medical education?
2. What types of professional orientations and identities can be found among medical students?
3. How do reflection groups work in medical education?
4. What do the narratives produced in reflection groups tell about medical education?
5. Which dilemmas are important for the process of constructing physician's professional identity during medical education?

5 Material and methods

Medical students' perceptions of medical education (chapter 5.1) and professional identities and orientations (chapter 5.2) were first examined by a survey presented to all medical students in Oulu. The understanding of these issues was then deepened by using qualitative methods. The main data concerning reflection groups (chapter 5.3), narratives and medical education (chapter 5.4) as well as dilemmas and professional identity (chapter 5.5) were videotaped conversations in medical students' reflection groups. Additional data concerning the reflection group activity were collected by asking feedback from one of the groups and by interviewing the supervisors. Below, the procedures of data collection and handling are presented in detail.

5.1 Medical students' perceptions of medical education

Sample of the study. The target population to which the questionnaire was presented consisted of first- to fifth-year medical students (n=423) in the University of Oulu. The questionnaires were delivered to their mailboxes at the faculty in May 1996. Of the students who received the questionnaire (n=373), 63% completed it, and they constituted the sample of this study (n=233).

Development of the questionnaire. The questions concerning sociodemographic variables and part of the questions concerning medical education in general were compiled out of questions previously used in Finland to assess the opinions of medical students (Vainiomäki 1995) and qualified doctors concerning undergraduate medical education (Kumpusalo *et al.* 1991). The questions concerning students' motivation to learn, perceived stress and need for support were designed for this research. The pilot questionnaire was administered to 10 students at different different stages of the medical programme, and the necessary revisions were then undertaken. The final version of the questionnaire (see Appendixes 1a & 1b.) contained 29 structured questions (109 items) and 2 open-ended questions, which covered the following topic areas:

1) *Sociodemographic background* was elicited by questions about age, sex, year of high school graduation, year of entry into the medical school, course status, marital status, partner's field of occupation (medical/other health care profession/no health care profession), number of children, relatives in health care (medical or other).

2) *Variables concerning studies in general* concerned expectations applied to medical education, study motivation and perceived stress in studies. These were evaluated on Likert-type scales.

3) *Variables concerning perceived need for support* during undergraduate medical education were elicited with structured (yes, no, cannot say) questions concerning the students' courrent sources of mental support, their satisfaction with the existing services provided by the faculty and their perceived need for additional support. The best and worst experiences during medical education were asked with open-ended questions (see Appendix 1.).

Statistical analysis. The questionnaire data were analyzed using the statistical package SPSS-X (Norusis 1995). Frequencies and cross-tabulation were used as the main tools of data presentation and analysis. The statistical significance of factors associated with the citations was evaluated using chi-square tests. The number of responses may vary occasionally due to missing data concerning some items.

Qualitative analysis. The best and worst experiences during medical education were asked with an open-ended question: "Describe, briefly, the best (worst) teaching situation or patient encounter that you have experienced during your medical education". The answers were classified using inductive content analysis (Grönfors 1982). The following categories were found: 1) teaching situations, 2) patient encounters, 3) teacher's attitudes towards students, 4) teacher's attitudes towards patients, and 5) none or cannot remember.

In order to test the reliability of the categorization, another researcher (anthropologist by basic training, studying for her 4th year in medical school) was asked to do the categorization independently, to verify consistency. She was given 19 randomly selected examples of the answers concerning the best experiences and 20 examples of the answers to the question concerning the worst experiences (13% of the data). In the category of "best experiences" the value of Cohen's Kappa (Cohen 1960) was 0.87, and in "worst experiences" 0.88. According to Altman (1991), these values of reliability are almost perfect.

Concerning the best experiences, there were 3 examples that could have been placed into more than one category. After discussion, it was decided that these examples would be categorized according to the first mentioned issue, since we assumed it to be the most important thing in the respondents' experience. The category of "patient encounter" was divided into subcategories of "student-patient relationship" and "feedback from the patient", and defined to contain the examples where the student reported being responsible for the patient. Thus, the situations involving a teacher, a patient and a student were placed under "teacher's attitude towards a patient".

Concerning the worst experiences, there were 4 examples that needed to be discussed. The comments that entailed several issues were categorized according to the thing mentioned first similarly as in the best experiences. An example of a patient encounter in

a teaching situation that was humiliating for the patient could have been placed under "teaching situation" or "teacher's attitude towards a patient". After discussion, a decision was made to place it under the former heading, because it dealt with a specially organized teaching situation concerning a specific procedure. In the phase of reporting, the answers were delicately edited to improve readability. The editing was made carefully so as not to change the meaning of the answers

Sociodemographic features of the respondents. The distribution of the respondents' sociodemographic characteristics (age, sex, social relations and academic year) are shown in Table 12.

Table 12. Distribution of various sociodemographic characteristics of the respondents (n=233).

Characteristic	n	%
Gender		
Male	68	29
Female	165	71
Age (years)		
<22	61	26
22-23	85	36
>23	87	37
Marital status		
Single	80	34
Dating steadily	78	34
Co-habiting or married	75	32
Children		
Yes	12	5
Field of occupation of the partner (n=153)		
Medicine	38	25
Other field in health care	8	5
Other field	107	70
Relatives in health care		
At least one doctor	81	35
At least one in another field in health care	85	36
No relatives in health care	67	29

Female students were over-represented (71% of the respondents versus 66% out of all of the students in 1996, p= 0.008). There were insignificant differences in the proportions of respondents from different academic years (see Table 13).

Table 13. Respondents by academic year.

Academic year	Respondents		All students	
	n	%	n	%
1	36	15.5	69	16.0
2	50	21.5	77	18.0
3	42	18.0	85	20.0
4	51	22.0	91	22.0
5	54	23.0	101	24.0
	233	100	423	100

5.2 Professional orientations

The variables for assessing professional orientation and professional identity among medical students were included in the questionnaire that was sent to 1st-5th year medical students in spring 1996 (for more details, see chapter 5.1. and Appendixes 1a & 1b.)

To explore the respondents' *perceptions about their professional identities*, a 17-item, 5-point Likert scale was used. The question was:" How well do the following expressions describe you as a future doctor?" The expressions were: healer, technician, teacher, family physician, health educator, bureaucrat, entrepreneur, health professional, prescriber, assembly-line worker, vocational doctor, helper, comforter, listener, social worker, authority, fellow man. The options for answers were: very well, quite well, cannot say, quite poorly, very poorly. Similar instruments, with slight variations, have been used earlier in studies concerning graduated doctors' perceived identities (Kumpusalo *et al.* 1994).

Professional orientation was assessed by asking: "Have you already thought of what kind of work you would like to do after graduation? Please, assess your interests in the following areas". The given areas of interest were: work in a hospital, work in primary care, work as a private practitioner, administrative work, teaching at the university, research in biomedicine, research in public health, research in a clinical field, surgery/operative field, internal medicine, pediatrics, mental health, work in a third world country. The options 1-4 on the Likert scale were: I'm very/somewhat/not at all interested or I cannot say. The same question has been used previously in the Doctor in the year 2000 study (Niemi *et al.* 1993).

Frequencies and cross-tabulation were used in the first phase of analysis. In the second phase, principal component factor analysis with varimax rotation was used to identify the dimensions of the professional identities of medical students. Before conducting the factor analysis, the "cannot say" answers were extracted from the data. The main criterion used to determine the number of factors was the magnitude of the eigenvalues (Norusis 1995). The differences in the factor scores were analyzed by comparing the mean values between gender and the reported professional orientations. The statistical significances of the differences were evaluated by t-test or analysis of variance. When

reporting the results, the sign of the factor scores was changed from – to + to enhance readability and to facilitate interpretation: thus, large values are typical for the factor.

5.3 Reflection groups

Data triangulation. In order to find out how reflection groups work in medical education, data were collected with multiple methods: 1) *videotapes of reflection group discussions,* 2) *reflection sheets*, a questionnaire filled by each member and the supervisor in one group after every session, 3) *interviews of the group supervisors*. The different kinds of data are presented in Table 14.

Table 14. The three sources of data concerning the reflection groups.

Data	Study population	Quality	Aims
Videotapes (n=10)	Students in all reflection groups (n=35)	Natural data, discussion	Topics of discussion, meta-talk
Reflection sheets (n=76)	Students in James' reflection group (n=9)	Questionnaire, open-ended questions	Most important topics, new insights, topics not expressed, suggestions for improving the activity
Interviews (n=5)	Supervisors (n=5)	Semi-structured interview	Background, experiences of and opinions on reflection groups, suggestions for improving the activity

5.3.1 Videotaped group discussions

5.3.1.1 Data collection

The aim was to collect as versatile data as possible from different reflection groups at different phases of the group's lifespan. The number of tapes recorded was limited for two practical reasons. Firstly, a decision was made not to disturb the group work more than necessary. The issues discussed in the group sessions were considered sensitive, and too intensive surveillance might have interfered with the supervision process. This is why a decision was made only to videotape one session per semester. Secondly, a note was taken to collect enough data, but also to keep the amount of data manageable for analysis.

The group discussions of six different groups (out of the original total of 7 groups) were videotaped at different stages of data collection and at different phases of the group process. One of the groups was followed up for two years (videoed once at the beginning

of the process and once after two years), one group for one and a half years (3 videotapes at 6-month intervals), two for a year, and two of the groups were only videoed once during the first six months (see the Table 15). There were altogether 11 recordings. The sessions were named by the name of the supervisor and the number of videotaped discussions. For example, Richard I refers the first videotape from Richard's group.

Table 15. Lifespans of the reflection group meetings in 1994-1999. Videotaped sessions are marked with X, other sessions with x.

Supervisor	1994	1995	1996	1997	1998	1999	2000	Duration
Susanne*						xxXxxxxXxx		(1999-)
James				xxxXxxXxxX				(1997-1998)
Vicky			xxXx					(1-5/1997)
Tom**			xxXx					(1-5/1997)
Susan*		xxxxxxxXxxxxxXxx						(1995-1997)
Richard	xXxxxxxxxxxxxxxxXxxxxxxxxxxxx							(1994-1998)
Tommy**	xxxxxxxxxxx							(1994-1996)

*Susan = Susanne and **Tom = Tommy, the same supervisor led two different groups.

The general characteristics of the videotaped data are presented in Table 16. In all of the groups except the ones led by Vicky and Susanne, the participants came from at least two different academic years. The numbers of the participants present in each videotaped session varied from 8 to 2. Female students were overrepresented in the groups, but only two of the groups (James and Susanne) did not have any male students in them.

Table 16. General characteristics of the videotaped reflection group sessions.

Supervisor	Number of tapes	Stage of studies	Number of participants in each session	Males on tape (males in group)
Richard	2	Clinical	7/5	2/- (2)
Susan	2	Clinical	5/6	1/1 (1)
James	3	Clinical	8/7/3	-/- (-)
Tom	1	Preclinical	5	1 (1)
Vicky	1	Preclinical	2	- (4)
Susanne	2	Clinical	7/6	- (-)

Vicky's group was excluded from the analysis because all of the 4 male students and 2 female students failed to turn up for the session which was videotaped. As a result, only two girls and the supervisor were present in the session. The script of that session was also different from the other groups, as the discussion was based on a text written by a

cancer patient and the reflection was based on that rather than the students' experiences. Thus, altogether 10 videotapes were analyzed. Some of the characteristics of the analyzed reflection group sessions are presented in Table 17.

Table 17. Characteristics of the analyzed reflection group sessions.

Videotape	Academic year of the participants	Stage of group process*	Duration of the tape
Richard I	3- 6	Middle	1:31:30
Richard II	6	End	55:20
Susan I	5	Middle	1:15:10
Susan II	6	End	1:23:30
James I	4	Beginning	1:22:30
James II	5	Middle	1:20:40
James III	5	End	1:31:50
Tom I	1	Beginning	1:15:10
Susanne I	4	Beginning	1:25:20
Susanne II	5	Middle	1:29:20
Total			13:47:50

*Stage of the group process refers to how long the group had been meeting by the time of recording (beginning = videoed during the first six months, end = videoed during the last six months of the group's lifespan).

All videotapes were taken at the Department of Psychiatry in Oulu, where the meetings took place. For more details of the context of videotaping, see Table 18. The permission to videotape a session was asked from the participants either during the previous session or on some occasions during the same session before the taping began. The camera was either in the room or behind a mirror.

Table 18. Context of videotaping.

Videotape	Permission to tape	Camera	Meeting room
Richard I	In the session	In the room	Regular*
Richard II	In the session	In the room	Videoroom
Susan I	In the session	In the room	Videoroom
Susan II	In the session	In the room	Regular
James I	Before the session	Behind the mirror	Regular
James II	Before the session	Behind the mirror	Regular
James III	Before the session	In the room	Regular
Tom I	Before the session	In the room	Regular
Susanne I	Before the session	Behind the mirror	Regular
Susanne II	Before the session	Behind the mirror	Regular

*"Regular" means, that the camera was taken to the room where the meetings were held normally.

5.3.1.2 Transcription

Conversation analysis has been widely used in research on doctor-patient communication (Frankel, 1984, 1990, 1995a, Peräkylä, 1997, Sorjonen *et al.* 2001). This method involves analysis of detailed transcriptions of selected sequences of discussion. However, as the aim of this study was to explore the wide range of experiences medical students encounter during their education, a decision was made to examine the reflection group discussions as whole conversations. For this reason, the transcription method used in this study was not so strict as that used by researchers who apply conversation analysis.

The group discussions were copied from videotapes to audiocassettes and then transcribed. I transcribed the first videotape myself, and gave instructions to my assistant based on my experiences. The assistant did the initial, word-for-word transcription from the audiocassettes. Each turn was numbered and preceded by a code that consisted of the first letter of the supervisor's name, the number of the recorded session, the first or the first and second initials of the speaker's name. For example, a turn code "R2k58" means: Richard's group, second videotape, Kathy's utterance, 58th in the conversation. Pauses, sighs, laughing, crying, etc. were marked in the text in brackets, and no commas or full stops were used. The transcription symbols are given in Table 19.

Table 19. Symbols used in transcribing video and interview data.

Symbol	Meaning
(.)	Minimal pause
(1)	Pause in seconds
//	Interruption of another participant
(whispering)	The notes concerning whispering, crying, laughing were marked in brackets
Really	Things said with emphasis were marked with italics
*	Beginning of a new topical sequence

From the audiotaped discussion of a group, it is often impossible to know who is speaking. In the second phase, I therefore watched through all the videotapes 2-4 times, checked the transcripts and corrected, if necessary, the speakers and turns, pauses and possible errors, especially in the utterances where medical terminology was used, and any other misunderstandings.

Both the original Finnish transcripts and the English translations of the transcripts are presented in order to give the readers a possibility to compare them.

5.3.1.3 Analysis of the discussion

In analysing the reflection group discussions some attention was paid to the form of discussion (who talked), but the main focus was on the content (what was said). The analysis consisted of 1) compiling a content log (Jordan & Henderson, 1994) of the videotaped group discussions, 2) defining the topical sequences, 3) counting the numbers of sequences and turns (Sacks *et al.* 1974) initiated by the participants and the supervisor, 4) extracting and analyzing the substance sequences, 5) looking at the sequences in which the group discussed about being videotaped, and 6) analyzing the sequences in which the group talked about the group itself, which were called meta-talk sequences.

Content log. The analysis begun by compiling a content log, in which the code and content of each turn, the main topics, the core sentences and notes concerning the turn were recorded. For an example of a content log, see Table 20.

Taulukko 20. Esimerkki sisällysluettelosta Susan I ryhmästä.

	Puheenvuoron koodi ja sisältö	Pääteemat	Ydinsisältö	Huomiot
*	S1n90: mut onhan se ihan totta et kyllä mää niinku itekin ajattelen et jos mää ite sairastuisin niin en mää sitä kaikille kailottais (.) jotenki tuntuu että niinku (.) jos ollaan niinku tässä yhteiskunnassa niin tota (.) se ois *hirveen vaikeeta* myöntää // tietenki se on omaa semmosta kehittymättömyyden (.) astetta mutta kuitenkin (.) niin ois se vaikeeta (.) en tiiä sitten sitä mää just ajattelin että oisko se jossain (.) muussa maassa sitte helpompaa // S1s91: sitä pidetään jotenkin hävettävänä	Sairastumiseen liittyvä häpeä – mahdollinen oma sairastuminen	Jos mää ite sairastuisin niin en mää sitä kaikille kailottais, se ois hirveen vaikee myöntää Hävettävää	
	S1m92: mulla ainakin tulee semmonen olo että jos niinku (.) mut se nyt johtuu siitä et mull on yks tuttu joka on käyny terapiassa ja näin (.) ja hirveen avoimesti on niinku kertonu ylipäänsä niinku yliopistolla ja näin että kaikki *tietää* että hällä on ollut vaikeuksia ja hän on käyny siellä ja siellä nii se on se asemoituminen *niin hirveetä* että se (.) siinä niinku karsiutuu ne turhat ihmissuhteet että (1) tuntuu että tekee enemmän ittelleen hallaa jos niinku menee ympäriinsä selevittään (.) tämmösistä ongelmista et sitä siihen suhtaudutaan niin (.) hankalasti (2)	Intro Tarina Evaluaatio	Tuttu käynyt terapiassa ja kertonut avoimesti Karsiutuu ne turhat ihmissuhteet	Tarina 2: tuttu on käynyt terapiassa Dilemma 3: I Tuntuu, että tekee enemmän hallaa itelleen jos menee ympäriinsä selevittään II ERI ROOLIT - LÄÄKÄRI POTILAANA

Table 20. Example of a content log from group Susan I.

	Turn code and content	Main topics	Core sentences	Notes
*	S1n90: but it is true that if I think myself that if I were to fall ill I wouldn't go and tell everybody about it (.) somehow I feel that (.) if we are in this society that (.) it would be *terribly hard* to admit // naturally it is one's own immaturity (.) but anyway (.) it would be so difficult (.) I don't know then it's just what I thought that would it be easier somewhere (.) in some other country // S1s91: it's considered shameful	Shame of falling ill – possible own illness	If I were to fall ill I wouldn't go tell everybody about it / It would be terribly hard to admit / Shameful	
	S1m92: I have at least a feeling that if (.) but it's because of this person I know who has gone to therapy and so (.) and terribly openly told all over the university and everyone *knows* that she has had problems and that she has gone there and there so it is so the *attitudes* are horrible that it (.) so you see who is a real friend and (1) it feels that you do more harm to yourself if you go around talking (.) about such problems the people's attitudes are so (.) bad (2)	Introduction / Story / Evaluation	This person I know went to therapy and told openly about it / You see who is a real friend	Narrative 2: A friend went to therapy / Dilemma 3: I It seems that you do more harm to yourself if you go around talking / II DIFFERENT ROLES -DOCTOR AS A PATIENT

Topical sequences. In order to get an overview of the basic structure of the data, the discussions were divided into topical sequences. Another possibility would have been to use the concept of episode. Harré and Langenhove (1999) describe episodes as structures of social encounters, which include the thoughts, feelings, intentions and plans of all those who participate. They define episode as "any sequence of happenings in which human beings engage which has some principle unity". It would have been possible to use the concept of episode as loosely as it was described by Harré and Langenhove. However, as the concept of episode carries a lot of connotations (Engeström 1999), a more neutral term, 'topical sequence', was used. The framing of topical sequences called for interpretation, because the discussion went on without breaks. One topical sequence included all the successive turns during which the participants were talking about the same topic (Saari 1995).

The topical sequences were quite long in duration. Below, the content of one topical sequence, Richard I 10/13 "Encountering sorrow", which consists of 39 turns, is described. The core sentences from this episode were extracted and formulated as delicately as possible in order to generate an understandable core narrative of the content. The discussion in this example is based on the story Henrietta told about her father's sudden death at the beginning of the session. Before the beginning of the topical sequence presented as an example, Henrietta had repeated the events that lead to her father's death, this time from the medical perspective.

Example of the content of one topical sequence.

The topical sequence begins by Edith asking whether it would be possible to arrange a course on how to encounter another person during medical education. She also notes that one purpose of the reflection group discussions is to prepare students to encounter feelings. Henrietta responds by pointing out that she found that her childhood friends knew how to comfort her, but her friends at medical school didn't know how to react to her sorrow. She pointed out that presenting "condolences" might seem old-fashioned, but at least it is one way of opening the discussion. Anthony commented that the Finnish language lacks a phrase with which you can begin. Then Anna told a story of the death of her cousin's baby, describing how difficult it was to react to the news. Later on, when they heard about a new pregnancy, it was easier to congratulate. Anthony brought up the question of whether contacting people in grief could disturb them. Henrietta responded that it is, on the contrary, nice that people remember. Timothy commented that one often feels that one is not close enough. Henrietta said that she felt good when even people she didn't know paid their respects. Richard, the supervisor, pointed out that there is the danger that the widow is left all alone after the funeral, and Henrietta confirmed that notion. Edith mentioned the tradition of wailing women, who help people to encountering their sorrow. Tina confirmed that it is easier to cry if there is someone else crying beside you. Richard then turned the discussion back to the question what words one can use to give condolences. Henrietta responded that it depends on what feels appropriate for the person in question. Tina's opinion was that the words are not so important but the thought. Richard asked the students how they would like to be comforted, and the topical sequence ended in the participants giving their opinions. The discussion then turned to how physical touch could be used in comforting and in professional practice.

Decisions concerning the beginning and endings of topical sequences had to be made: 1) a pause, 2) a turn that introduced another topic, and 3) an abrupt change of the theme were used to determine the beginning of a new topical sequence (see Table 21).

Table 21. Esimerkki puheenvuorosta, joka sisältää teemajakson vaihdoksen.

	Puheenvuoron koodi ja sisältö	Huomiot
	S1S185: mut sehän on niinku ihannekuva oikeestaan // ett miten se pitäs mennä omaa työtään tutkimalla kaikessa rauhassa huomaa jotakin jolla on merkitystä muillekin ihmisille	Evaluaatio tutkimustarinasta
*	(4) yks tapa jos ei keksi mihin mennä niin on ai hakeutua yleislääkärin töihin ja hakee siellä sit sitä erikoisalaa (---) sieltä käsin (2) …	Yleislääkärin työstä

Table 21. Example of a turn that contains a change of topical sequence.

	Turn code and content	Notes
	S1S185: but it's like an ideal picture really // of how it goes by analyzing one's own work in peace one notices something that has importance for other people	Evaluation of a story on doing research
*	also (4) one possibility is if one cannot figure out where to go to is to take a job as a general practitioner and then to look for the specialty (---) from that perspective (2)…	About general practitioner's work

Initiation of topical sequences and turns. In order to find out how active the group participants were in the discussion, the numbers of initiations per students and supervisor were counted. This analysis was similarly conducted concerning the substance sequences, and also the turn-taking initiatives were counted.

Substance sequences. Those topical sequences with a specific meaning content arising from the participants' experiences were especially interesting. In order to define these substance sequences the beginning and ending sequences as well as sequences of the group talking about the videotaping of the group session or about itself (meta-talk) were extracted from the data.

There were altogether 123 topical sequences in the data, of which 102 were substance sequences. The topical sequences of one session are presented as an example in the Table 22. A list of all substance sequences in each session is presented in Appendix 2.

Table 22. Example of a list of all topical sequences in one session. James I videoed in spring 1997, participants (n=8) from the 4th academic year, all females, new curriculum, at the beginning of the group process.

	Topical sequence	Number of turns
1	Beginning and talk about videotaping	11
2	Death in the pathology and forensic medicine courses	20
3	Various reactions towards death	17
4	Acting during autopsies	22
5	Patient – corpse	19
6	Respecting the diseased	19
7	Black humor	14
8	Respecting the living patients	13
9	Encountering a dying patient	5
10	Empathy – professional conduct	12
11	Giving hope, telling the prognosis	17
12	Back to pathology	47
13	Ending	7
Total		223

Discussion about being videotaped and meta-talk. The topical sequences in which the group discussed 1) the topic of being videotaped or 2) the group itself (which were called meta-talk) were marked in the content log. The core sentences in these sequences were extracted and carefully formed into a narrative, taking care not to change the meaning of the utterances. Delicate alterations were made in some instances in order to improve readability. Some contextual cues from the prior discussion were added, when necessary, to improve understandability. The results concerning the sequences in which the group talked about videotaping the sessions are presented in this chapter. The statements concerning meta-talk are presented in the results (chapter 7.3.2.).

There were 9 episodes (in 8 different group sessions) in which the group members talked about being videotaped. The groups had already discussed the videotaping in the previous session, during which they had been informed of this research project. In the recorded sessions there were, however, two students who had not been present in the information session. These students wanted to know how the tapes would be used, and the supervisors explained them the confidentiality of this research material (see chapter 6.2).

The groups were given an option to stop the videotaping at any point of the discussion. There was discussion about whether to stop the taping in two groups, but in both cases the camera was left on. Some technical issues concerning videotaping puzzled the participants. One group needed to sit more closely to each other than normally in the recorded session in order to fit in the view of the camera. The other group, which was asked to have their meeting in the videoroom due to technical arrangements, commented that the room was not as convenient as the one they used normally. The camera behind a mirror raised questions at the beginning of one group session. The excitement of videotaping showed in these topical sequences: the students laughed, giggled and talked

at the same time. Even the one student who expressed some reluctance about being videotaped participated in the discussion in a seemingly normal fashion.

One of the groups (Susanne I) was asked to comment on the effect of the camera after the session. The participants said that they were aware of the camera at the beginning of the session, but as the discussion got more intense, they forgot about the camera. The students felt that the situation had been pleasant and the discussion open, and videotaping did not stop students from discussing even very personal matters.

5.3.2 Reflection sheets

Another, longitudinal, perspective on reflection group work was gained by feedback questionnaires from one group.

Data collection. The reflection sheet data were used to reconstruct the longitudinal sequence of the topics of conversation covered during the lifespan of one reflection group. The participants and the supervisor in James' group were asked to fill in a short questionnaire after each session. The respondents were asked to state 1) which themes of the discussion they had considered most important, 2) what kind of ideas or new insights they had got during the session and 3) whether there was something they would have liked to say, but could not during the session, and 4) to offer suggestions how this activity could be improved.

James' group consisted of 9 female students. Most of the participants were in their 4th academic year when the group started, a 2 students were already in their 5th academic year. The group met once a month during one and a half years (1/1997- 5/1998), i.e. altogether 12 times (four times each semester). The filling of the reflection sheets was forgotten after one session. The numbers of participants (including the supervisor) in the meetings were a follows: 9,9,8,9,6,-,8,8,5,5,5,4. The number of participants in the sessions remained stable during the spring 1997, declined slightly in the autumn 1997, and dropped further during the spring 1998. One of the possible explanations for the decline is that the students had the health care center training periods that spring (two weeks in 5 different periods), during which part of the students were situated all around northern Finland and were thus unable to participate. However, it is also possible that part of the students just did not feel the need to continue.

For the analysis of the reflection sheet data, each session was named according to the most important theme arising from the reflection sheet answers (such as Death). The answers were written down word for word. The core sentences were extracted from the answers, and care was taken to use the same words that were used in the reflection sheets. Some delicate modifications were made in the language to form an understandable whole of all the issues the participants mentioned. An example of the core content of the reflection sheet answers concerning one group discussion:

II/97   Death   The discussion centered on how to deal with death. The students felt it was good to talk about the feelings that had arisen during the pathology and forensic medicine courses. The more specific topics of the discussion were: respecting the diseased, encountering a dying patient or his or her relatives and respecting the living patients.

The answers were compared between the sessions to see if there were some recurrent themes, and with the present stage of the studies according to the curriculum to see how contemporary the topics of discussion were (see chapter 7.3.3.).

The answers to the question of whether something was not mentioned were classified into two categories: 1) too little time to discuss the topics thoroughly, and 2) specific matters. The answers to the questions concerning suggestions for improving the reflection group activity were categorized and presented as tables. These answers were compared to the ideas that had arisen in the meta-talk sections of the videotaped group discussions.

5.3.3 Interview data

The third perspective towards medical students' reflection groups was gained by interviewing the supervisors.

Supervisors. The supervisors' backgrounds and previous experience are presented in Table 23. All of the supervisors of the student reflection groups either had a background in family therapy or had attended a 2-year Balint supervisor training course.

Table 23. Supervisors' background and previous experience of supervision.

Supervisor	Richard	Susan	James	Tom	Vicky
Background	Group psychotherapy, family therapy	Family therapy	2-year Balint supervisor training	Analytical & family psychotherapy	2-year Balint supervisor training
Previous supervision experience	With doctors and other professional groups in health care	With doctors	With doctors and with men's' groups	With doctors and other professional groups in health care	With psychiatry residents

Interviewing. All the group supervisors (n=5) were interviewed during the spring 1998 using a semi-structured approach (Hirsjärvi & Hurme 1991, Mishler 1986, Patton 1990). However, when Susan (same person as Susanne) began with the new group in spring 1999, she was not interviewed again. The supervisors were interviewed about: 1) their background and previous experience of supervision, 2) their perceptions about their own reflection groups and 3) their views concerning reflection groups generally. They were also asked whether they had any suggestions on how to improve the reflection group

activity. The agenda of the interviews is presented in Appendix 3. The interviews were conducted in each supervisor's own room, trying to avoid any disturbances, and recorded on normal C60 audiotapes. Each interview lasted for 30-60 minutes. The atmosphere in the interviews was quite informal and relaxed. The telephone rang once during one interview, but there were no other interruptions.

Transcription. I transcribed the interviews personally word for word using the same transcription notation as in the transcription of the video material.

Analysis of the interviews. A phenomenographical approach (Marton 1981, Simoila, 1993) was used to analyze of the supervisors' interviews concerning reflection group activity. The core sentences of each answer were extracted and written down in tables to enable comparisons between the supervisors. The supervisors' answers were also compared to the meta-talk sections of the videotaped group discussions and the reflection sheets.

5.4 Narratives and medical education

Medical students' narratives were analyzed from the videotaped reflection group discussions in order to develop more detailed understanding of the critical experiences students encounter during undergraduate medical education.

5.4.1 Structural analysis

Identifying the narratives. During the initial phase of analysis, the transcripts were read through several times. The first step of narrative analysis was to identify and mark the narrative sequences of the conversation. The definition of 'narrative' was borrowed from Kohler-Riessman (1993), and sequences of conversation in which the participant(s) told 1) a story of a particular event or a situation, 2) which contained a narrative structure (a plot) with a beginning, a middle and an end, and 3) which were detachable from the conversation, were looked for. The narratives were marked in the content log, and the parts identifiable as *introduction* (indication that the person is going to tell a story), *story* (setting, participants, events) and *evaluation* (the narrator's attitude towards the story) were defined in each of them. Below, the words 'narrative' and 'story' are used as synonyms. The narratives were named in a way that would describe what the story was about and numbered sequentially within each conversation. (see Table 24). The stories told by the supervisor were also marked.

Taulukko 24. Esimerkki narratiivien merkitsemisestä, nimeämisestä ja numeroimisesta. Jamesin ryhmä, videonauha III, Narratiivi 5: Potilaalta saatu palaute.

	Puheenvuoron koodi ja sisältö	Huomiot
*	*J3*m96: … kävin siinä neurologisen statuksen sille tekemässä mutta en sitten enää (.) muistanut koko asiaa (.) ett olisin käynyt siellä (5) se oli siellä osastolla eikä lähtenyt kottiin (2) (---) mulla tuli vaan tosta mieleen ett mulla oli niinku yks potilas semmonen joka aina joka (---) varsinaisesti kehu mua ett niinku nyt viikonloppuna niin en mää niinku siitä kyllä mitenkään kunnianosoituksia tai mitään ku se oli semmonen ett mulla oli kauheesti aikaa niin sitten (.) niinku se tuli jonkun muun asian takia sit se kerto kuinka sillä on astma ja mitä niinku siihen kuuluu ja sellasta niin sitten se vaan (.) niinku istuin ja kuuntelin (.) ett (---) niinku ett ku oli niin hyvä ja rauhallinen lääkäri pitää vielä kertoo tossa odotushuoneessakin kaikille (naurua) tavallaan siltä oli musta tavallaan turhaakin ett ei mun mielestä välttämättä mun mielest niinku tarvii (1) (kuiskaten) en tiiä sitten	Intro Tarina 5: Potilaalta saatu palaute Evaluaatio

Table 24. Example of indexing, naming and numbering narratives. James' group, videotape III, Narrative 5: Feedback from a patient.

	Turn code and content	Notes
*	J3m96: … I went and did a neurological status to him but then I didn't (.) remember the whole thing (.) that I should have visited him (5) he was there at the ward and didn't go home (2) (---) it came to my mind from this that I had one patient who always (---) really praised me so that now during the weekend I well no honors or anything 'cause it was so that I had an awful lot of time and then (.) so she came because of some other thing and then told that she had asthma and what that means and so and then she (.) I just sat and listened (.) that (---) that how this was a good and peaceful doctor (.) have to tell everyone in the waiting room also (laughter) in a way it was I think sort of unnecessary that you don't need to in my opinion (1) (whispering) I don't know	Introduction Story 5: Feedback from a patient Evaluation

Structural analysis. Narratives were considered to be 1) *complete* if they contained an introduction, a story and an evaluation, 2) *incomplete* if they lacked an evaluation.

> An example of an incomplete narrative: *This story was told by a 5th year medical student who had spent her first two weeks in a health care center and is pondering the experience:*

> Christa: … I don't remember ever having had such tough two weeks as those two were, had to be on the alert all the time and felt that you aren't, aren't even enough for the job // I had oh 20 -30 minutes to get into things, so well, at times I felt they held me as some kind of a medicine man, that people came to a total stranger and explained all the things between heaven and earth (laughter)

Further, it was noted whether the narratives were told as *a continuation to another story* told earlier on in the conversation, and whether many of the narratives *contained a dilemma* (explained in detail in chapter 5.5).

Since the reflection groups aimed to be student-centered, it was considered interesting to determine *how actively the students and the supervisor participated* in producing narratives. Additionally, attention was paid to whether the narratives were told by one person or if there were some that were told jointly by two or more of the participants. The criteria for identifying *a jointly told narrative* were that both contributed significantly to the production of the narrative by, for example, asking questions or offering information. Very short comments, such as "yes", "no" or "mmm", were not enough to qualify as participation in a jointly told story.

> Example of a jointly told story: *This story was told by two 4th year medical students recalling the first time they had to do post mortem at the Department of Forensic Medicine.*

> Sarah: it was exciting when we had to make the post mortem and we had naturally hoped that there would be someone who had died a natural death at home (.) and was found so we would not need see anything horrible and we went there with Pauline and (.) then there was this guy that had shot and hung himself (.) young (.) our age who (---)
> Katherine: (---) mentioned that it must have been the worst case during this spring
> Sarah: really (.) yeah then we examined him…

Next, there was an interest to find out *how personally or distantly* the narratives were told. For this purpose, attention was paid to whether the narrative was about a personal experience (indexed in the first person with "I" or "we"), or whether it was about another person's experience (indexed in third person "he", "she", "they", or in the passive mode). Then, the stories were categorized according to *the role perspective* it was told from 1) *lay* (narrative from everyday experience), 2) *student* (narrative from medical school experience) or 3) *medical* (narrative from working experience, by either a supervisor or a student).

In the next phase, *the topics that stimulated the participants to tell many narratives* were defined. In order to do this, the numbers of narratives in each topical sequence were counted. The topical sequences that contained more than 3 narratives (*narrative-intensive*

topical sequence) were listed and sorted according to the academic year of the participants. Similar narratives told in different groups were looked for, and comparisons were made to see if the topics of narrative-intensive topical sequences changed as the medical education proceeded. Finally, it was noted how the narratives were situated within a topical sequence, and whether there were similarities between the stories that initiated (provoked elaboration on a certain topic) or ended (stopped) the conversation.

5.4.2 Substantive analysis

The substantive data analysis was conducted by categorizing the narratives according to the perspectives of the professional socialization process (Becker *et al.* 1963) and the types of critical experience (Vasilyuk 1988).

Categories of professional socialization. The perspectives of professional socialization presented by Becker *et al.* (1963) were used in the substantive analysis of the narratives. Sinclair (1997) used dispositions based on the perspectives outlined by Becker and the colleagues. The original perspectives were chosen because dispositions are often understood as rather permanent, individual properties, whereas perspectives are socially constructed and can be changed according to the situation. The original perspectives and the modifications of the definitions used in this research are presented in Table 25.

Table 25. Perspectives of socialization according to Becker et al. (1963), interpretation used in this research, and criteria of categorization.

Perspective of socialization	Definition of Becker et al. (1963)	Interpretation used in this research	Criteria of categorization
Clinical experience	Practical knowledge "Learning by listening, observing and experiencing"	Practical knowledge, investigative action	Experiences during medical training, including interaction situations and narratives by supervisors
Status	Medical student's position in hierarchy "Gaining medical status gradually during the training"	Different roles of students have in relations to socializers	Includes narratives by students in different roles
Idealism	Towards learning medicine "Aim to become an ideal doctor"	Towards learning and practising medicine	Includes narratives of everyday experience and common sense
Medical responsibility	Practical knowledge "Learning by doing"	Practical knowledge, therapeutic action	Includes situations in which students perform actions, e.g. procedures on patients
Knowledge	Theoretical knowledge "Learning by listening lectures and reading books"	Theoretical knowledge	Includes what medical students "should know", theoretical vs. practical knowledge
Academic	Relations to the faculty "Ways to make a good impression on the faculty"	Relations to the faculty	Includes doing research
Co-operation	With peers "Helping each other to learn"	With peer or other doctors	Excluding communication situations
Competition	With peers "Ways to be better than others"	With peer	Includes competition for getting a job
Economic	Concerning learning "Ways to cope with all information"	Concerning learning	Includes ways to study for exams

Categories of critical experiences. In order to analyze the different types of meaningful experiences during medical education, the categories of critical situations presented by Vasilyuk (1988) were applied. He differentiated between four types of critical situations: 1) *Stress* (any non-specific demand with which a person is unable to cope with), 2) *Frustration* (a strong motivation to act, but an obstacle prevents the action), 3) *Conflict* (the actor has two or more simultaneous motives), 4) *Crisis* (a

situation after which it is impossible to act as before). Examples of narratives placed in each category are presented in Table 26.

Table 26. Examples of narrative categorization according to critical experiences (Vasilyuk 1988).

Category of critical experience	A short example of a narrative
Stress	A medical student being afraid of having ovarian cancer during the pathology course
Frustration	A student trying, unsuccessfully, to perform a procedure on a patient
Conflict	A student wondering whether or not to read the gynecological medical history of a patient she knew at high school
Crisis	A medical student's story of her father's sudden death

In sorting the narratives, emotionally disturbing experiences during medical education that did not fulfill the criteria of the other categories, such narratives of autopsies or the death of a patient, were included in the *Stress* category. The *Frustration* category contained narratives of the student doing his or her best and still failing or getting negative feedback. The narratives placed in the *Conflict* category entailed a dilemma or choice between two or more expressed options. The *Crisis* category included narratives about such topics as a relative's death or one's own chronic illness. There were also some narratives of pleasant, positive experiences, which were marked with + in front of the corresponding category. For example, a story about an impending conflict which was solved in a satisfying manner was categorized as "+ *Conflict*".

After sorting the narratives in these two categories, cross-tabulation was used to combine the results (see Table 27).

Table 27. Cross-tabulation of narrative categories according to the socialization perspectives (Becker 1963) and critical experiences (Vasilyuk 1988).

Critical events/ Socialization perspectives	Stress	Frustration	Conflict	Crisis
Clinical experience				
Status				
Idealism				
Responsibility				
Knowledge				
Academic				
Co-operation				
Competition				
Economic				

The inter-rater reliability of both categorizations was verified. Another researcher was given instructions to categorize independently 16 narratives (13%) of the data. Three of the examples were of positive experiences. The statistical software used was SPSS-X (Norusis 1995). The value of Cohen's Kappa (Cohen 1960) was 0.55 for Becker's socialization perspectives and 0.92 forVasilyuk's critical experiences. According to Altman (1991), these values are moderate concerning the socialization perspectives and almost perfect concerning the critical events.

There were 5 narratives that needed to be discussed in detail concerning categorization based on Becker's perspectives. The disagreement between the two observers was solved in three cases by providing more information of the context of the conversation in which the narrative was told. In two cases, the narrative had to be re-categorized: 1) from *Clinical Experience* to *Responsibility* (action performed by a student in a teaching situation), and 2) from *Clinical Experience* to *Status* (the medical student's role in the clinical situation was emphasized by the narrator). All the narratives in the *Clinical Experience* category were re-categorized accordingly.

Concerning Vasiluk's categorization, the placement of one narrative needed to be negotiated between the categories of *Frustration and Conflict*. This narrative was about a medical student performing an unsuccessful procedure on a patient under supervision by a teacher. This narrative contained both an implicit conflict between need to learn and concern about the patient as well as expressed frustration about the fact that the student had done everything according to the teacher's advice of the teacher and still failed. In this example, the feeling of disappointment was highlighted by the narrator, and it was thus placed in the category of *Frustration*.

The results of the substantive analysis, i.e. the titles of the example narratives in each category containing at least 3 narratives, are presented in chapter 7.4.2. The examples presented were chosen so that they include students' narratives from all groups and all tapes and different types of narratives from different situations. Finally, the students' personally told narratives about the university hospital learning situations were looked at in more detail, since they were especially interesting concerning physicians' professional development. For the purpose of presenting examples of these stories, core narratives were formed by eliminating unnecessary repetitions, hesitations, etc. Discreet linguistic modifications were made to improve readability on some occasions.

5.5 Dilemmas and professional identity

Medical students' dilemmas were analyzed from the videotaped reflection group discussions in order to find out what kind of problem situations medical students have to deal with during undergraduate medical education. The data analysis was two-directional (Engeström, 1995). Firstly, inductive, data-driven analysis (Grönfors 1982) was used to identify the structural elements of the data and to form categories and subcategories according to the topics that emerged from the data. Secondly, deductive, theory-driven

analysis (Grönfors 1982) was used to outline the process of constructing professional identity in medicine.

5.5.1 Inductive data analysis

Identifying dilemmas. For the purpose of identifying dilemmas in the data, I read through the transcripts of the videotaped group discussions several times. Dilemmas were operationalized as problems introduced for discussion. In the data, dilemmas were presented as 1) a student's question concerning a certain issue or 2) a statement or an utterance(s) entailing hesitation, reservation, pondering between two options or conflicting arguments. The dilemmas were numbered with sequentially within each session and marked in the content log (see Table 28).

Taulukko 28. Esimerkki sisältöluettelosta Tom I ryhmästä: ilmaisu, joka sisältää epäröintiä.

Puheenvuoron koodi ja sisältö	Huomiot
T1ken12: tota niinni se mitä mää oon nytte mikä mitä mä oon niinku ajatellut niin on varmaan se että tota että se nyt kuuluu tähän opiskeluun ja se on sillä siisti että sen sitten ohittaa tällä tavalla näin (.) että ehkä sitä ehkä sitä tosiaan pitäis joskus vähän ehkä muutenkin muutenkin pystyy ymmärtää tai tällä tavalla näin ja sitte toiseksi kans että jos niinku jos vähän ne saattaa tietenkin liittyä toisiinsa ne asiat että jos (.) jos vähän niinku epäröi sitä että tota noinni (.) että *kuinka tämä lääkäri (.) ja lääkärinammatti sitte on se oma ammatti* niin tota noinni (.) että kuinka sitä sitte jaksaa ajatella sitäkään sillä tavalla osana opiskelua että ku ei ehkä kiinnosta se valmistuminenkaan sit välttämättä että (1)	Dilemma 4: I "Kuinka tämä lääkärin ammatti on se oma ammatti?" II URAVALINTA

Table 28. Example of the content log from group Tom I; an utterance entailing hesitation.

Turn code and content	Notes
T1ken12: well that what I have now what I have now thought about is surely that it belongs to studying and it is like that that you just let it pass like this (.) that maybe one maybe one really should sometimes a little and maybe otherwise also be able to understand this way and secondly also that if well if they can be related to one another those things that if (.) if one well has doubts that well (.) that *is this doctor (.) doctor's profession one's own profession* so well (.) that how can one think of it in a way as part of the studying that as one might not necessarily be interested in graduating either so (1)	Dilemma 4: I "Is this doctor's profession one's own profession" II CAREER CHOICE

Structural analysis. At first, it was noted whether there were some topics that the students needed to elaborate more than others. For this purpose, the topical sequences that entailed at least three dilemmas were identified, and labelled as "dilemma-intensive topical sequences". These sequences were then organized according to the academic year of the participants.

Next, the dilemmas were extracted from the data for further analysis. The student's or supervisor's authentic expression was written in quotation marks, and categorization was marked under the original utterance with capital letters. If the original expression was long or contained a lot of hesitation, the dilemma was paraphrased adequately (as a question or a statement), and this interpretation was not placed in quotation marks.

Two examples of the categorization of dilemmas:

1) "Kuinka paljon sitä saa olla semmonen lohduttava ihminen eikä vaan se lääkäri?"
EMPATIA - ETÄISYYS

"How much is one allowed to be a comforting person and not just a doctor?"
EMPATHY - DISTANCING

2) Kuinka voi auttaa lääkkeiden väärinkäyttäjää?
BIOLÄÄKETIETEELLINEN – PSYKOSOSIAALINEN HOITO

How can one help a drug abuser?
BIOMEDICAL – PSYCHOSOCIAL CARE

Then, since the aim was to define the dilemmas that are important for the construction of the professional identity of a physician, the dilemmas were grouped into preliminary categories based on similarity. After repeated rounds of reading, the following categories (and subcategories) emerged:

1) *Career choice*
2) *Career* (career in general, research or clinical work, competition in applying for jobs, career and family, career and life)
3) *Medical education* (theoretical and practical knowledge, idealism, encountering death, controlling ones' feeling, student's role in teaching situations, confidentiality, "candidate's disease", biomedical or psychosocial aspect of teaching)
4) *Different roles* (medical student's role, candidate's role and relatives, gender roles, preparing oneself for the role of a physician, doctor as a patient)
5) *Doctors' work* (time management in general, time management and working arrangements, ethical dilemmas, biomedical or psychosocial care, encountering death, prioritization, unsafety at work)
6) *Professionality* (empathy and distancing, touching)
7) *Communication skills* (telling bad news to the relatives/patient, specialist consultations, negotiation situations with patients/nurses, health promotion).

In some cases, special decisions concerning the categorization and placement of dilemmas had to be made. The categories of career choice and career were kept separate. Theoretical and practical knowledge also included dilemmas concerning specifically either knowledge or experience. The subcategory of student's role in teaching situations entailed dilemmas concerning learning situations involving a teacher, a patient and students, such as ward rounds, where students occasionally saw that the patient was not treated well, but could not do anything about it. These dilemmas could also have been placed under communication skills or different roles (candidate's position), but they were eventually left under medical education. The dilemmas concerning biomedical and psychosocial issues were classified separately according to whether they occurred in medical education or in working life, and there were also two categories for encountering death. Doctor as a patient was at first a separate category, but it was later decided that it could be included under different roles. Similarly, the category of ethics was at first independent, but was later included under doctor's work. Telling bad news included dilemmas concerning the need to tell about possible death or a diagnosis or prognosis of a chronic illness to a patient or the relatives. The category of specialist consultations included dilemmas in doctors' mutual relations, and negotiations entailed dilemmas in co-operation with patients and nurses.

The inter-rater reliability of classification was verified by using two observers to categorize 26 examples (20%) of the data. The value of Cohen's Kappa (Cohen 1960) was 0.78. According to Altman (1991), this value of reliability is substantial. Three of the cases had to be discussed more thoroughly. After negotiation, all examples remained in their original categories.

After categorization, it was noted whether there were some dilemmas that persisted through out the medical programme, i.e. occurred during both the pre-clinical and clinical phases. The repeated dilemma topics and examples of questions in each phase presented by students were collected.

5.5.2 Deductive data analysis

Perspectives and activity systems. Further analysis of the dilemmas aimed to connect the data to the theoretical framework of the cultural historical activity theory. Each dilemma was marked according to the role perspective (lay, student or medical) it was told from. During the process of analysis, a model of three different activity systems was discovered: *"Personal life"* (dilemmas from the lay perspective), *"Medical education"* (dilemmas from student perspective) and *"Work"* (dilemmas from medical perspective). The dilemmas that seemed to include two or three of these perspectives were named *"Preparing for physician's role"* and placed at the intersection of the three activity systems. Finally, a figure modeling the contradictions in constructing a physician's professional identity, based on the content of the dilemmas within each activity system, was formed. These findings are described in detail in chapter 7.5.2.

Processing of the dilemmas. Next, the dilemmas were looked at again in their original context within the conversation, in order to find out how they were processed in the discussion and what kind of solutions, if any, the participants suggested. The solutions were sorted into the following categories: 1) *expansive comment* (any attempt in the direction of solving the problem, suggesting a new approach or a new way of thinking or acting), 2) *critical comment* (stating that something is not good, but giving no suggestions on improvement, 3) *comment stating a fact or a belief* (not taking an attitude for or against, no suggestions of improvement, 4) *no processing* (there was no solution suggested, no comments on the dilemma) (for an example of categorization, see table 29.).

Table 29. Examples of the types of processing dilemmas.

Type of processing	Dilemma	Comment
Expansive comment	A patient began to cry during the ward round, none of the team said anything.	"One should go and say something to the patient"
Critical comment	"A patient asked me whether she had multiple sclerosis, and I was not allowed to tell her"	"It is not fair, not to tell her"
Comment stating a fact or a belief	"They told us not to go and talk about this (autopsy) with outsiders".	"It is not proper to discuss these things"
No processing	"I wonder if a doctor's career is right for me".	-

6 Research process, researcher's roles and ethical issues

6.1 Research process and researcher's roles

Below, I will briefly describe my professional background, to give an overview of the different perspectives that have influenced my thinking during this research process. The research process and the researcher's roles are described in Table 30.

Table 30. Research process and researcher's roles.

Year(s)	Research process	Researcher's roles
1994	Beginning of reflection group activity	Medical student, member of a reflection group
1996	Planning of the research	Medical doctor, graduate student
1996-1999	Data collection	Medical doctor, graduate student, family therapy trainee
1998-2000	Data analysis	Researcher, rehabilitation doctor, project manager of curriculum development at the medical faculty of Oulu
2001	Reporting of the results	Researcher, rehabilitation doctor, project manager of curriculum development at the medical faculty of Oulu

Medical student. I studied medicine in the medical faculty of the University of Oulu during 1989-1996. During my clinical studies, I got involved with student activities and was appointed chair of the medical students' union at the medical faculty in 1993. At that time, the reform of the medical curriculum was going on, and I was involved in the process as a student representative in the "5th year planning committee". During the year as the chair of the medical students' committee, I got interested in medical students' well-being issues and contacted the Department of Psychiatry, asking for help in organizing some kind of a possibility for medical students to discuss the experiences they encountered during the clinical years. As a result of this contact, the first two reflection groups were founded. During my medical undergraduate studies, I also got some international perspectives into medical education while working in the International

Federation of Medical Students' Associations (IFMSA) as a member of the Standing Committee on Medical Education (SCOME) during 1993-1996, and as the chair of that committee in 1996-1997. During these years, I had a chance to get an insight into what was happening in the field of medical education worldwide.

Member of a reflection group. I was one of the participants in the first reflection group. There are two videotapes in which I appear in the research data. The first videotape (Richard I) was taken by the group supervisor before this research had even been planned. When the second videotape (Richard II) was taken, I was in the phase of planning this research. Thus, in the first tape I appear in the role of a participant and in the second in the dual role of both a participant and a novice researcher. Initially, these two tapes were not supposed to be included in the research data. However, by the end of the data collection period, I came to the conclusion that it was important also to include these tapes into the analysis. These tapes gave me a mirror for reflecting on how my own thinking had changed and served as a reminder of what it was like to attend a group and how it felt when the discussion was videotaped.

Medical doctor. I graduated in 1996, and since then I have had working experience in primary care, psychiatry and rehabilitation alongside with my work as a researcher. These experiences have also given me new perspectives into doctor's identity.

Graduate student. After graduation, I attended the doctoral programme in educational sciences at the Center for Activity Theory and Developmental Work Research in the University of Helsinki during 1997-1999. I adopted the cultural-historical activity theory as a framework for this research.

Family therapy trainee. The family therapy training that I attended at the Department of Psychiatry, University of Oulu, during 1996-2000 gave me further views of professional development. Especially the theoretical considerations concerning general systems theory and constructionist conceptions on self and identity have influenced this work.

Project manager of curriculum development at the faculty of medicine. Since the beginning of the year 2000, I have worked at the faculty of medicine as a project manager responsible for planning medical education. This job has offered me an insight into medical education from the teacher's and administrator's perspective.

Researcher. Throughout the research process, I have had a decisive role in planning the research, in data collection and analysis as well as in writing.

There have been certain pros and cons of me appearing in both as part of the data and as a researcher. I consider it an advantage to be of approximately the same age and having the same basic education as the students whom I study, because that has given me pre-understanding of both medical education and reflection groups. There was, however, the disadvantage that, right after graduation, I was too close to the data and found it impossible to begin the analysis of the tapes right away, thinking I might pay too much

attention to the issues personally important to me and neglect the views of the other participants in the reflection groups. After getting some distance and new perspectives while working as a doctor, reflecting on my personal interests during the family therapy training and reading literature, I found the interpretative process easier.

By re-viewing the videotapes on which I appeared and by reading through my research diary, I discovered some significant changes in my thinking during the years of this research process. I noted, after two years of graduation, that I had almost forgotten the problems I had encountered as a medical student. Gradually, the focus of my concerns had changed from how patients are being treated to doctors' well-being issues. My main concern was how one could help future physicians during medical education to construct a professional identity that they could be satisfied with. I found that the temporal distance helped me to analyze my own concerns in the data as anyone else's. In reporting, I tried to explain as carefully as possible what I have done, in order to give the reader a possibility to make his or her own interpretations.

6.2 Ethical considerations

On the whole, I find it ethically important to evaluate and improve medical education. However, there are numerous ethical aspects to be considered in this type of research. The Ethics Review Committee of the Medical Faculty in the University of Oulu reviewed and approved the research design on 7 Oct. 1996, before the main phase of the data collection began.

Concerning the questionnaire data, all the participants were informed of the nature of the study (information orally for all the classes and in writing in each questionnaire), and the voluntary nature of participation. By returning the questionnaire, the participants gave their consent for the data to be used for research purposes.

In conventional quantitative research, it is comparatively easy to assure the participants that they will remain anonymous and that the data they allow us to collect will remain confidential. With video tapes, the issue is more delicate, especially in view of the confidential nature of the sessions analyzed in this study. The problems implicit in video work revolve around making the tape, analyzing it, presenting the results of analysis and non-research uses of the taped material. (Jordan & Henderson 1994). Concerning the videotaping, the participants were explained the nature of this study and given an information sheet of the research process. The students were informed that participation in this study (participating in the sessions that were videotaped and filling in the questionnaires) was voluntary. All the participants appearing on the videotapes have signed the consent forms to allow the data to be used for research purposes. Before recording the sessions, the participants were asked for a permission to do the recording. The groups that gave their permission in the same session before beginning of the taping had a possibility to stop the taping at any point they wished. There were, however, two students who were not present in the information session, but came to the recorded session. Consent was asked from both of them after the recorded session. Another exception were the members of my own group (Richard I), from whom oral consent was

obtained before the taping, but who only signed the written consent forms later, when it became evident that the tapes were essential for the analysis. One of the participants wanted that her utterances would not be included as examples when reporting the results, and this wish was respected.

In analyzing the data, I have tried to be as precise as possible in order to avoid misinterpretations. The transcriptions were checked very carefully after the initial transcription by reviewing the discussion from the videotape. The data were transcribed and first analyzed as a whole conversation in order to understand the context of the utterances. Only in the phase of detailed analysis and reporting, were the narratives and dilemmas extracted from the conversation. The interpretations were again viewed in the wider context of the whole conversation at the end of the analysis.

Since the focus of this study was the content of the conversation rather than the detailed form in which the issues were presented, I re-transcribed the examples in a simplified format by removing the unnecessary hesitations and so on, to improve understandability at the reporting phase. I was careful to use the same words as the original speaker and made an effort to include everything important.

The confidentiality of the data was taken into consideration at all phases of the research; the original data (questionnaires, audio- and videotapes), the transcribed data files and the printouts of the research transcript were stored so that outsiders could not get access to them. The data were used only for the purposes of this research, and only the researcher and her supervisors were allowed access to the original collected material. The participants were given a promise that the data would not be used for teaching purposes and no copies would be released without further consent. In analyzing the data, the anonymity of the participants was ensured by removing the identification markers. The participants were offered a chance to review all the material concerning themselves as well as the interpretations made of it.

7 Results

7.1 Medical students' perceptions of medical education

7.1.1 Students' opinions of studying medicine

Expectations concerning medical education. Undergraduate medical education met quite well the students' expectations, and 91% of the respondents said they would choose medicine again if they were to make the career choice at the moment. However, 27 % of the 5th year students said they would not choose medicine again. This figure was significantly higher than those for the younger students (1st year 6 % and 3rd year 8 %, p=0.01). When the genders were assessed separately, this difference remained significant for female students (p=0.007), but not for males (p=0.84). Of the females, 11% reported that they would not begin to study medicine again compared to 4 % of the male students.

Motivation to study. The motivation to study was reported to be very high by 23%, fairly high by 61%, and low by 16% of the respondents. Of the males, 16% reported decreased motivation, compared to 27 % of the females. Motivation was markedly decreased compared to the time when the students started their studies in the 2nd year (34% of the respondents), in 3rd year (29%), in the 4th year (18%), and in the 5th year (24%) students. This difference remained statistically significant for female students (p=0.001), but not for males (p=0.16).

Perceived stress. Studying was considered too stressful mentally by 38% of the 3rd year and 33% of the 5th year students (mean 20% of the respondents, p=0.002). The significance remained for female respondents (p=0.03) and for males (p=0.05), when the genders were assessed separately. The findings were similar concerning the differences between the courses when we asked whether the pace of studying was hard, but this time the difference remained for male students (p=0.025), but not for females (p=0.86). Most of the respondents (64%), however, felt the pace of their studies to be reasonable and said that they had enough time for themselves (70%) and their friends (58%) and hobbies

(63%). Almost two fifths (37%) of the respondents felt that they could influence the pace of their studies and 16% felt they could influence the content of their studies.

7.1.2 Critical experiences in medical education

When inquired about the meaningful moments in medical education, students were asked to describe briefly the best and the worst experience during their medical education. Altogether 167 students responded to one of these open-ended questions. Of the students that answered either of the questions, 70% were female and 30% male. 11% of the respondents answered only one of the questions. There were 148 answers (19 students did not answer) to the question concerning the best experiences during medical education. Of the ones who answered, 103 were female and 45 male. Of all respondents, 149 described their worst experience during medical education (18 students did not answer). Of the ones who answered, 105 were female and 44 male. The distribution of the answers to each of the questions is presented in the Tables 31 and 32.

7.1.2.1 Best experiences during medical education

The quantitative results of the content analysis of the best experiences reported by medical students are presented in Table 31.

Table 31. Summary of the answers to the question: "Describe briefly the best teaching situation or a patient encounter that you have experienced during your medical education".

Best experiences	No. of responses	Female/male	Academic year 1	2	3	4	5
Teaching situation	61	41 / 20	14	17	7	9	14
- in general	11	5 / 6	4	1	1	1	4
- small groups	12	8 / 4	2	8	-	1	1
- visit to health care centers	19	13 / 6	7	7	-	2	2
- medical procedures	20	14 / 6	1	1	6	6	6
Patient encounter	60	44 /16	-	2	18	26	14
- student-patient relationship	41	30 /11	-	2	12	17	10
- feedback from patient	19	14 / 5	-	-	6	9	4
Teacher's attitude towards students	9	8 / 1	1	1	-	6	1
Teacher's attitude towards patients	8	7 / 1	-	-	-	1	7
None/ cannot remember	9	4 / 5	2	1	2	2	2
Total	148	103/45					

Teaching situation. Some of the responses concerning the best teaching experiences were quite general in nature, such as the lectures during the public health and general practice course, dissections, ward rounds, "ward service", internships, days at the pediatric outpatient ward. Concerning small group teaching, especially the preclinical students reported the best situations to have been the ones in which students had a chance to do some experiments or to examine each other.

> "Pharmacology small group teaching, in which we took some drugs ourselves (Diazepam, Caffeine…)" - Male, 2nd year

> "Until now, the nicest (experiences) have been the small group assignments in anatomy, especially the time when we got to draw blood from our class mates" -Female, 1st year

The health care center visits, including early patient contacts, during the preclinical period were often reported to have been, on the whole, positive. The answers especially highlighted home visits to the elderly and the doctors' positive attitude.

"On the whole, the health care center training was a positive experience, young doctor – the definition sounded good to my ears…" -Female, 1st year

"Home visits to the elderly during the general practice course" -Female, 2nd year

"Health care center training: really nice and helpful doctors…" -Female, 2nd year

For many respondents, successful medical procedures were the best experience encountered. Various procedures were mentioned, such as drawing blood or starting an intravenous line, performing maxillary puncture, suturing wounds, giving injections, taking arterial Astrup, spinal tab or blood marrow samples as well as teaching in the day-surgery department. For students, it was good to get to do something, to do it right and to get feedback on the performance.

"I got an i.v. started on an old lady who had fragile veins. A feeling of success." -Female, 4th year

"A successful paracentesis or maxillary puncture, small surgical operations, suturing and joint injections in the health care center training. The collegial attitude of the teachers in general medicine and oto-rhino-laryngology towards me." -Male, 5th year

"My first try on taking a spinal tab, which succeeded perfectly, and the teacher's comment: "That went well, you have apparently done these before!" -Female, 5th year

Patient encounter. Patient encounters added up for many clinical students as the best experience during medical education. The following kinds of experiences were mentioned: the student felt, after discussing with the patient, that (s)he had achieved consensus with the patient, or the student had been able to help the patient by informing or reassuring him or her. Some reported that encountering open and co-operative patients increased students' confidence. Especially situations where students got positive feedback from patients were highly valued. The first delivery was mentioned quite frequently as the best experience.

"The first patient that I examined happened to be a teacher, and his attitude towards the student (=me) who came to examine him was very positive. A really encouraging experience" -Female, 3rd year

"In the health care center training I and a friend of mine examined a young flu patient. I thought that the patient and the mother would get "impatient" when we used mirrors and checked every place and it took so much time. When they were leaving, however, the mother thanked us very much for examining her child so carefully. For once, did the doctors have time…" -Female, 4th year

"At the neurology clinic, a demented patient sang Russian folk songs in Russian, and did it very well." -Male, 4th year

"On a Friday evening, after a sleepless night and an exam, I went to examine a patient that wasn't very delighted. For some reason, however, our meeting developed to be really nice, and we got to the same wavelength." -Female, 5th year.

"A 95-year-old formal vicar thanked me for the examination and commented that I will be a good doctor" -Female, 5th year

"Being present at the first delivery was a wonderful experience. The feeling was increased by the parents' grateful and encouraging comments for being present at the delivery." -Female, 4th year

Teacher's attitudes towards students. A few respondents evaluated situations where the teacher had had a positive attitude towards teaching and the students as the best event encountered. Some mentioned that every teaching situation in which the teacher has really taught the student has been nice. Positive feedback from teachers and patients was valued, as were also versatile teaching methods and humor.

"Small group instruction with a nice teacher-physician encouraging and teaching us, without forgetting humor" -Male, 5th year

"Whenever a patient says that you are going to be a good doctor. If any of the teachers or the other health care personnel give a little encouragement." -Female, 5th year

Teacher's attitudes towards patients. Especially the older students valued situations where the teacher-physician was able to create a good doctor-patient relationship with his patients even during a teaching session. Students appreciated expertise, respectfulness and the teacher's ability to take the patient into consideration during the teaching sessions.

"Generally, the situations where the teacher-physician relates to the patient happily, naturally, and respectfully and uses humor" -Female, 5th year

"There were three of us in a teaching situation at the oncology outpatient ward, examining a breast cancer patient. The patient gave positive feedback, and the teacher was pleasant" -Male, 5th year

"On a ward round at the oncology clinic with Dr. X. Every patient praised Dr. X, and when we were leaving, they told that she is the kind of person we should take as a model. Wonderful atmosphere in each encounter." -Female, 5th year

7.1.2.2 Worst experiences during medical education

The quantitative results of the content analysis of the best experiences reported by medical students are presented in Table 32.

Table 32. Summary of the answers to the question: "Describe briefly the worst teaching situation or a patient encounter that you have experienced during your medical education."

Worst experiences	No. of responses	Female/ male	Academic year				
			1	2	3	4	5
Teaching situation	51	32 / 19	8	13	4	12	11
- poor quality	35	21 / 14	8	3	4	9	11
- autopsies	13	12 / 1	1	10	2	-	-
- performance situation	9	5 / 4	1	-	2	3	9
Patient encounter	37	28 / 9	2	3	8	15	9
Teacher's attitude towards students	27	20 / 7	3	1	6	7	10
Teacher's attitudes towards patients	23	18 / 5	-	1	7	9	6
None/ cannot remember	11	6 / 5	4	1	1	3	3
Total	149	105/44					

Teaching situation. Concerning teaching in general, some of the respondents criticized the poor quality of teaching, mentioning examples of lectures and group work that were ill-prepared or useless. A few respondents also mentioned inadequate teaching facilities, too big groups or lack of supervision or feedback by teachers.

> "Some horribly boring biochemistry lectures of which I understood nothing, cutting up cats in anatomy class! Useless!" -Female, 1st year

> "A boring round during which we were packed in the same small "booth" at the ward with the "squeezing" older students" -Male, 4th year

> "Generally, situations with too many students (10-15 persons) swarming around the patient and making it difficult to follow the teaching. Also situations where the doctor is unkind towards the patient." -Female, 5th year

"Examining the first patients in the preparatory course of internal medicine: I was alone with the patient, there was no-one to give advice on how to do the examination and no-one controlled if I had learned the basics of taking the history and performing the examination" -Female, 4th year

"When I found out that no-one was interested about the findings after I had examined the patient in the internal medicine unit, i.e. the teacher couldn't confirm whether the patient had a certain murmur or not" -Female, 5th year

Dissections were often mentioned as the worst experiences encountered, especially by preclinical students, but the answers rarely included details of the situations.

"The worst thing so far has been to watch a cancer grow on a video and the slides at the pathology course" -Female, 2nd year

"The dissection during the pathology course: a bad atmosphere, does the first patient encountered during medical education have to be a corpse?!?" -Male, 2nd year

"First autopsy during the anatomy course in the first autumn. No discussion before or after." -Female, 2nd year

Performance situations in general were reported as the worst experiences by some of the students. Such situations included lectures or ward rounds during which students had to present patient cases, to know some clinical details or to perform a certain clinical procedure.

"Performing a nasty procedure to an unwilling patient under pressure from the teacher" -Female, 3rd year

"To be caught in "an exam" during a ward round at the gynecology ward, especially as I didn't know the facts" -Female, 5th year

Patient encounters. Concerning the worst patient encounters during medical education, the respondents described emotionally upsetting patient cases in autopsies.

"In the preclinical years we don't meet many patients, but the first autopsy, including autopsies of two children, was a shaking experience." -Female, 1st year

"While my boyfriend was in military service, a young soldier lay on the autopsy table in the forensic medicine department after a car crash." -Female, 5th year

Especially situations where the student had to examine seriously ill or dying patients without proper preparation were mentioned quite often. Also, patient contacts in which

very intimate issues (such as sexually transmitted diseases) were discussed were felt to be distressing by some students.

> "Meeting alone a patient who had threatened to commit a suicide during a health care center visit" -Female, 1st year

> "In the emergency ward, a patient was admitted who was open and oriented and could discuss reasonably. He suddenly developed ventricular fibrillation, was resuscitated, but died." -Female, 3rd year

> "During the first day of the oncology course I had to examine, unprepared and without any instructions, a patient with terminal phase breast cancer." -Male, 4th year

> "The first patient that I examined was in a bad shape and obviously slightly delirious. All the time I examined him (what little I could) he kept screaming: "Don't torment me". -Female, 4th year

> "Meeting the first psychotic patient was a little distressing, but I didn't lose my sleep over it." -Male, 5th year

> "Teaching in the dermatology and venereology outpatient ward: a man tries to remember (with his girlfriend present) where he got the chlamydia: not from her, or her, and it didn't come from there either…" -Male, 5th year

Situations where the patient refused to be examined by the student or otherwise acted rudely were also described.

> "Patient examination at the emergency ward. When I had presented myself, the patient said, "I don't talk to a minor". -Female, 5th year

> "During the first clinical course at the Internal Medicine ward I had as a patient a middle-aged man in a leading position, who had suffered a heart attack and was nervous about his illness as well as about the fact that he ended up to be examined by a candidate" -Female, 4th year

Teacher's attitudes toward the students. Situations where students were publicly humiliated were frequently noted as the worst experience encountered. The reports included examples of conflicts between students and teachers, other doctors or nurses, and cases where teachers were rude or uncaring and neglected their students.

> "Surgery "ward service". The surgeon(s) doing the round didn't answer questions, didn't teach at all, the personnel were rude, the person in charge of the "ward service" didn't show up during the whole 3 weeks" -Female, 3rd year

"Tutorial on suturation during the preparatory course for surgery given by a rude senior: his answers to the questions were snapping, disncouraging comments" -Male, 5th year

"Situations where one has to sit doing nothing, following a doctor who relates to the student as air and hasn't noticed his or her presence at all." -Female, 4th year

"Heart sounds and ECG small group tutorial in the Department of Physiology. Both teachers were male, even though also doctors, but not in a treatment relationship with me. Everybody had to uncover ourselves, and even though we opposed, it didn't help. I felt the situation to be very embarrassing. I don't feel this kind of behavior is appropriate, even during these "liberated" times. Not with obligation, thanks!" -Female, 4th year

"Situation in which the teacher-physician stamps the label of "stupid candidate" on you with the patient still present." -Female, 5th year

" All the WORST experiences are connected to nurses or midwives. There are so many situations that it is impossible to distinguish THE worst one of them." -Female, 4th year

Teacher's attitudes towards the patients. Some of the respondents were sensitive about the quality of the doctor-patient encounters. They reported as their worst experience situations in which they saw teacher-physicians act rudely or insensitively towards the patients, or situations in which the doctor-patient communications failed for some other reason.

"We go into a room to find a patient with her pants down. No-one talks to her for 15 minutes, but only when we begin the procedure. (Group: 8 students)." -Female, 3rd year

"In the internal medicine course, the candidates that filled the whole auditorium auscultated the carotid artery of the patient present at the lecture – we queued in the stairs and pressed over 40 cold stethoscopes to the patient's neck. Some of the patients at the lectures during the surgery course were handled horribly. A few almost burst into tears. No respect for the patient." -Female, 4th year.

"During the internal medicine course, the whole small group performed a touch per rectum to the same patient. (Thoughtless teacher!)" -Female, 4th year

"The kind of situation in which the patient's privacy is violated and (he/she is) treated like a disease and everyone stares like in the zoo. A couple of cases." -Female, 5th year

"A completely strange teacher-physician comes with a group of candidates
on a teaching round to tell the patient that he has chronic lymphatic leukemia.
The patient is confused and is left sad and shocked to wonder what happened!" -
Male, 3rd year

"One surgeon told at the bedside of a sleeping patient, that he will not live long
any more. On the other side of the curtain there was a patient awake suffering
from the same disease, and the surgeon didn't notice him!" -Male, 5th year

7.1.3 Perceived need for support during medical education

Most of the respondents (76%) in the clinical phase were of the opinion that they did not
get enough feedback from the patients they examined during the studies. The feedback
given about the written exams was insufficient according to 54% of the respondents.
Almost all (97%) of the respondents thought that they had enough possibilities for
discussing things concerning studying with their peers (other students), and 84% had a
chance to talk to either friends or family. Most of the clinical students (97%) felt that they
did not have enough possibilities to discuss things with their teachers. Male students
reported more commonly than females that they had enough possibilities to discuss with
older students (38% vs. 21%, p=0.02) and teachers (37% vs. 15%, p<0.001). More
support was hoped from the clinical staff (76%), newly graduated physicians (72%) and
older students (52%) (see Table 33).

Table 33. Perceived need for support during undergraduate medical education in the University of Oulu by sex. Percentages (%) of the responses.

Variable	Female n=165	Male N=68	All n=233	p
Would you like to get more support from?				
Clinical staff	78	71	76	0.12
Young doctors	75	66	72	0.39
Older students	57	38	52	0.01
Academic counselors	32	19	28	0.07
Pre-clinical staff	24	16	22	0.22
Department of psychiatry	23	9	19	0.003
Students' mental health service	18	6	15	0.01
What form of support would you like to get?				
Small group	65	37	57	0.0005
Personal tutor	50	56	52	0.55
Seminar	35	30	33	0.46
Lecture	32	25	30	0.55
Would you like to get more counseling on?				
Career issues	79	66	75	0.03
Professional issues	52	52	52	0.42
Personal issues	52	44	50	0.40
Studying	44	27	39	0.02

The perceived need for support varied between the different academic years. Preclinical students wanted more support from older students (1st year 75%, 3rd year 48% and 5th year 27%, p=0.001), preclinical staff (1st year 58%, 3rd year 17% and 5th year 7%, p<0.001) and academic counselors (1st year 53%, 3rd year 19% and 5th year 30%, p= 0.015) more often than clinical students. Especially at the beginning of the clinical phase, students would have liked to get more support from their teachers (1st year 64%, 3rd year 88% and 5th year 77%, p= 0.017).

The "newcomer introduction" by the faculty was considered satisfactory by 87%. More study guidance was wanted by 44% of female and 27% of male students (p=0.02). Of all respondents, 75% wanted more career guidance (females 79%, males 66%, p=0, 043). Half of the respondents wanted personal counseling or supervision during the studies, and there were no gender differences in this. The most frequently wanted forms of support were small groups (57%) or a personal tutor (52%). Women favored small groups more commonly than men (65% vs. 37%, p=0.005). The support should last through all the years of studying.

7.2 Professional orientations

7.2.1 Medical students' professional identities

The respondents' professional identity was investigated by asking them to assess how well certain expressions describe them as future physicians. Most medical students described themselves as helpers, listeners, and health professionals. Only very few viewed themselves as assembly line workers or bureaucrats. The frequencies of the answers are presented in Table 34.

Table 34. Answers to the question: "How well do the following expressions describe you as a future doctor?" Percentages (%) of the responses.

Expression	Very/quite well	quite/very badly	cannot say
Healer	69	22	9
Technician	27	66	7
Teacher	54	40	6
Family physician	81	13	6
Health educator	76	20	4
Bureaucrat	15	78	7
Entrepreneur	36	55	9
Health professional	88	9	3
Prescriber	52	45	3
Assembly-line worker	12	84	6
Vocational doctor	70	27	3
Helper	90	8	2
Comforter	69	28	3
Listener	88	10	2
Social worker	67	28	5
Authority	45	50	5
Fellow man	75	21	4

Statistically significant differences between male and female respondents were found concerning the following expressions: authority (60% vs. 39%, respectively, p=0.0009), technician 41% vs. 21%, p=0.025), health educator (63% vs. 82%, p=0.009), vocational doctor 57% vs. 75%, p=0.007) and helper (82% vs. 92%, p=0.04). The statistically significant differences in the professional identities of medical students according to the academic year are presented in Table 35.

Table 35. Statistically significant differences in the professional identities of medical students according to the academic year. Percentages (%) of the responses "very or quite well"

Expression	1st year	3rd year	5th year	p
Healer	81	69	40	<0.001
Technician	31	24	20	0.025
Teacher	42	69	30	0.017
Health educator	69	88	53	0.028
Entrepreneur	33	33	37	0.05
Health professional	81	91	87	0.009
Prescriber	53	50	87	0.025
Assembly-line worker	3	12	37	0.009
Vocational doctor	83	67	53	0.05

The results of the principal component factor analysis of the identity variables are shown in table 36. On the basis of the eigenvalues of 1.00 or more, 4 factors were produced. They were named as follows (the factors with loadings of 0.40 or more are given in parenthesis): Humanist (healer + family physician + vocational doctor + helper + comforter + listener + social worker + fellow man), Bureaucrat (bureaucrat + prescriber + assembly line worker), Rationalist (healer + technician + teacher + entrepreneur + authority) and Health promoter (family physician + health educator + health professional). The four-factor matrix solution explained 56% of the total variance of the 17 variables. Factor one accounted for 24% of the total variance.

There were marked differences in the professional identities of medical students (see Table 36).

Table 36. Principal component factor matrix with varimax rotation of the 17 professional identity items.

Variable Communality	1st factor "Humanist"	2nd factor "Bureaucrat"	3rd factor "Rationalist"	4th factor "Health promoter"
Healer	.51	-.00	.50	.15
Technician	-.00	.24	.68	-.34
Teacher	.17	-.00	.52	.21
Family physician	.43	.00	-.20	.58
Health educator	.33	.00	.00	.69
Bureaucrat	.00	.75	.00	.00
Entrepreneur	.18	.00	.64	.10
Health professional	.00	.00	.30	.78
Prescriber	.00	.71	.16	.16
Assembly line worker	-.23	.77	-.00	-.13
Vocational doctor	.71	-.00	.17	-.13
Helper	.76	.00	.16	.19
Comforter	.81	-.00	-.00	.12
Listener	.75	-.00	-.00	.23
Social worker	.55	.00	-.26	.24
Authority	.00	.39	.49	.00
Fellow man	.71	-.18	-.11	.14

When the differences in the factor scores were analyzed by comparing the mean values between the genders, males were found more commonly to be on the scale of Rationalists and females on the scale of Humanists. The gender differences were also statistically significant (see Table 37).

Table 37. Mean values (± SD) of the gender-specific factor scores.

	N	Humanist	Bureaucrat	Rationalist	Health Promoter
Male	68	-0.30 (1.1)	0.00 (1.1)	0.34 (0.9)	-0.14 (1.0)
Female	164	0.12 (0.9)	0.00 (1.0)	-0.14 (1.0)	0.00 (1.0)
		p= 0.003	p=0.68	p=0.001	p=0.17

7.2.2 Medical students' professional orientations

Medical students' professional orientations were investigated by asking the students what they would like to do after graduation. The frequencies of the responses are presented in Table 38.

Table 38. Answers to the question: "Have you already thought about what you would like to do after graduation? Please, assess your interest in the following areas." Percentages of the responses, n=233.

Professional task	Interested very/quite much	Not interested	Cannot say
Work in a hospital	97	2	1
Work in a health care center	92	6	2
Work in a private practice	86	8	6
Administrative work	38	52	10
Teaching at the university	53	37	10
Research in biomedicine	31	65	4
Research in public health	33	60	7
Research in a clinical field	85	12	3
Surgery/other operative field	77	18	5
Internal medicine	73	22	5
Pediatrics	80	14	6
Mental health	50	43	7
Work in a 3rd world country	67	25	8

Statistically significant differences between the male and female respondents were found concerning the orientations toward: working as a private practitioner (90% vs. 85%, respectively, p=0.048), doing administrative work (13% vs. 4%, p=0.011), surgery/operative field (58% vs. 28%, p<0.0001), pediatrics (19% vs. 44%, p=0.003), mental health (10% vs. 16%, p=0.068) and work in a 3rd world country (22% vs. 30%, p=0.0001). The statistically significant differences in professional orientation according to the academic year are presented in Table 39.

Table 39. Statistically significant differences in the professional orientation between medical students according to the academic year. Percentages (%) of the responses "very/quite much".

Expression	1st year	3rd year	5th year	p
Work in hospital	92	95	100	0.024
Research in biomedicine	53	33	13	0.024
Research in public health	42	21	13	0.025

The results of the comparison of the mean values of identity factors between the reported field of professional interest (professional orientation) are presented in Table 42. The factor "Humanist" correlated commonly with an interest in working in primary care, pediatrics, mental health service or a 3rd world country. The factor "Rationalist" was connected to interests in surgery or internal medicine, work in a private practice, teaching in the university, administrative work, research in biomedicine or in a clinical field. The factor "Health promoter" was connected with an interest in primary care or pediatrics.

The differences in the identity factor scores between the reported professional orientations revealed that the "Rationalist" orientation correlated with an interest to work in surgery or internal medicine, to do administrative work, to teach in the university, to work in a private practice as well as to conduct research either in the field of biomedicine or in a clinical setting. The "Humanist" orientation correlated with an interest in working in pediatrics, mental health service or a 3rd world country as well as conducting research in the field of public health. The "Health promoter" orientation correlated with an interest to work in a health care center or in pediatrics and to conduct research in biomedicine. The "Bureaucratic" orientation did not correlate with any of the given professional interests.

7.2.3 Students interested in joining reflection groups

Cross-tabulations of the question "I would like to join a reflection group" with the demographic variables and the variables concerning perceived need for support and professional orientation were used to find out what kind of students were interested in joining the reflection groups.

Altogether 47 % of the respondents replied that they would be interested in joining a reflection group. Female students were more interested than males (53% vs. 31%, p=0.007), and there were some differences between the different academic years (p=0.26), but not by the students' age. The students who had several doctors in the family or among their close friends were less likely to be interested in joining a reflection group than those who had no doctors in the family (36% vs. 55%). The students who felt that there had not been enough peer tutoring during the first year of studies wanted more often to join a supervision group. Also, the students who answered that they had not had enough possibilities to discuss with the teachers wanted to join the groups. The students who were aiming to do research in public health or becoming pediatricians or

psychiatrists were most interested in joining the reflection groups, while the students who were interested in surgery were least interested in joining them. The students who characterized themselves as family physicians, health educators, health professionals, comforters, listeners or social workers reported more often than the others that they would like to join a reflection group.

7.3 Reflection groups

7.3.1 Discussion in reflection groups

Topical sequences. There were some topics of discussion that were common in many reflection groups. Students talked about the variable reasons for their *career choice* at different stages of their studies. Concerning the *studying experiences,* dissections as well as pathology and forensic medicine courses were frequently discussed. *Doctor-patient relationship and communication skills* in various situations were talked about in every group. Examples of situations that needed elaboration were: encountering a dying patient (giving hope, telling the prognosis) or telling about the death of a patient to his/her relatives. Concerning *empathy and professional conduct*, the students discussed the topic of how close to the patient a doctor can get without losing his/her professionality. By the end of the clinical studies, the students had already gained *experience of health care center work* and presented patient cases as well as examples of difficult situations (such as resuscitation) and also shared general notions concerning the working arrangements and the limited time available to take care of patients. *Changing roles* (lay person-medical student-doctor) as well as the issues of whether one should take responsibility for one's own or one's relatives' medication were also tackled. Many of the groups further discussed about how to reconcile one's *future career and family life*. There were also some important topics that were presented only in one session: death of one's father, one's own chronic illness, "candidate's disease", feedback from patients, relationship between doctors and nurses, competition in applying for jobs, consultations and collegiality, safety at work, and ethics in practice.

Turn-taking. An analysis of who initiated the episodes in each session showed that 70 % of the substance sequences were begun by a student's initiative (see Table 40). The group discussions can thus be called fairly student-centered, but there was a lot of variation in the supervisor's activity between the sessions. The variation could not be explained by how experienced the group was or from which academic year the participants were. In the group Richard II (6th year students, end of the group process), the students had a lot of experience and did half of the session without supervision, which partly explains why the supervisor's initiatives remained at zero. In the session James III (5th year students, end of the group process), the relatively high proportion of supervisor's activity can be partly explained by the fact that there were only 3 participants in the group.

Table 40. Number of topical sequences initiated by the students and the supervisor. The number of initiated substance sequences is given in brackets.

Group session	Students' initiations	Supervisor's initiations	All sequences (substance sequences)	Supervisor's initiations out of all sequences (%) (of substance sequences)
Richard I	9	4 (2)	13 (11)	31 % (18 %)
Richard II	10 (9)	-	10 (9)	0 % (0 %)
Susan I	9 (8)	4 (3)	13 (11)	31 % (27%)
Susan II	11	10 (7)	21 (18)	48 % (39%)
James I	4	9 (6)	13 (10)	69 % (60%)
James II	6	5 (3)	11 (9)	45 % (33%)
James III	2	6 (4)	8 (6)	75 % (66%)
Tom I	5	9 (6)	14 (11)	64 % (55%)
Susanne I	8	2 (-)	10 (8)	20 % (0%)
Susanne II	9	1 (-)	10 (9)	10 % (0%)
Total	73 (71)	50 (31)	123 (102)	40.7 % (30.4 %)

The results concerning turn-taking indicate that the supervisors were quite active in discussion. See the Table 41.

Table 41. Number of turns taken by the students and the supervisor in each session.

Group session	Students	Supervisor	All turns	Supervisor's turns in %
Richard I	168	69	237	29 %
Richard II	195	22	217	10 %
Susan I	162	73	235	31 %
Susan II	275	125	400	31 %
James I	172	51	223	23 %
James II	125	68	193	35 %
James III	151	115	266	43 %
Tom I	115	48	163	29 %
Susanne I	234	85	319	27 %
Susanne II	261	107	368	29 %
Total	1858	763	2621	29 %

Meta-talk. Topical sequences in which the group talked about itself, i.e. meta-talk, were found in six sessions at different phases of the groups' lifespans. There were altogether 8 topical sequences (142 turns) of meta-talk in the data. In the beginning, the rules of the reflection groups were discussed: freedom to talk about anything in mind, no need to prepare in advance for the meetings, agreement to meet for a certain length of

time, keeping the group closed (no new members would be taken without negotiating with the group). The reflection group activity was defined as supervision, rather than consultation, which meant that the aim was not that the supervisor would give correct solutions to certain questions, but that the different options would be elaborated on together. During the process, there was talk about the topics of the discussion, negotiation concerning the meeting schedule and whether something should be done differently. Near the end of the process, the group discussed the possible continuation or discontinuation of the group's meetings and how it would be possible to have supervision in working life.

Students found it a good thing to have a chance to reflect on different issues concerning studying and their own life situation, and to hear that others had similar problems. The students did not have many patient contacts and said that it was more important to have a chance to talk about other issues concerning the process of becoming a physician. More support, especially at the beginning of the clinical phase, was hoped for. Once a month was found to be a good interval for meetings. A group that was too homogeneous did not function optimally. The students thought that participants with differing orientations would stimulate the discussion, and they were willing to accept new members into their group. Not all participants were present each time, as some had practical training periods in health care centers. The changing composition of the group disturbed the discussion, however, as some of the participants did not know what the others had already talked about.

The supervisors gave some professional insight into different issues, which made a difference compared to the situations where students talked among themselves. According to the students, the supervisors often provided a new perspective and helped them to concentrate on the important things. In the students' opinion, the supervisors could be even more active in bringing in their own stories and examples and even suggesting topics for discussion.

7.3.2 Lifespan of one reflection group

In order to get a longitudinal view of the reflection group process, James' group was asked to fill in reflection sheets after each session during the 18-month period. Below, the responses of this group are examined in detail.

The most important topics. The most important topics of each discussion, according to the participants, are shown summarized in Table 42.

Table 42. Summary of the answers to the question "What topics of discussion were most important to yourself?"

Date	Topic	Content of the discussion
II/1997	Death	The discussion centered on how to deal with death during the pathology and forensic medicine courses. The more specific topics were: respecting the deceased, encountering a dying patient or his/her relatives, and respecting the living patients.
III/1997	Anxiety	The main topic was anxiety during medical education, especially when first beginning to work as a doctor: *"Should one rush to working or wait until one is ready for it"*. Part of the talk was about how to deal with the anxieties and feelings of inadequacy and whether there are gender differences.
IV/1997	Learning medicine	The lacking motivation to study medicine was discussed. The questions tackled were: Why am I becoming a doctor and what does it mean? Should I continue or quit? and Why is studying medicine so tough? In conclusion, becoming a doctor was seen as a series of initiation rites. Sharing experiences was important: *"It was nice to hear that everyone feels at times that studying is tough"*
V/1997	Doctor-patient relationship	The main topic was the search for one's own professional identity. The important questions concerning the doctor-patient relationship were: How is it possible to get close to the patient and yet simultaneously maintain the professional distance? What can a doctor tell the patient about him/herself?
IX/1997	Working experiences – mistakes, guilt	The participants talked about preparing for the medical profession, beginning the work and taking the responsibility. The most important question was: How is it possible to deal with the feelings of guilt arising from mistakes and not-knowing?
X1/1997	Encountering patients	Different ways of encountering patients and experiences of the training periods in health care centers were discussed. The special issues were: encountering difficult or demanding patients, listening to the patient and interrupting when the patient talks too much, and how one can make a patient feel that he/she is thoroughly examined.
XII/1997	Telling bad news, doctor-nurse relationship	The most important questions were: How to tell the patient about the diagnosis and prognosis of a malignant or lethal disease? What to say and how to tell the relatives that the patient has died? The other topic discussed was the nurse-doctor relationship: When and how to ask for advice from nurses and how should their opinions be taken into account in decision-making?
II/1998	Various	The discussion was versatile and ranged over such issues as the practices of involuntary treatment in psychiatry and work applications by the group members.
IIIA/1998	Psychiatric patients, doctor's strike	Various patient cases and experiences during the psychiatry course were discussed, as were also the administrative and team work skills needed when working as a doctor. Part of the talk was about the cancellation of the doctors' strike that had been planned.
IIIB/1998	Psyche - soma	The problematic relationship between psychiatry and somatic medicine was discussed: Why is it a more difficult matter to send a patient to a mental hospital?
IV/1998	Working as a doctor	The discussion centered on the students' experiences of working as doctors. The most important issue tackled was the surgeon-like attitude versus a holistic view of the patient in the emergency room practice: *"How is it possible to create the impression that I really do care about the patient?"*

The recurring themes concerned 1) the ways to learn medicine and to prepare oneself for being a doctor (feelings of anxiety and inadequacy, responsibility) and 2) the relationships with patients in different situations. During the spring 1997, the group participants were attending the pathology and forensic medicine course, and the themes of discussion dealt with the feelings evoked by those courses. During the summer, some of the group members already got experience of working as doctors and the discussion during the autumn 1997 centered on the communication skills needed in patient encounters both in health care centers and in a university hospital. During the spring 1998, most of the participants were attending the psychiatry course, and the contents of the course influenced the discussion considerably. A conclusion can be drawn that the issues talked about in the group had much to do with the immediate situations in which the students were at each point of their studies.

Themes not expressed in the discussion. In the first two sessions, most of the students answered this question, but later on during the process the number of responses decreased. During half (n=6) of the sessions, there were no responses to this question, suggesting that everyone felt that they could express everything they wanted during the conversation. The answers to the question: *"What things/thoughts did you not have a chance to express during the session?"* were classified into two categories: 1) too little time to discuss the topics thoroughly, and 2) specific matters. A summary of the results is presented in Table 43.

One reason for not getting a chance to express one's own thoughts was the fast, on-going discussion, during which some of the participants did not have time to tell their opinions. The respondents hoped that the conversation on certain topics could have been continued. On the other hand, there were topics (fear, lack of motivation to study medicine, various issues concerning the doctor-patient relationship) that some of the respondents would have liked to talk about more thoroughly.

Table 43. Answers to the question: "What things or thoughts did you not have a chance to express during the session?" The supervisor's comments are marked with (J).

Reason prohibiting expression	Comments
Too little time to discuss the topics thoroughly	I had some things in my mind, but the conversation went on so fast that I didn't have time to say it (J).
	Thousands of things: the topics were so interesting that I had loads of ideas in my mind (J).
	I felt that there were many things.
	We could have continued the general discussion (two responses).
Specific matters	Again, I didn't get feedback for my feelings of a lack of motivation.
	About the fear that the forensic medicine course has evoked (because others had different negative feelings about pathology-forensic medicine), about the fear of being alone at home in the evening…
	What to say or not to say to the relatives of a dying patient.
	Are we thinking enough about the patient in Finland, all people are just grumbling about their own problems.
	I would have liked to discuss the situations where you don't want to believe the patient.
	I've thought that it would have been wiser to choose some other occupation
	It is sad that the group is ending (J).

New ideas. A summary of the new ideas proposed by the participants during the sessions is presented in Table 44. Not all sessions produced new ideas.

Table 44. Summary of the answers to the question: "What kind of new ideas occurred to you during the session?"

Date	Topic	New ideas
II/1997	Death	I was left wondering about the differences between girls' and boys' reactions to death.
		One should always think of oneself in the patient's situation: *"Again, I got a reminder that the patient should always be treated as one would hope to be treated oneself in a similar situation"*.
III/1997	Anxiety	There is no rush, everyone studies at their own pace.
		Others have similar difficulties: "I'm not the only one to feel inadequately knowledgeable".
		Some patients may even like a female doctor better. I've felt bad due to my gender.
IV/1997	Learning medicine	Learning medicine is a series of initiation rites It is important to rest at times, not to exhaust oneself.
		The patient-doctor relationship involves coming close and staying at a distance at the same time.
V/1997	Doctor-patient relationship	Success in the doctor-patient relationship is comparable to the extent of self-knowledge that one has.
IX/1997	Working experiences – mistakes, guilt	One cannot avoid mistakes, one should accept the fact that one is going to make mistakes and try to learn about them in a constructive manner; blaming oneself too much is not constructive.
XI/1997	Encountering patients	Re-evaluating and changing one's interview strategy during the encounter.
		There is no single right way; we act differently as doctors
		I can also survive working in a health care center.
XII/1997	Telling the bad news, doctor-nurse relationship	People can see and say things in different ways.
		Delicacy of the doctor-nurse relationship - one has to remember that the responsibility is one's own even though other people's opinions should also be listened to.
II/1998	Various	It is wonderful that the pathology and forensic medicine courses are over.
III/1998	Patients, doctor's strike	No suggestions.
IV/1998	Psyche-soma	Both the general public and the doctors keep up the tension between psychiatry and somatic medicine.
		One should think of psyche as an equal part of the human being to any other part.
V/1998	Working as a doctor	Even when one is in a hurry, one should be kind to the patient.
		In a short encounter, it may be difficult to act so that the patient feels him/herself understood, but it is possible to learn to give an impression of listening and being efficient at the same time.

The students commented that it was good to get to know that learning medicine was mentally tough for others, too, and that everyone had similar problems. They came to appreciate that there were many different ways to solve problems, and that one should find ways to cope with the uncertainties and the possibility of making mistakes. The new insights concerning the doctor-patient relationship were that things can be seen from many different perspectives, that one has to know oneself in order to understand others,

and that listening to the patients and working efficiently do not necessarily rule out each other.

Suggestions. A summary of the answers to the question: "How would you like the reflection group activity be improved?" is presented in Table 45.

Table 45. Summary of the answers to the question: "How would you like the reflection group activity to be improved?" Supervisor's comments are marked with (J).

Issue	Comments
Opening	Beginning with "What do you have in mind?" instead of "Are there any good patient cases?" (two responses)
Content of discussion	We could discuss the topics more thoroughly. (three responses, including J)
	We have seldom patient cases that make us anxious, but we often have many other things in mind concerning studying and preparing to be a doctor, such as ethical issues, our own sorrows, the medical profession and other things could also be discussed. (four responses)
Supervision	Not always so much planning concerning the reflection group activity.
	I wish I could make the group members more active (J).
	Student reflection groups have to be developed into something different from the original Balint work. Could the supervisor of this type of group be provocative and introduce issues for discussion…
Group membership	We decided to take new members – it's a good thing! (four responses)
	People from other classes in the same group.
Various	Those wonderful big chairs…
	A more relaxed atmosphere.
	The benefits of the reflection group work come up later, and I cannot write them down now. The head feels empty at the time this evaluation should be given.

Concerning the ideas of how to improve the reflection group activity, the best opening question would be "What would you like to talk about?" The respondents also hoped to be able to discuss a large variety of things instead of only patient cases. On the other hand, they hoped that the discussion would be limited to a certain topic during each session in order to have enough time to go through it. The respondents suggested that the supervisor of the group could be active, even provocative, and also to introduce issues for discussion. The students would have liked to have students from different academic years in the groups and were ready to accept new members.

7.3.3 Supervisor's views of reflection groups

In this chapter, the results of the supervisors' interviews concerning their perceptions about the reflection groups are presented. The lifespans of the reflection groups varied from 6 months to 4 years. The students that attended the group were mainly female and, according to the supervisors' evaluations, sensitive, clever and talkative, with varying

orientations. The meaningful memories, according to the supervisors, were discussions about what it means to become a doctor and stories about how students had coped with the difficult situations they had encountered. Concerning learning in the reflection groups, the supervisors' opinions were that learning occurs by sharing experiences, looking at things from many perspectives, and developing a personal way of dealing with things. Concerning the question of how the discussion in reflection groups reflect the study culture, the supervisors noted that the group conversation had a broad scope and centered on emotionally important issues (see Table 46).

Table 46. Supervisors' perceptions of student reflection groups based on their own experiences.

Supervisor:	Richard	Susan	James	Tom	Vicky
History of one's own student group	The group met for four years, clinical students	The group met for two years, mainly clinical students	The group continues after 1 ½ years, 3 have quit, clinical students	The group ended after 6 months, preclinical students	The group ended after only three meetings, preclinical students
What kind of students attend reflection groups?	Sensitive, empathetic, emotional, clever, most motivated	Students who ask questions, are sensitive, and find the combination of cognition and emotion important	Females with varying orientations; some go directly to work in demanding places, some take their time	Active, witty, female students are more ready to talk about emotions	Talkative, eager and open
Meaningful memories / narratives from the groups	Mistreatments, managing psychosocial problems	How students have survived difficult situations, such as resuscitation, hero stories	Stories about difficult situations, such as autopsies, how students have coped with certain things, hero stories	Whether I'm good enough to be a doctor, experiences of their own relatives' illness and death	Discussion about what it means that they are becoming doctors
Learning in reflection groups	Learning without education, students learn to do things in their own personal way	Identification, way to deal with difficult things, one's own background, broadening of scope	Students learn a way to deal with difficult things	To share experiences and get feedback, appreciation of group work, ideas and capabilities for learning	Students could learn that they are not the only ones having problems in doctor-patient relationships
How does the discussion reflect medical students' experiences of medical education?	The discussion centers around the experiences in medical school, but there is also talk about their own life situations and family	The students support each other by sharing experiences, including the negative aspects of doctors' work	Discussion centers around the important things in their emotional life	The first year had made them more realistically aware of doctors' work, many asked whether they are in the right field at all	Talk about what it means to be a university student, how to survive exams, whether one should begin with research

The interviewees said the supervisor should be an encouraging and supporting facilitator. The most essential things the supervisors mentioned about the functioning of the group included a chance to reflect on any issues concerning oneself confidentially in a supportive group and in a continuous process. The main difference according to the interviewees between students' and the doctors' groups is that while students have to reflect on the process of becoming a doctor, doctors talk about difficult patient cases. Concerning the question about the relationship between reflection groups and group therapy, according to the supervisors, reflection groups might have some therapeutical function as they allow student to talk about their feelings concerning various issues, but the focus is not on the students' personal problems, as in therapy groups (see Table 47).

Table 47. Supervisors' views of medical students' reflection groups in general.

Supervisor:	Richard	Susan	James	Tom	Vicky
Supervisor's role in the group	Experienced bystander, that can be a genuine self, rather passive, group-centered	To be oneself, to let students talk, facilitator, not an authority or a group therapist	Not an authoritarian, but group-centered, encourages discussion	Student-centered, encourage discussion and gives comments	To support free discussion but to see to it that it doesn't become a therapy situation
The most essential thing for the functioning of student reflection groups	The occupational aspect, a chance to reflect on issues concerning oneself	The possibility to talk freely and to reflect about anything in mind, confidentiality	Group process in which the students can support each other by discussing things	To let the students talk about anything that is bothering them	A process, in which the students would commit themselves to, best at the beginning of the clinical phase
Differences compared to doctors' groups	Students reflect critically on their own care-taking role / doctors use more patient cases	Students are developing a proper way to act / doctors have a view on how one should act	Students reflect on the process of becoming a doctor, they use many cases/ doctors talk about a certain difficult patient	Students talk about their life situation and changing roles/ doctors talk about difficult patient cases	Preclinical students didn't have any patients/ doctors need to talk about difficult patients
Differences compared to group psycho-therapy	Students have had crises which they have to talk about, but I don't think it is a therapy group	I don't support group processes, but there is a therapeutic effect present in getting to know oneself	If the students begin to discuss their feelings I will not stop them. I guess it is in some way a therapeutic process	Students can talk about their problems, the groups might have some therapeutic function	Balint work concentrates to the doctor-patient relationship, not the doctor's personal problems

Suggestions for improvement. The supervisors suggested the following ways to improve reflection group activity: 1) *to inform the students* better about reflection groups, to make the groups easily available and to recruit more people (also more male students), 2) *to educate more supervisors*, and 3) *to produce research reports* on this field. Other comments suggested that small discussion groups should have more space in the

curriculum, especially now that the intake of students has been increased and that a systematic possibility for sharing thoughts about patient situations during medical education would be important for the students.

7.4 Narratives and medical education

7.4.1 Narratives produced in reflection groups

Structural analysis. Altogether 124 narratives were found in the data. Of these narratives, 106 were complete (contained an introduction, a story and an evaluation), while 18 were incomplete (the evaluation part was missing). Of the incomplete stories, part were about experiences that had not yet been formulated in a proper narrative form, but the narrator was trying to structure the experience as he/she was speaking. The other type of incomplete narratives were the ones told as a continuation to another story. Of the 31 narratives that were told as a continuation to another story, 8 lacked the evaluation part. Of all the narratives, only 24 contained a dilemma. Thus, one can conclude that most of the narratives served as illustrating experiences and clarifying issues rather than introducing new topics into the discussion.

Most of the narratives were told by the participants (n=107), as only 17 were told by the supervisor. Of the narratives, only 7 were jointly told. The perspective of the narratives was personal (*I* or *we*) in 83 of the stories, while 41 were told in more distant manner (*he/she/they* or passive). Thus, it can be concluded that the narratives often portrayed the students' own experiences during medical education. An analysis of the role perspectives chosen by the narrators revealed a lay perspective in 13 of all the stories, a student perspective in 64 and a medical perspective in 47. After exclusion of the supervisors' narratives, the students' role perspectives according to their academic year (see the Table 48) were compared. The student's perspective remained common in the narratives of medical students until the end of their studies, although the medical perspective also began to emerge during the fifth year of studies.

Table 48. Students' narrative (n=107) perspectives according to their academic year.

Year	Data	Lay	Student	Medical	Narratives
1st	Tom I		2		2
3-6th	Richard I	7	4		11
4th	James I	1	8		9
	Susanne I		13	1	14
5th	James II		7	2	9
	James III			7	7
	Susan I	3	3	4	10
	Susanne II		20	4	24
6th	Richard II	1	2	8	11
	Susan II		6	4	10
Total		12	65	30	107

The topics that inspired a lot of narratives are presented in Table 49. Especially experiences of work in health care centers were commonly narrated in the groups.

Table 49. Narrative-intensive topical sequences.

Academic year	Video data	Topical sequence	Narratives
1st	Tom I	Supervisor's experiences	4
3-6th	Richard I	Father's death	4
4th	James I	Empathy versus professional conduct	3
	Susanne I	Candidate's own chronic illness	4
5th	James II	Listening to others' opinions	5
		How should the diagnosis be told?	3
	James III	Experiences of work in a health care center	4
		Getting feedback from patients	3
	Susanne II	Gynecology course	6
		Making abortions	5
		Ethics and motivating health behavior change	5
		On-call experiences from health care center	4
6th	Susan II*	First experiences as a doctor	3
	Richard II	Experiences from work in a health care center	4
		Consultations and collegiality	3

*The first videotaped discussion in Susan's group (Susan I) involved no topical sequences that contained 3 narratives.

Most of the narratives within a topical sequence (n=99) were found to be situated in the middle of the sequence. Of the narratives, 18 began and 7 ended a topical sequence. These narratives are presented in Table 50.

Table 50. Titles of narratives beginning or ending a topical sequence.

Timing in the topical sequence	Title of the narrative
Beginning	Father's sudden death
	Lack of collegiality between primary care and hospital
	Patient case – a drug abuser in a health care center
	Teaching others while being a beginner oneself
	About graduation
	Patient demanding antibiotics in a health care center
	Candidate escorting a mother to a hospital for examination
	Encountering and examining a patient of opposite gender
	First resuscitation in a health care center
	Feedback from a patient
	Safety at work in a health care center
	Candidate falling chronically ill
	Candidate's fear of ovarian cancer
	About giving birth
	About abortion
	Patient asking for abortion in a health care center
	Experience of sexual harassment in hospital
	First on-call duty in a health care center
Ending	About a candidate amputating a finger in a health care center
	Preparing oneself for the role of a doctor
	Prescribing medicine to one's own mother
	Mother's experience of humiliation in hospital
	Emergency situation with a patient suffering from chronic obstructive pulmonary disease
	Experiences of the dissection course
	About health promotion

7.4.2 Narratives of medical education

Substantive analysis. When dilemmas were categorized according to the perspectives of professional socialization proposed by Becker et al. (1963), the most frequent categories were *Clinical Experience and Status*. There were no narratives about the *Economic* perspective, which might suggest that topics other than learning factual information were considered more important by the participants. In the categorization according to the nature of the critical experience (Vasilyuk, 1988), the most frequent categories were *Stress and Conflict*. There were altogether 25 narratives of positive experiences in the different categories. The results of the cross-tabulation of the categorization of narratives is presented in Table 51. Titles of example stories in each category containing at least 3 narratives are presented in Table 52.

Table 51. Results of the cross-tabulation of the categorization of narratives. (+) refers to the number of positive experiences.

Critical events/ Socialization Perspectives	Stress	Frustration	Conflict	Crisis	Total
Clinical experience	33 (+10)	12 (+2)	24 (+6)	-	69 (+18)
Status	1	4 (+1)	12 (+1)	1	18 (+2)
Idealism	2 (+1)	4	1	4	11 (+1)
Responsibility	-	5	2 (+1)	-	7 (+1)
Knowledge	4	2	-	-	6
Academic	-	-	5 (+1)	-	5 (+1)
Co-operation	1 (+1)	3	1 (+1)	-	5 (+2)
Competition	3	-	-	-	3
Economic	-	-	-	-	-
Total	44	30	45	5	124 (+25)

Most narratives of critical experiences during medical education were about stressful or conflicting situations in clinical practice. Narratives concerning frustrating experiences in clinical situations or conflicts of status were also quite frequent. Positive experiences were less commonly narrated in the groups. There were no narratives about the *Economic* perspective.

Table 52. Titles of example stories in each category containing at least 3 narratives.

Critical events/ Socialization Perspectives	Stress	Frustration	Conflict	Crisis
Clinical experience	Examining a corpse in the forensic medicine course	Student giving too positive a prognosis to a patient	A patient demanding antibiotics	-
Status	-	Escorting one's grandmother to a health care center	A friend that has needed psychotherapy	-
Idealism	-	Doctor's inability to prevent patient's death	-	The death of a cousin's 3-month-old baby
Responsibility	-	Unsuccessful extraction of a foreign body from eye	-	-
Knowledge	Student's fear of extrauterine pregnancy	-	-	-
Academic	-	-	A researcher who does on-call duties during weekends	-
Co-operation	-	Trouble in co-operation between PHC* and hospital	-	-
Competition	Competing for jobs among peers	-	-	-
Economic	-	-	-	-

*PHC= primary health care

Of all the narratives, 15 were personally told stories of university learning situations, from the medical student's perspective. These narratives were analyzed more closely in order to get some understanding of the hidden curriculum of professional socialization. The example narratives chosen for presentation illustrate critical experiences of *Frustration* in the socialization categories concerning *Clinical experience and Responsibility*.

Example 1. Clinical experience - Frustration

Tarina huonojen uutisten kertomisesta kierrolla

"se oli keuhkosyöpäpotilas (.) kuoleva (.) se oli ahistava tilanne (1) siinä oli pari kandia ja pari hoitajaa ja pari lääkäriä ja sitte tää täti alkaa kysymään että onko tämä kuolemaksi (.) niin tietysti lääkäri sano että on (.) sitte alkaa itkemään potilas (.) kukkaan ei sano mittään (.) ja seistään hiljaa ja itellä tulee semmonen olo että tekis mieli mennä istuun siihen viereen ja sanoo että saa itkiä (.) ja kun kukkaan ei sitä tehnyt niin tuntu etten mää kandina voi hypätä sieltä takarivistä yht'äkkiä sen potilaan luo"

A narrative of telling bad new to a patient during a ward round

"it was a patient with lung cancer (.) dying (.) it was a disturbing situation (1) there were a couple of candidates and a couple of nurses and a couple of doctors and then this lady asks if she will die from this (.) so the doctor naturally says yes (.) then the patient begins to cry (.) nobody says anything (.) and we stand there quietly and I get a feeling that I would like to go and sit beside her and say that it is ok to cry (.) and when no-one did it I felt that a candidate cannot suddenly jump from the back row to go to the patient.

This narrative is a typical example of a *Clinical experience*, as it illustrates a learning situation in which medical students follow older colleagues' work. In a situation of this type, students learn, in addition to the clinical knowledge of how to treat diseases, also the hidden curriculum of professional behaviour and emotional detachment in clinical practice. This example also indicates how difficult it is to communicate bad news to the patient. Instances where students get to witness patients being not treated well may cause a lot of *Frustration*, as students, due to their low status in the hierarchy of the hospital organization, are unable to do anything.

Example 2. Responsibility - Frustration

Tarina epäonnistuneesta toimenpiteestä

" … me oltiin Kirran päivystyksessä (.) ja sinne tuli potilas vanha pappa jolla oli virtsaumpi (.) hoitajat oli yrittäneet katetroida ja ei onnistunut ja tää kirurgi rupes yritti katetroida ja ei onnistunut (.) sitten se kysyi että haluaako jompikumpi laittaa cystofixin (.) ja mää sanoin että mää voin laittaa ja tein niin kuin hän käski (.) niin ei sieltä alkanut kuiteskaan virtsaa tulemaan ja hän sanoi että paina syvemmälle (.) paina syvemmälle ja mää tein työtä käskettyä (.) (huokaus) vieläkään ei tuu mittään (.) tää päivystäjä sanoo että paina syvemmälle ja minä kattoin jo silmät pyöreänä että vieläkö syvemmälle (.) ihan kysyin häneltä että vieläkö (.) se sanoi että joo (.) kun jonkun ajan kuluttua sieltä alkoi kuitenkin tulemaan virtsaa sitten ja sit tää kirurgi-päivystäjä sanoi että niin käytiin kyllä aika syvällä (.) sitte mää kysyin että (.) mitä siitä voi seurata jos

käytiin liian syvällä se sano että kaikki ympärillä olevat rakenteet on aika huonoja (.) että jos me käytiin rektumissa niin tälle potilaalle tulee peritoniitti ja se kuolee (huokaus) no se oli tietysti jotakin aivan hirviää mulle (.) siis sanoitko sää että tää voi niinku kuolla tästä että minä oon ollut tässä cystofixin päässä ja tehnyt niin kuin hän sanoo koko ajan…"

Narrative of an unsuccessful procedure

"…we were in the surgery outpatient clinic (.) and there came a patient, an old man who had urinary retention (.) nurses had tried to set the catheter without success and this surgeon tried to set the catheter unsuccessfully (.) then he asked whether either of us would like to set a cystofix (.) and I said that I can do it and did everything just as he told (.) but no urine was coming and he said press harder (.) press harder and I did what he asked (.) (sigh) still nothing (.) this doctor says press harder and I looked at him wide-eyed wondering about pressing even harder (.) I asked him if he meant even harder (.) and he said yes (.) when after a while urine began to come out this surgeon said that we went quite deep (.) then I asked that (.) what can be the consequences if we went too deep and he said that all the surrouding structures around are quite weak (.) that if we went to the rectum this patient will get peritonitis and die (sigh) well that was of course something terrible for me (.) did he really say that this patient can die because I have set the cystofix and done everything just as he asked…"

This story is a typical example of a *Responsibility* perspective, as it describes a situation in which the student performs a procedure on a patient. These situations, in which medical students learn by doing, have an influence on their professional development, especially because the students get immediate feedback on whether they can or cannot do something. A successful performance can reinforce their trust in becoming good doctors, whereas an unsuccessful performance may cause a lot of frustration. This example also demonstrates part of the hidden curriculum concerning how mistakes are handled in medical practice.

Summary. Most of the narratives told in reflection groups are based on medical students' own experiences. The narratives of interaction in university hospital teaching situations illustrate experiences that are potentially important for professional socialization. These narratives make visible aspects of the hidden curriculum of medical education. The situations in which students get to observe how patients are taken care of (*Clinical Experience*) and in which they get to practise their skills (*Responsibility*) have special importance for physicians' professional development. Based on the categorization of narratives according to critical experiences, it seems that not only experiences of *Crisis*, but also experiences of *Stress, Frustration and Conflict* provoke reflection and may serve as starting points for reflective learning and the construction of professional identity.

7.5 Dilemmas and physicians' professional identity

7.5.1 Medical students' dilemmas

The inductive analysis revealed altogether 129 dilemmas in the data. The dilemma-intensive topical sequences are presented in Table 53.

Table 53. Dilemma-intensive topical sequences.

Academic year	Videotape*	Topical sequence	Dilemmas
1st	Tom I	Dissection course	5
		Time management	3
3-6th	Richard I	Preparing to be a doctor	4
		How should one have acted professionally?	3
4th	James I	Empathy – professionalism	4
		Giving hope – telling the diagnosis	4
	Susanne I	Medical student's own chronic illness	5
		Safety at work	3
5th	Susan I	Doctor and the family	4
		Specialization – research work	3
		Competition	3
	James II	Doctor-nurse relationship,	
		listening to others' opinions	4
		Telling bad news	4
	James III	Time management, working arrangements,	
		taking care of the patient	3
	Susanne II	Gynecology course	4
6th	Richard II	Future and work	3
		Consultations and collegiality	3

*The second videotaped discussion in Susan's group (Susan II) involved no topical sequences with more than 2 dilemmas.

The dilemma categories and the numbers of dilemmas found in the inductive data analysis are presented in Table 54. After each category, examples that illustrate the dilemmas discussed in the reflection groups are given.

Table 54. The main dilemma categories, subcategories, number of dilemmas in each category and examples illustrating dilemmas (n=129) discussed in the reflection groups. Italics indicate the researcher's interpretation of the discussion concerning a certain dilemmatic issue.

Dilemma category (Number of dilemmas)	Examples illustrating dilemmas discussed in reflection groups
Career choice (5)	Is this career choice right for me?
	How much effect did others' recommendations have on my career choice?
Career (15)	
-career in general	Should I do the practical training period or go to work?
-research or clinical work	Should I begin research work? On the other hand, I could be happy working in a small health care center.
-competition for jobs	How can I show the best of myself when applying for a job?
-career and family	When is it a good time for a female doctor to have children?
-career and life	What would a good life as a doctor be like?
Medical education (27)	
-theoretical and practical knowledge	How can I use the learned knowledge in practice?
	Is this knowledge relevant for me?
	Can I do this or not?
-idealism	How could I become more critical?
-encountering death	*Would I give permission to perform an autopsy on a relative?*
-controlling one's feelings	How can I learn to contain my emotions?
-student's role in a teaching situation	*How should I react as a candidate when I see that a patient is not treated well?*
-confidentiality	*When and to whom can one talk about confidential issues?*
-"candidate's disease"	Do I have that disease?
-biomedical or psychosocial aspects of teaching	Will we learn everything from a wide enough perspective?
Different roles (15)	
-medical students' role	It is not unproblematic how my old friends have taken it that I study medicine.
-candidate's role and relatives	*Can I treat my relatives or friends?*
-gender roles	*How should I react to sexual harassment?*
-preparing for the physician's role	On the one hand, it would be nice to graduate, but on the other hand, I'd like to stick to what I have now.
-doctor as a patient	Should I take responsibility for my own medication?
Doctors' work (26)	
-time management in general	*How could I learn to say no?*
-time management and working arrangements	How could one get time to listen to the patients?
-ethical dilemmas	*How should I relate to woman who wants an abortion?*
-biomedical or psychosocial care	Even though one acts quickly, one should see the patient as a person.
-encountering death	Should I have continued resuscitation?
-prioritization	Patients want examinations, but there is a need to save money.
-lack of safety at work	*How should I react to a violent patient?*
Professionalism (13)	
-empathy and distancing	Can one be a comforting person instead of only a doctor?
-touching	*What is a professional touch like?*

Table 54. Continued.

Dilemma category (Number of dilemmas)	Examples illustrating dilemmas discussed in reflection groups
Communication skills (28)	
-telling bad news to the relatives/patients	If someone is dead, do you use the word "died" or "passed a way"?
-specialist consultations	When should I consult older colleagues?
-negotiation situations with patients	How could I make patients comply with the treatment instructions?
-negotiation situations with nurses	How much should I listen to nurses' opinions?
-health promotion	How can one talk about smoking with patients?

Some of the dilemmatic topics occurred in the discussion repeatedly at different phases of the studies, but the questions presented varied according to the variable experiences during medical education. For example, dilemmas concerning encountering death at the preclinical phase were presented as questions about how to relate to death and corpses during medical education, while more advanced students presented questions about how to relate to dying patients or how to tell about the patient's death to the relatives. The repeated dilemmatic topics are presented in Table 55.

Table 55. Repeated dilemmatic topics. Examples of dilemmas medical students seek answers to at different phases of their studies.

Repeated dilemmatic topics	Preclinical phase	Clinical phase
Time management	How can I learn to say "no"?	Do I have enough time to take care of patients properly?
Career	Is doctor's career right for me?	Should I pursue a clinical or an academic career?
Encountering death	How should I relate to death during dissections and autopsies?	How should I relate to a dying patient or his/her relatives?
Biomedical –psychosocial orientation	Will we learn everything from a wide enough perspective?	Even though one acts quickly, one should see the patient as a person.
Professionalism	How can I learn to control my feelings?	How much can I be a comforting person and not just a doctor?

7.5.2 Process of constructing physicians' professional identity

Further analysis of the dilemmas aimed to relate the data to the theoretical framework of the cultural-historical activity theory. The dilemmas were sorted according to the perspectives they were told from into categories of 1) "Personal life" (dilemmas from the lay perspective), 2) "Medical education" (dilemmas from the student perspective), and 3) "Work" (dilemmas from the medical perspective). Part of the dilemmas seemed to have elements from at least two of these perspectives. These dilemmas concerning professionalism and controlling one's feelings, communication skills, biomedical versus psychosocial orientation, and encountering death were placed under the category of "Preparing for a physician's role" (see Figure 7).

Personal life
-Career choice
-Career (family, life)
-Candidate's role and relatives
-Gender roles

Medical education
-Idealism
-Theoretical-practical knowledge
-Student's role in a teaching situation
-Confidentiality
-"Candidate's disease"
-Doctor as a patient
-Career (in general, research-clinical work, competition for jobs)

Preparing for physician's role
-Professionalism and controlling one's feelings
-Communication skills
-Biomedical-psychosocial orientation
-Encountering death

Work
-Time management and work
-Colleagiality and consultations
-Priorization
-Lack of safety at work
-Ethics in patient care

Fig. 7. Dilemmas categorized by different perspectives.

The categories of Personal life, Medical education and Work were then examined as interacting activity systems (see Chapter 3.1.1). The analysis was continued by formulating a figure modeling the contradictions inherent in the process of constructing physician's professional identity based on the content of the dilemmas within each activity system (see Figure 8).

In the activity system of Personal life, arrow 1 refers to a contradiction between the professional (being a medical student) and personal (being someone's relative or friend) roles. Arrow 2 refers to uncertainty about one's career choice. Arrow 3 illustrates the contradiction between a career versus family orientation. Arrow 4 expresses the tension between the medical student's own and his/her relatives' expectations of what a doctor should be like. Arrow 5 stands for the contradiction between the subject and the rules, such as whether a person can give prescriptions to his/her relatives.

In the activity system of Medical education, arrow 1 represents the contradiction between the roles of a learner and a carer in the clinical situations. Arrow 2 refers to a theoretical versus a practical orientation of educating medical students. Arrow 3 stands for the contradiction between the appreciation of a clinical or a research career as a result of education. Arrow 4 deals with the contradictory nature of the choice of speciality one should aim at. Arrows 5 and 6 illustrate the contradictions in medical students' status: the students' role in a hospital and the relationship between nurses and medical students. Finally, Arrow 7 expresses the contradiction implicit in medical students' need to talk about disturbing experiences and the rules of confidentiality.

In the activity system of Work, arrow 1 represents the contradiction in a busy work situation, where the student would like to listen to and understand the patient, but the reality of work makes him/her hurry. Arrows 2 and 3 illustrate communicative contradictions. Arrow 2 presents the dilemma of whether to consent to the patient's wishes or to rely on medical facts in making decisions. Arrows 4 to 6 represent ethical dilemmas in patient care: prioritization of resources, specific dilemmas of the doctor-patient relationship and the dilemma of whether one should sometimes accept death as an inevitable outcome, even though doctors aim to protect life.

Personal life

1 The role of a medical student versus the role of a relative or friend
2 Medical versus other profession
3 Career versus family life
4 One's own versus relatives' expectations of being a doctor
5 Can I take care of relatives and friends?

Medical education

1 Learner versus carer
2 Theory versus practice
3 Clinical versus research work
4 Which speciality?
5 Student's role in hospital
6 Student - nurse relationship
7 Confidentiality versus
  need to talk

Work

1 Hurry versus willingness to listen and help
2 Patient's wishes versus medical knowledge
3 When should one consult others?
4 Equality of patients versus scarce resources
5 Ethical dilemmas in patient contacts
6 Protecting life versus accepting death

Fig. 8. Contradictions in constructing physicians' professional identity in three activity systems.

Additionally, the expectations for a becoming doctor in these three different activity systems can be contradictory. The dilemmas of professionalism and controlling one's own feelings, communication skills, biomedical versus psychosocial orientation and encountering death were found to be most interesting in view of the process of constructing physician's professional identity. In trying to find solutions to these dilemmas, transitions between the different activity systems become important. It seems that the problems in the construction of physician's professional identity cannot be solved by looking solely at the dilemmas within the context of medical school.

Finally, the dilemmas were viewed again in their original context, i.e. within the group discussion. The aim was to find out what kind of solutions, if any, the participants suggested to the dilemmas talked about. The solutions were sorted into the following categories: 1) *expansive comment* (any attempt to solve a problem, suggesting a new approach or a new way of thinking or acting), 2) *critical comment* (stating that something is not good, but offering no suggestions on improvement, 3) *comment stating a fact or a belief* (not taking an attitude for or against, no suggestions for improvement, 4) *no processing* (there was no solution suggested, no comments on the dilemma). The results are presented in Table 56.

Table 56. Types of processing dilemmas in reflection group conversation.

Type of processing	Number of dilemmas
Expansive	50
Critical	17
Stating	33
No processing	29*
Total	129

(*in 16 cases a new story or a new dilemma followed)

Examples of expansive comments concerning dilemmas situated at the intersection of the three activity systems: professionalism and controlling one's feelings, communication skills, biomedical versus psychosocial orientation and encountering death, are presented in Table 57.

Table 57. Solutions suggested to certain dilemma categories.

Dilemma category	Expansive comment
Professionalism and controlling one's feelings	One should be able to distinguish work from private life.
Communication skills	One should have some recommendations on how to begin telling the bad news and what words to use.
Biomedical versus psychosocial orientation	Doing things quickly and taking the patient into consideration can be done at the same time.
Encountering death	One should accept that a doctor cannot save everyone.

Summary. Medical students face numerous dilemmas during their education. Part of the dilemmatic topics remain the same throughout the education, but many of the questions that students ask change as a result of increasing experience. The hypothesis of professional identity being construed within the activity system of medical education (Chapter 3.2) proved to be inadequate. According to the theory-driven dilemma analysis, it seems that physician's professional identity is constructed by solving dilemmas within three different activity systems: Personal life, Medical education and Work. The expectations for a becoming doctor in these different perspectives may be contradictory. The most interesting dilemmas concerning the construction of physicians' professional identity were situated at the intersection of these three activity systems. Concentrating solely on dilemmas inherent in medical education will not solve the problems of constructing professional identity. Instead, the interaction and transitions between these activity systems should be examined. Medical students should be offered more possibilities to reflect on the dilemmas encountered during learning medicine, especially ones concerning professionalism and controlling their feelings, communication skills, biomedical versus psychosocial orientation, and encountering death.

8 Discussion

8.1 Medical students' perceptions of medical education

8.1.1 Students' opinions of studying medicine

Medical students often reported high levels of stress, especially in transition periods, such as beginning the clinical studies (3rd year, 38%) and near graduation (5th year, 33%). Similar results were reported in an earlier study on medical students' stress (Leinonen *et al.* 1995). Almost one third of the students near graduation, most commonly females, expressed regret concerning their career choice. This result can be partly explained by the uncertainty of the future transition into work life, but it could also be an indicator of disappointment with the failure of medicine to meet the students' expectations. Qualified physicians have also given similar answers (Hyppölä *et al.* 2000a, Hyppölä 2001).

8.1.2 Critical experiences during medical education

Teaching situations. Students found the best teaching situations to be ones in which they were given a chance to do something, to do it right and to get feedback immediately - especially successful medical procedures were appreciated. This finding of students appreciating chances to exercise medical responsibility as important for their professional development is similar to the results earlier reported by Becker *et al.* (1963) and Sinclair (1997). Dissections were often mentioned, especially by preclinical students, as the worst experience encountered. Although Becker *et al.* (1963) claimed a shortage of evidence to show that medical students find dissections distressing, it seems that some students would appreciate a

chance to reflect more on these situations. Lella and Pawluch (1988) suggested that medical students should be provided a chance to discuss the emotions, thoughts, experiences and dilemmas concerning encountering death in dissections in order to enhance their professional development. For some students, performance situations (lectures or ward rounds during which students had to present patient cases or perform a procedure) were disturbing. The threat of humiliation has been found to cause anxiety in medical students in several studies (DelVecchio Good 1995, Haas and Shaffir 1977, 1982 and 1987, Uhari *et al*. 1994, Rautio *et al*. 1999).

Patient encounters. Similarly to Becker and colleagues (1963) and Sinclair (1997), the present findings also indicated that clinical experience was highly valued, for example, observing the first delivery was mentioned quite frequently as the best experience encountered. Situations in which student-patient communication was successful (accomplished understanding, was able to give information or reassurance to the patient) were reported as satisfactory experiences. Shuval (1975) also claimed that patients are important as socializers, since they serve as legitimizing audiences for students and provide them feedback on their professional performance. Problems in student-patient relationship (patients refusing an examination, or encountering seriously ill or dying patients with insufficient preparation) were often mentioned as the worst experiences encountered during medical education, and these situations were perceived as most stressful by medical students especially at the beginning of their clinical studies (Leinonen *et al*. 1995).

Teachers' attitudes towards students. The finding that getting encouragement and positive feedback from teachers was important for students was in line with the findings of DelVecchio Good (1995). Situations involving conflicts between students and staff were found disturbing. Similarly, Becker *et al*. (1963) and Sinclair (1997) noted that situations where the students somehow failed to meet the expectations of the staff were traumatic for the students.

Teachers' attitudes towards patients. Students observed carefully how the teacher-physicians treated their patients and appreciated examples of good doctor-patient relationships (Becker *et al*. 1963 and Sinclair 1997). Instances of a teacher-physician acting rudely or insensitively toward a patient were found disturbing. Similar results have been reported in several studies concerning ethics in medical education (Feudtner *et al*. 1994, Kerridge & Lowe 1997, Satterwhite III *et al*. 1998). Examples of such situations were also mentioned by the medical students in reflection groups.

8.1.3 Perceived need for support during medical education

The feedback from learning, written exams, and patient examinations was reported to be insufficient, and this finding was repeated in the replies to the open-ended questions concerning the best and worst experiences during medical school. Similar results have earlier been obtained by Rimpelä *et al.* (1994). This is regrettable, since feedback has been considered to have special importance for learning (Rauste-von Wright & von Wright 1994). There is also a need for increasing the possibilities for reflective learning during medical education. Nearly all respondents in the clinical phase reported that they did not have enough possibilities to discuss with their teachers, and more collegial support was hoped, especially from the clinical staff or newly graduated doctors. These findings are in line with the earlier reports of Rimpelä *et al.* (1994), Vainiomäki (1995) and Niemi (2001) as well as Lindblom-Ylänne (1999), who found that medical education in its traditional form does not provide students with enough support for their professional development. Christakis and Feudtner (1993) and Hicks *et al.* (2001) suggested that attention should be paid to the real practical and ethical dilemmas encountered by medical students. Medical students hoped for a possibility to attend tutoring sessions throughout their studies. The topics of supervision could include career counseling, possibilities to reflect critical experiences and specific aspects of the doctor-patient relationship as well as ethical issues in doctors work.

8.2 Professional identities and orientations

8.2.1 Medical students' professional identities

The students most commonly described themselves as helpers, listeners and health professionals. The definitions of bureaucrat and assembly line worker were used least often to describe the students. The factor "Humanist" correlated more commonly with an interest to work in primary care, in pediatrics, in mental health service or in a 3rd world country. The factor "Rationalist" was connected to an interest in surgery or internal medicine, work in a private practice, teaching in the university, administrative work, and research in biomedicine or in a clinical field. The factor "Health promoter" was connected with an interest in primary care or pediatrics. These factors came close to the different conceptions of a good doctor (humanist clinician, authority clinician and professional clinician) presented by Järvinen (1985). Direct comparison of the results with those of graduated physicians (Kumpusalo 1994) is, unfortunately, impossible due to differences in the survey instruments used, but the findings seem congruent.

8.2.2 *Medical students' professional orientations*

The students were interested in clinical work in a hospital or a health care center or in clinical research, and the prospect of becoming a private practitioner was also appealing. In this study, medical students were found to be more interested in working in primary care than in the study concerning medical students in Turku (Niemi *et al*. 1993). Males were more commonly interested in doing operative and administrative work, whereas females were more interested in pediatrics, mental health care and work in a 3rd world country.

Medical students had variable professional identities and orientations. It seems that, for some students, the rationalistic professional role model prominent in the medical culture comes naturally. However, there also seem to be students whose orientations differ from the traditional model and who would need more support for reflecting on the experiences encountered during medical education as they are searching for an alternative professional role (Niemi and Murto 1996, Niemi 1997, 2001).

8.2.3 *Students interested in joining reflection groups*

Half of the students, and more commonly females, reported that they would like to join a reflection group. The students who had several doctors in the family or among their close friends were likely to have more information about career choices and building their professional identity and thus less likely to be interested in joining a reflection group. The students with a wider view of physician's role in society (Järvinen 1985) were more likely to be interested in joining a reflection group.

8.3 Reflection groups

The students were allowed to introduce into the reflection group discussion any issues that they had found disturbing or that needed more elaboration. Thus, one can assume that the topics talked about were especially meaningful for the participants. In telling about their experiences and emotions, the students had a chance to structure the meaning of various events and also to construct their professional identities (Holland *et al*. 1998). The discussion was confidential, and some of the issues discussed were also very personal. However, the focus in the discussion was on the importance of various experiences for the professional development, i.e. reflection-on-action (Schön, 1983). The reflection groups did not function as therapy or additional training, but served more as a way to share the evolving expertise and to enhance reflective learning (Dewey 1989/1909). Reflective learning has also been acknowledged as important in the sense that if the students are not provided a chance to elaborate on the things to be learned, their old conceptions may persist (Lonka 1997). Lindblom-Ylänne (1999) called for meaning-oriented learning as well as more interaction between teachers and students in order to support medical students' growth into integrated competence. Whereas problem-based learning (Schmidt, 1983, Walton & Matthews, 1989) focuses on cognitive aspects, reflection groups serve as a forum for integrating the emotional aspects of learning. The supervisors' role in reflection groups is to encourage the students to elaborate on various possibilities rather than to tell them how to work as a doctor. Reflection groups were found to be potentially useful tools in supporting medical students' professional development even during undergraduate medical education.

8.3.1 Discussion in reflection groups

The topics of discussion came mainly from the students' own experiences, but the experiences of relatives, friends, and older colleagues were also quoted in the discussion. In the preclinical phase and at the beginning of the clinical phase, students did not yet have a lot of clinical experience with patients, but had a need to discuss many other things they had encountered during medical education. In this sense, there is a clear difference compared to general practitioners' Balint group work, in which difficult patient cases are the main concern (Rekola 1994). The analysis of turn-taking in conversation revealed that the supervisors were quite active in the conversation. According to the answers given on the reflection sheets as well as the analysis of the meta-talk sections of the videotaped discussions, students appreciated the possibility to hear the supervisor's perspectives on the various issues discussed.

8.3.2. Lifespan of one reflection group

The most important themes. Reflection groups provided students with an opportunity to reflect on issues concerning career choice, experiences gained during medical school or while working as a doctor for the first times as well as their professional development and future career. The issues that needed most elaboration were the relationship between the student and the different socializing agents: peers, other doctors, and health care personnel as well as patients (Shuval 1975). Concerning the student-patient relationship, the most important questions were how it is possible, on the one hand, to get close to the patient, and on the other hand, to maintain the professional distance. Other important issues included the dilemmas of how to convey bad news concerning the diagnosis or prognosis to the patient or the relatives.

Themes not expressed in the discussion. The atmosphere in the group was confidential, and students also brought up very personal issues for discussion. When looking at the conversations critically, however, certain issues seemed to be absent from the group discussions: 1) *Medical language*. Students did not question the medical slang, but used it fluently. As most of the participants were clinical medical students, they were likely to take it for granted. 2) *Exams.* Students did not talk about different learning styles or how they studied for exams. There were a few references to exams in the conversation, but these were informational remarks, such as: "We have the pediatrics exam coming up next week". This suggests that the students might be accustomed to examinations and that they had found ways to cope with them. 3) *Medical treatment plans*. Students did not consult the supervisor or talk about how the patients should have been treated biomedically, but questioned the psychosocial issues of patient care. 4) *Participants' personal problems.* Even when the conversation began with a very personal narrative about, for example, the death of one's father, the discussion in the group was brought back to what all of it meant for preparing to be a doctor and how it related to one's other experiences during medical education. Issues concerning the experiences of the students' family members, relatives, or friends came up in the discussion only as examples in elaboration. 5) *Unofficial student culture.* There was no discussion in the group about parties, hobbies or other unofficial aspects of medical students' life. Apparently, these group situations were understood to serve as opportunities for professional rather than personal reflection. We can conclude that the discussion in reflection groups centered on contemporary issues relevant for the students' professional development in a wide perspective.

Innovations. Students commented that it was good to get to know that learning medicine was also mentally tough for others and that everyone had similar problems. They came to appreciate the many different ways to solve problems and agreed that one should find ways to cope with the uncertainty and possibility of making mistakes. This finding encourages the view that peers also provide support instead of only serving as social control (Shuval 1975).

8.3.3 *Supervisor's views on reflection groups*

The supervisors described learning in reflection groups as learning without education. In reflection groups, the students learned ways to deal with difficult situations by sharing experiences and getting feedback. This process could be described as reflective learning (Dewey 1989/1909, Miettinen 2000). Discussion centered on important things in the students' emotional life and their experiences during medical school (Christakis & Feudtner 1993). There was a therapeutical aspect in the reflection group work, as the students got to know themselves better, but it was not group therapy (Rekola 1994). All the supervisors of the student reflection groups either had a background in family therapy or had attended a 2-year Balint supervisor training course. An important question concerning the sustainability of reflection group activity is the kind of a formal training required from the supervisors. New supervisors would be needed in order to make the activity available for more students, but not all teachers can be expected to take such intensive training.

8.4 Narratives and medical education

The opportunity to analyze the narratives told by medical students in the reflection groups offered me a way to understand organizational beliefs, attitudes, and values (DelVecchio Good 1995, Holland *et al*. 1998) as well as the hidden curriculum of their professional socialization (Haas & Shaffir 1987, Hundert *et al*. 1996). The students' narratives of critical experiences indicate how novices to the medical culture pay attention to various aspects of the clinical practice that are taken for granted by older colleagues with longer experience. Medical students frequently discover incongruences between the intellectual and lived ideologies (Billig *et al*., 1988) of medical practice. If not elaborated on, these conflicting messages in clinical interaction may lead to moral relativism and cynicism in medical students (Hafferty & Franks, 1994).

The narratives told portrayed mainly the students' own experiences, i.e. they were personal narratives told from a student perspective. Most narratives of critical experiences during medical education were found to be about stressful or conflicting situations in clinical practice. Narratives concerning frustrating experiences in clinical situations or conflicts of status were also quite frequent. It seems that not only *Crisis*, but also experiences of *Stress, Frustration and Conflict* (Vasilyuk 1988) provoke reflection and may serve as starting-points for reflective learning and construction of professional identity.

The narratives of interaction in university hospital teaching situations illustrated the experiences that were especially important for professional socialization. As Becker and his colleagues (1963) and Sinclair (1997) have earlier claimed, the situations in which students got to observe how patients were taken care of (*Clinical Experience*) and in which they got to practise their skills (*Responsibility*) were of special importance for their professional

development. In these situations, students learn both clinical knowledge and proper professional manners and communication skills.

In clinical situations, the focus is often on learning biomedical knowledge, while psychosocial issues tend to remain peripheral (Haas & Shaffir, 1987). Especially during ward rounds, the possibility to teach students to address patients' psychosocial needs is often neglected (Weinholz, 1991). The ways of conveying bad news to the patient (Quill & Townsend, 1991, Frankel, 1995b) can and should be taught during medical education. Some attempts to include psychosocial issues in clinical instruction have already been made (Branch *et al*. 1995, Burack *et al*. 1991).

The situations in which medical students learned by doing had an influence on their professional development, partly because they then got immediate feedback on their performance. Success reinforces the student's confidence about becoming a good doctor, whereas an unsuccessful performance may cause a lot of frustration.

8.5 Dilemmas and physicians' professional identity

Medical students face numerous dilemmatic situations during their education. Part of the dilemmatic topics remained the same throughout their education, even though the specific questions asked by the students changed as a result of their increasing experience. Dilemmatic situations during medical education, in which the old way of acting is "not enough", enhance reflective learning (Dewey 1989/1909, Miettinen 2000) and the construction of one's professional identity. However, if these problem issues are not processed and elaborated on, they may also hinder learning and result in maladaptive ways to study (Lonka 1997).

Physician's professional identity evolves in learning situations involving interactional and practical activity in formal and informal situations during medical education. By participating in different activities, medical students develop expertise in the use of appropriate cultural artifacts, including medical slang, rules, laws, written records and narratives as well as concrete artifacts, such as white coats and so on (Haas & Shaffir 1982). Medical students have to convince themselves and others of their role as a future doctor. In this process, they are exposed to a dialectic tension between the roles of a student and a professional (Shuval 1975). Additionally, students may have problems in fitting together the tasks of learning medicine, working as a member of a team and caring for patients (Christakis & Feudtner, 1993).

The working hypothesis of physicians' professional identity being formed within the activity system of medical education (see Chapter 3.1.2.) proved to be inadequate. Instead, professional identity was found to be constructed by solving dilemmas in three different activity systems: Personal life, Medical school and Work. Similar results have been presented by Phelan and Davidson (1993), who studied "the multiple worlds" of high school students.

They concluded that the meanings and notions that affect school work came from the family, peer, and school cultures. Thus, they were interested in the sociocultural borders between these settings and in the strategies that students employ to move between the different contexts. They identified linguistic and structural borders. Linguistic borders refer to different ways of communicating within each of these worlds. Structural borders concern problems of availability (such as inadequate tutoring), a lack of bridges (i.e. information concerning available resources), or difficulties in matching the students' needs and the resources. Their finding concerning transition between the different worlds was that if the different worlds were congruent, i.e. if the values, beliefs, expectations, and normative ways of behaving were parallel across the worlds, the transitions between the contexts were smooth. However, if the worlds were different, the transitions needed adjustment or reorientation. Successful strategies in managing the transitions were considered to include complete or situational adaptation or a capacity to blend aspects of the different worlds. If the worlds were very different, transitions were found to involve friction and discomfort or the crossing could even become impossible. In these situations, students' learning was hindered, as the things taught at school were irrelevant to their personal lives.

The conceptions of physicians' professional role in the different activity systems may be contradictory, and a given student's personal idea of what a doctor should be like may differ from the demands of the medical school or working experience. The most interesting dilemmas concerning the construction of physicians' professional identity were found at the intersection of the three activity systems. The dilemmas concerning professionalism and the ability to control one's own feelings included questions of how to become a competent and caring doctor and how to relate medicine to their private lives (Good & DelVecchio Good, 1993). The dilemmas concerning the biomedical versus psychosocial orientation had arisen in situations encountered in learning and work, in which students felt they did not have enough time for both curing and caring (Haas & Shaffir, 1987). The dilemmas concerning communication skills and encountering death included, for example, the difficulty of conveying bad news to patients.

 The construction of physician's professional identity is a complex matter, and the problems implicit in the process cannot be solved by organizing separate study modules on critical thinking, medical ethics, or communication skills during medical education (WFME 1993). Instead, it would be important to broaden the understanding of the object of medical education, and to pay attention to the transitions between the different activity systems. For example, providing medical students possibilities for reflective learning could enhance their construction of professional identity, by facilitating the transitions between the different activity systems. Integrated ethics teaching based on reflection of the ethical dilemmas experienced by medical students during their education (Bickel, 1991) could be one way to cross the borders. Additionally, the transitions between the activity systems of Personal life and Medical education could also be facilitated by, for example, arranging possibilities for family of origin discussions, while the transitions between Work and Medical education

could be promoted by possibilities for reflection-on-action concerning the working experiences during medical education.

8.6 Strengths and limitations of the study

8.6.1 Literature review

For this work, I searched the literature concerning professional socialization and identity in various fields of science: medicine, psychology, educational science, sociology, and anthropology. I began to collect the literature based on the recommendations of my supervisors and other researchers interested in this area of research. The references of the retrieved books and articles were also checked for further sources of information.

Concerning research on medical education specifically, I made a literature search using MEDLINE covering 1966-2001. The key words used in the searches were: "professional socialization", "professional identity", "ethics", "small groups", "problem-based learning" combined with "medical education; undergraduate". Additionally, a search on relevant material concerning "professional identity" was conducted in databases of educational sciences (ERIC) and psychology (PSYCINFO). I also conducted a search of articles concerning medical education published in the two national journals, Finnish Medical Journal and Duodecim, since the 1990's as well as the relevant doctoral dissertations previously published in Finland.

I concentrated on articles specifically concerning undergraduate medical education and excluded the material concerning admission processes to medical schools, career plans, and postgraduate as well as continuing medical education. I also excluded most articles about professional orientation and identity in other professional fields, including nursing science, unless they were especially valuable for my research. Not all of the relevant and eligible original studies were available in Finnish libraries, and hence accessibility bias is probable, but it is unlikely that it would have substantially affected the overall conclusions

8.6.2 Questionnaire data

There were numerous limitations to the quantitative data. Firstly, the response rate was only moderate (63%). Due to the timing of the survey in the late spring, some of the students had already left for the summer and thus could not participate. It is likely that there was no systematic bias as to which of the students were still at the faculty at the time the survey was conducted. The students received the questionnaires in their mailboxes at the faculty and could fill it in unsupervised, which may also have contributed to the low response rate. Additionally, re-posting of the questionnaire was not possible, because the students' summertime addresses were not available at the faculty. Females were over-represented (71% of respondents vs. 66% of all medical students), but all the academic years and age groups were well represented among the respondents. Even though the set of data involves considerable limitations due to the moderate response rate, it gives an insight into the background of medical students and the learning environment in the University of Oulu. In order to test the generalizability of the results to other medical faculties in Finland, a new study with a comparative design should be performed.

There were also some deficiencies in the questionnaire design. The professional identity scale used in this research resembled the one used by Kumpusalo *et al.* (1994), but in our version the parameter "scientist" was missing, thus leading to difficulties in comparing the results. Additionally, the questions about the supervision of medical students assumed that this activity was known to all students, but it is possible that part of the respondents did not have a clear understanding of the concept, which might have affected the results. Concerning the open-ended questions, students were offered two possibilities: to report either a patient contact or a teaching situation. Separate inquiries about these issues might have produced more extensive data.

Survey data give only a superficial view of medical students' opinions. The aim of the questionnaire was to elicit descriptive data on the students' background, on perceived critical experiences and on whether they felt a need for more support during medical education. Questions about professional identity and future work orientation may give rise to biased answers, as the students had little, if any, working experience. However, students' conceptions of themselves are likely to guide their process of professional development, and thus their responses can be considered important.

In analyzing the data, frequencies and cross-tabulation were used as the main means of analysis, and factor analysis was only applied to the variables concerning professional identity. The reliability of the categorization of the open-ended questions concerning the best (kappa 0.87) and worst (kappa 0.88) experiences during medical education was checked by using inter-rater analysis. According to Altman, these values are almost perfect and speak for reliability and clarity of the categorization.

8.6.3 Video data

Concerning the video material, the reflection group participants constituted a very small, mainly female and most likely a biased sample of medical students. However, the participants of the reflection groups were valuable informants, as they were willing and able to share their perceptions concerning medical education. The atmosphere in the reflection groups was non-evaluative, safe, and confidential, which enabled the students to introduce even very delicate matters for discussion and to reveal important aspects of medical education from their own point of view. It is possible that female students feel themselves uncomfortable in the medical atmosphere and need to reflect on these emotions more than males.

One serious fault of this data was that there were only data from one preclinical group, and the transition period from preclinical to clinical education was poorly covered. Concerning the clinical phase, however, the data covered well the academic years from four to six. There was only one videotape from each group during one term. Even though the data were not necessarily comprehensive, they were likely to contain most of the essential topics. When videotaping, an effort was made not to interfere with the discussion more than necessary. The camera was placed in the room or behind a mirror, and I was not personally present. During the videotaping, the students were at first a little tense, but as the discussion proceeded, they seemed to forget about the camera. Even very delicate matters were discussed on the videotapes, which seems to indicate that the camera did not disturb the conversation too much. The videotaping could not always be arranged in the same room where the group normally met, and this could have had some effect on the atmosphere.

There were various technical problems that came up during the research process. During one recording episode, no sound was caught on the tape, and a new film had to be taken in the following session. In some tapes, the sound was not very good, but there were only a few occasions where the utterances could not be transcribed even after a close hearing. The picture on the tapes was good enough for the purposes of determining the form and the content in the discussions. A more detailed analysis of, for example, non-linguistic interaction patterns would have been impossible because two of the participants are partly outside the range of view in one of the films, and three of the films were taken so far away (in order to include everyone) that the facial expressions were hard to read.

The transcription process was actually part of the analysis. I transcribed the first videotape personally and advised my assistant based on my own experience. After receiving the initial transcripts, I read them through carefully several times and made the corrections based on reviewing the videotapes. In this process, I had to go through the data as carefully as if I had have written everything down myself. However, having a draft transcript saved me a lot of time.

The data collected were discursive, and there were no videotapes about practical learning situations. However, the fact that the students were allowed to choose the topics of discussion freely (no pre-scheduling) most likely resulted in discussion of important and current issues.

In my opinion, the data provided an ideal insight into how medical students experienced different situations and solved the dilemmas they encountered during their education.

In the data analysis, I did not look at the group process aspects, but concentrated on the content produced in the group. I did not do a very detailed analysis of the discussions, as in conversation analysis, but tried to find the essence of what was meaningful for the participants. There was no way to find out about the development of professional identity of individual students, but the data served well my aim was to look for collective, cultural issues that affect the process of physicians' professional development.

Discussion in the groups can be described as semi-institutional (Drew & Heritage 1992, Peräkylä 1997); the discussions took place in the context of a university hospital. The situations were non-evaluative and took place outside the official curriculum, and it is thus likely that the students could speak more freely than in actual learning situations. The supervisor's presence kept the conversations more organized than informal conversation among peers. One could conclude that the discussions highlighted parts of the hidden curriculum (Hafferty and Franks, 1994) or the official backstage (Sinclair 1997) of medical education. Data concerning the official aspects of medical education (such as lectures and ward rounds) as well as the unofficial aspects (such as student parties and so on) would probably have enriched the picture of the medical learning environment and physicians' identity formation.

8.6.4 Reflection sheets

Only one group was asked to fill in the reflection sheets. The sheets were mostly well filled, but after one session they were forgotten. The responses were collected from all the students that participated in the discussions, even though some respondents felt that it was difficult to fill out the evaluation immediately after the session. With this method, I was able to get answers concerning issues that could not be answered solely by looking at the videotapes. This set of data provided me with a longitudinal description of how the students participated in the sessions and information of the topics of discussion in the subsequent sessions as well as the topics perceived to be most important by the students.

8.6.5 Interviews

The purpose of the interviews was to gain background information about the supervisors' experience and to collect their perceptions concerning the reflection group activity. The interviews were semi-structured, conversation-like situations, where the order of questions varied on each occasion. Technically, the interviewing worked well and the sound on the

tapes was good. I transcribed the tapes personally, using the same transcription symbols as with the videotapes. In analyzing the interviews, I used a phenomenographic approach (Marton 1981) suited for research that does not aim at formulating a theory, but to give an idea of the conceptions held by certain people about a certain issue. The data were divided into categories and conceptions. The conceptions were not interpreted, but were used as conclusions.

8.7 Methodology – validity and reliability

In this research, a quantitative approach was used to determine how medical students perceive their education as well as their professional identities and orientations. These issues were further examined by qualitative methods for a deeper understanding of the experiences medical students encounter during their studies. Below, I will discuss briefly the differences between these methodologies and then describe in more detail the validity and reliability issues relevant to the qualitative parts of this study.

8.7.1 Quantitative and qualitative research

Quantitative and qualitative research differ in view of their knowledge interest, relationship to theory, logic of data collection and analysis, solutions to validity/reliability issues, as well as the nature of the results (Pyörälä 1994). Methodological comparisons are presented in Table 58.

Table 58. Methodological comparisons between quantitative and qualitative research (Pyörälä, 1994, modified and translated from the original by the author).

Issue	Quantitative research	Qualitative research
Knowledge interest	Explanatory	Understanding
Relationship to theory	Theory-neutral	Theory-dependent
Data collection	"Sample" of society	"Slice" of society
Data analysis	Deductive	Inductive
Validity	Ability to measure what is intended	Ability to interpret what is intended
Reliability	Ability to produce non-random results	Evaluability and credibility of interpretations
Results	Statistical correlations, causal explanations	Interpretations, thick descriptions

Qualitative research entails many alternative interpretations. Any methodological standpoint is, by definition, partial, incomplete, and historically contingent. Investigators do not get direct access to other people's experience, but have to deal with ambiguous representations of it – talk, text, interaction, and interpretation. There are at least five kinds of intermediary representations: 1) *attending to experience* (choice of what is perceived out of the totality of the primary experience), 2) *telling about experience* (directed according to the audience, shaped by all the opportunities and constraints of the form of discourse), 3) *transcribing experience* (tape recordings must be recorded as written speech), 4) *analyzing experience* (decisions about the form, ordering, and style of presentation – the anticipated response to the study inevitably shapes the decisions to include and exclude material – the analyst creates a meta-story about what happened by telling what the narratives signify and by editing and reshaping what was told), 5) *reading experience* (the reader is an agent of the text (Bruner, 1986) and brings his/her own meanings into it).

There is a notable multiplicity of evaluation methods in qualitative research due to the numerous paradigms, which are based on different epistemological, ontological, and methodological premises (Alasuutari 1993, Denzin & Lincoln 1994). Qualitative and quantitative approaches can supplement each other (Denzin & Lincoln 1994).

8.7.2 Validity of qualitative research

Validity refers to the truth and correctness of a statement. A valid argument is sound, well grounded, justifiable, and convincing. Validity is based on the relationship between the observations and the interpretations offered by the researcher. In the strictly positivistic approach, validity came to mean whether a method measures what it is intended to measure, while a broader concept of validity pertains to whether a method investigates what it is intended to investigate. The issue of what is valid knowledge involves the philosophical question of what is truth. In philosophy, the three classical criteria of truth are *correspondence* (whether a statement corresponds to the objective world), *coherence* (whether the statement is internally coherent and logical) and *pragmatic utility* (whether the statement has practical consequences). The correspondence criterion has been central in positivistic research, coherence in mathematics and hermeneutics, and the pragmatic criterion in pragmatism. (Kvale 1995).

Constructionists question scientific facts as truths; facts are seen as intersubjective constructions of the world. Knowledge is a matter of communication between persons. Truth is constituted through dialogue; valid knowledge claims emerge as conflicting interpretations, and action possibilities are discussed and negotiated between the members of the community (Mishler, 1990). Kvale (1995) outlined three approaches to validity: 1) validity as craftsmanship (choosing between interpretations, examining and providing arguments for relative credibility), 2) communicative validity (validation through communication of

knowledge), and 3) pragmatic validity (pragmatic proof through action). Below, these aspects of validity, as they are relevant in this study, are described in more detail.

Validity as craftsmanship. Validity as craftsmanship involves quality control throughout the different stages of knowledge production. This means that the findings should be continually checked, questioned, and theoretically interpreted. The findings can be tested and confirmed by, for example, checking for representativeness and researcher effects, triangulating, replicating the findings, checking out rival explanations and getting feedback from the informants. Stages of *thematizing* (theoretical soundness of the presuppositions of the study), *designing* (adequacy of the research design), *data collection* (careful questioning and continual checking of the information obtained), *transcribing* (choices of the linguistic style of the transcript), *interpreting* (logic of interpretations), *verifying* (reflected judgement) and *reporting* (valid account of the main findings of the study and the role of the readers in validating the results) should be considered in evaluating the validity of the research. (Kvale 1995).

1) Thematizing. The framework of this research was cultural-historical activity theory (Engeström 2001). Based on this theoretical framework, I came to understand the process of constructing professional identity as a historical, multivoiced, contradictory, and expansive process; medical students construct their understanding of themselves as physicians by solving dilemmas that they encounter in various situations of interaction and practical activity in their personal lives, in medical education, and in work. Narrating about emotionally significant experiences related to studying medicine and working as a doctor is another means used by medical students to construct their professional identities. I was not interested in following the construction of professional identity at the individual level, but rather wanted to find out how these things are processed by medical students in general. In this sense, videotaping medical students' reflection group discussions provided ideal data. Cultural-historical activity theory emphasizes "a historically informed phenomenographic approach" to data analysis. Part of the analysis was inductive and data-driven, part deductive and theory-driven.

2) Designing. The participants in medical students' reflection groups were a potentially biased sample of medical students in Oulu. However, they were very good informants because they were willing and able to reflect on the experiences encountered during medical education. Videotaping has been considered a good way to collect data of interaction situations involving many participants (Pyörälä 1994). The video data collected were conversational data from a group situation, which provided a chance for both cross-sectional and longitudinal analysis of reflection group activity. The amount of data collected was decided in advance, and it is thus possible that not all important topics of discussion were present on the videotapes. However, it is unlikely that additional data would have changed

significantly the conclusions of this research. In future studies, it might be interesting to study the transition period from the preclinical to the clinical phase more carefully.

In order to minimize misinterpretations, data were gathered using a combination of methods, i.e. questionnaires, interviews and videotaping (Denzin 1989, Mays & Pope 1995). This method of using multiple sources of data, known as triangulation, reflects a desire to attain in-depth understanding of reflection group activity. In qualitative research, triangulation is seen as an alternative to epidemiological validation (Denzin & Lincoln 1994). Triangulation means a combination of two or more types of data, methods, researchers, theories, or methods of analysis in the same research project (Begley 1996, Denzin 1989). Triangulation can be used to verify observations made in the course of research and to increase the validity of the findings. In this research, the findings concerning reflection group activity based on videotaped group discussions, reflection sheets and supervisors' interviews were in line with each other.

3) Data collection. The limitations of the data collection were described in detail in chapter 8.2. The videotaped data were conversations about medical students' experiences of medical education. I did not have data on the actual interaction and learning situations, but merely students' descriptions of them. However, as I was interested in how medical students perceive their education and how they construct their conceptions of themselves as future physicians, this knowledge was best achieved by paying attention to their conversation. The videotaped reflection group discussions consisted of "naturally occurring data" (Denzin & Lincoln 1994), as the sessions were not arranged for the purpose of this research, but were part of the normal practice. Thus, one can assume that videotaping did not have a significant effect on the things that were talked about.

4) Transcribing. Transcription is part of the analysis, since there is no single true representation of spoken language. By displaying text in particular ways, we provide ground for our arguments. Meanings can be constituted in very different ways with alternative transcriptions of the same stretch of talk. (Jordan & Henderson 1994). I have tried to be explicit about how the oral discourse was transformed into a written text, how the narrative segments were determined, and how the categorizations were made. The discussions were transcribed verbatim, including words and other observable features (laughing, crying, pauses). The original transcriptions were carefully checked by reviewing the videotapes repeatedly. Examples of the original data are presented in the results section, to enable the reader to make his/her own interpretations. In the phase of reporting, the examples of narratives selected for presentation were retranscribed; repetitions were excluded and slight modification were made to improve readability, but the original expressions were retained as far as possible.

5) Interpreting. In analyzing the data, I was interested in both the *form* (how something was said, structural analysis) and the *content* (ideational, substantial analysis). In structural

analysis, the topics of conversation and the boundaries of topical sequences were looked for, and reflective talking and narrative sections of the conversation were identified. In analyzing the content, narratives and dilemmas were used as intermediate concepts. According to Kohler-Riessman (1993), narrative analysis can be used especially in situations where the data are available in the form of naturally occurring, oral, first-person accounts. In this respect, video data were ideal for narrative analysis. Both inductive and deductive methods of analysis were used. All narratives and dilemmas present in the data were analyzed, to make the conclusions valid for all data. *Interpersonal aspects* were only taken into account in the analysis of turn-taking, since no transcription of the non-verbal accounts were made and the data were not technically adequate for more detailed interaction analysis (Jordan & Henderson 1994).

6) Verifying and reporting. In this research, I tried to ensure the credibility and trustworthiness of the findings by explaining my reflections and by explicating my choices throughout the process, to provide the reader with a possibility to evaluate the validity of my decisions.

Communicative validity. Communicative validity involves testing the validity of knowledge claims in dialogue (Kvale 1995, Mishler 1990). The validity of an observation is decided through argumentation. The interpretative community may include the subjects investigated or the general public. According to Kohler-Riessman (1993), persuasiveness and correspondence have to do with the question of whether the interpretations made are reasonable and convincing. The interpretations and conclusions made in this research were tested with the members of the groups the data were originally collected from.

A member check (Lincoln & Cuba 1985) was conducted to get feedback from the doctors that participated in medical students' reflection groups during their education as well as the supervisors of the groups. The parts of this research concerning reflection group activity were sent to the participants who wanted to comment on the results (17 out of 35 participants) and to all of the supervisors. My interpretations and theoretical claims were supported by the reviewers. Both the participants and the supervisors said that the important aspects of reflection group activity were highlighted in the report. The participants reported that they could remember the parts of discussion cited in this work and commented that these issues had been very influential for their professional development. The importance of the reflection groups, according to the participants, had been that they developed more self-confidence as well as confidence to tackle the psychosocial issues in patient care and got ideas for career planning and building their professional identity. Some commented that the ability to ventilate thoughts during medical education was important for them and they would consider this kind of activity important for all medical students. In future research, it would be interesting also to test the results in a larger, non-biased sample of medical students, to check the generalizability of these findings.

Pragmatic validity. To pragmatists, truth is whatever assists us to take actions that produce the desired results. For them, knowledge is action rather than observation, and the validity of a knowledge statement is assessed by whether it is accompanied by action or whether it instigates changes in action. (Kvale 1995). The pragmatic validity of this research can be discovered only by following whether the results of this research lead to any improvements in medical education.

8.7.3 Reliability of qualitative research

Qualitative research should fulfil the criteria of credibility. Credibility means that the results are understandable, and that the methods described in the report have helped one to reach the conclusions presented. Reliability can be increased by checking that there is no arbitrariness in data processing and that the interpretations are not based on random reasoning (Mäkelä 1990). Also, the technical quality of the data as well as careful transcription are important (Peräkylä 1997). If the reliability of the research is low, validity is also low (Pyörälä 1994). I have tried to explain the processing of the data (transcription of whole conversations, checking of transcripts, compilation of a content log, identification of topical sequences, dilemmas, and narratives) as clearly as possible and to provide information that will make it possible for others to determine the trustworthiness of my work by describing how the categorizations were produced, by explaining in detail what I did, and by making examples of primary data available to the readers. The results of inter-rater agreement support the reliability of the categorizations used in this research. The results showed almost perfect agreement in the categorization of the best (kappa 0.87) and worst (kappa 0.88) experiences encountered during medical education. In analyzing the narratives, agreement was moderate concerning the categorization of narratives according to the socialization perspectives (kappa 0.55) and almost perfect concerning the categorization based on critical experiences (kappa 0.92). In the dilemma categorization, the inter-rater agreement was substantial (kappa 0.78).

9 Main conclusions of the results

The question of professional identity has become important in medical education due to the changes in the physician's role in medical practice. In this study, the process of construction of physician's professional identity during undergraduate medical education was examined with multiple methods in the framework of cultural-historical activity theory. Below, the main conclusions concerning each of the research questions are presented.

1. What kinds of perceptions do medical students have of medical education?

Encountering critical situations is part of the daily practice in medical schools. Medical students feel that they would need more opportunities to discuss these experiences with their teachers, and they would also like to receive more feedback about the patients they examine during their clinical studies.

2. What types of professional orientations and identities can be found among medical students?

Medical students have varying professional orientations and identities. Especially students with a professional orientation differing from the traditional role of a physician would need more support for their professional development.

3. How do reflection groups work in medical education?

Reflection groups offered medical students a possibility to share their experiences of critical situations. The topics of discussion dealt with career choice, medical education (teaching, patient encounters, communication), working experiences and career opportunities. The use of medical students' experiences as material for reflective learning could enhance expansive learning and active construction of professional identity during undergraduate medical education.

4. What do narratives produced in reflection groups tell about medical education?

Medical students' narratives of critical experiences in the university hospital learning situations revealed parts of the hidden curriculum of professional socialization, i.e. how various clinical interaction situations lay the basis for the construction of professional identity.

5. Which dilemmas are important for the process of constructing physicians' professional identity during medical education?

In becoming professionals, medical students have to solve dilemmas encountered in three different activity systems: Personal life, Medical education and Work. The expectations applied to a future physician in these different domains may be contradictory. Medical students should be provided possibilities to elaborate especially on dilemmas concerning professionalism, communication skills, encountering death and biomedical versus psychosocial aspects of medicine during their medical education.

10 Recommendations for medical education

1. Medical students should be offered more feedback on their learning achievements as well as support for building their professional identities during undergraduate medical education.

2. Co-operation between teachers and students should be increased by, for example, designing a tutor-mentor system that would provide medical students with chances to elaborate on their emotionally disturbing, critical experiences during medical education.

3. Opportunities for reflective learning should be introduced as part of the official curriculum. Reflection on students' experiences of critical, dilemmatic situations could be used as material for learning.

4. Issues concerning the psychosocial aspects of health care, encountering death as well as various dilemmas of professional development should be tackled more thoroughly during undergraduate medical education.

5. Communication skills and ethics instruction should be integrated into the clinical practice.

6. Training for reflection group supervisors should be arranged, so that this activity could be introduced to a larger proportion of medical students.

11 Suggestions for further research

1. To verify the generalizability of the findings, a new survey with a comparative design and appropriate sampling (non-biased, high response rate) should be designed. Another possibility would be to interview a larger sample of medical students.

2. The analysis of the video data collected could be deepened by analyzing the narratives and dilemmas further or by examining the reflective parts of the conversation more closely.

3. A follow-up study on the professional development of the physicians who attended the reflection groups during their medical education could be conducted in order to follow how their conceptions have changed after graduation.

4. It might be interesting to study the transition period from the preclinical to the clinical phase in more detail.

5. Collecting conversational data from both male and female students and focusing the analysis on gender differences could enlighten the process of physicians' professional development further.

6. A methodologically novel approach would be to videotape actual learning situations, such as ward rounds, in order to document in more detail the hidden curriculum in these interaction situations.

12 References

Abbott A (1988) The system of professions: An essay on the division of expert labor. University of Chicago Press, Chicago.

Alasuutari P (1993) Laadullinen tutkimus. (Qualitative research.) In Finnish. Vastapaino, Tampere.

Albanese MA & Mitchell S (1993) Problem-based learning: a review of literature on its outcomes and implementation issues. Academic Medicine 68: 52-81.

Altman DG (1991) Practical statistics for medical research. Inter-rater agreement. Chapman and Hall, London.

American College of Physicians (1992) Ethics manual 3rd ed. Annals of Internal Medicine 117: 947-60.

Anderson HD (1997) Conversation, language and possibilities. Basic Books, New York.

Anderson HD & Goolishian HA (1988) Human Systems as Linguistic Systems: Preliminary and Evolving Ideas About the Implications for Clinical Theory. Family Process 27: 371-393.

Asetus lääketieteellisistä tutkinnoista (762/75) (Statute on medical degrees (762/75) In Finnish. Helsinki 1975.

Association of American Medical Colleges (1984) Physicians for the Twenty-First Century. The GPEP Report. Report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine. Washington.

Association of American Medical Colleges (1993) Educating Medical Students. Assessing Change in Medical Education – the Road to Implementation. The ACME-TRI Report. Washington.

Bakhtin M (1981) The Dialogic Imagination: Four Essays by M. M. Bakhtin. Ed. M. E. Holquist (ed.), Caryl Emerson and Michael Holquist (transl.). Austin, University of Texas Press.

Bakhtin M (1984) Problems of Dostojevsky's Poetics. C Emerson (ed. and transl). Minneapolis: University of Minnesota Press.

Balint M (1964) The doctor, his patient and the illness. Second and enlarged edition, Pitman Medical Publishing Company LTD, London. (1st edition 1957 by International Universities Press).

Barrows HS (1986) A taxonomy of problem-based learning methods. Medical Education 20: 481-486.

Barrows HS & Tamblyn RM (1980) Problem-based Learning. Springer, New York.

Bateson G (1972) Steps to an Ecology of Mind. Ballantine Books, New York.

Becker HS, Hughes EC, Geer B & Strauss AL (1963) Boys in white – student culture in medical school. University of Chicago Press, Chicago. (1ˢᵗ edition, 1961).

Begley CM (1996) Using triangulation in nursing research. Journal of Advanced Nursing 24: 122-128.

Bengtsson K, Reichenberg, K & Skott A (1997) Balint grupper for blivande läkare. Ett sätt att bidra till yrkesmässig mognad. (Balint groups for doctors-to-be. A way towards professional maturity?) In Swedish. Läkartidningen 94: 1605-1611.

Berger PL & Luckmann T (1967) The Social Construction of Reality. Allen Lane, London.

Bergdahl B, Koch M, Ludvigsson J & Wessman J (1990a) Läkarutbildning vid Hälsouniversitetet i Östergötland – bakgrund och principer. (Doctor education in the health university in Östergötland – background and principles.) In Swedish. Läkartidningen 87: 2163-2167.

Bergdahl B, Koch M., Ludvigsson J & Wessman J (1990b) Planering och genomförande av läkarutbildningen. (Planning and implementation of doctor education.) In Swedish. Läkartidningen 87: 2317-2321.

Bergdahl, B, Koch M, Ludvigsson J & Wessman J (1994) The Linköping Medical Programme: A Curriculum for Student-Centered Learning. Annals of Community-Oriented Education 7: 107-119.

Bertalanffy von L (1971) General Systems Theory. Foundations, Development, Applications. Allen Lane The Penguin Press, London.

Berzonsky MD (1990) Self-construction over the life-span: A process perspective on identity formation. In Neimeyer GJ & Neimeyer RA (eds.) Advances in Personal Construct Psychology 1: 155-186.

Bickel J (1991) Medical Students Professional Ethics: Defining the Problems and Developing Resources. Academic Medicine 66: 726-729.

Billig M (1987) Arguing and thinking. A rhetorical approach to social psychology. Cambridge University Press.

Billig M (1991) Ideology and opinions. Sage, London.

Billig M, Condor S, Edwards D, Gane M, Middleton D & Radley A (1988) Ideological dilemmas: a sociological psychology of everyday thinking. SAGE publications, London.

Bothelho RJ, McDaniel SH & Jones JE (1990) Using a family systems approach in a Balint-style group: an innovative course for continuing medical education. Family Medicine 22: 293-295.

Bourne S & Lewis E (1978) Research as an educational tool: experience from Balint groups. Medical Education 12: 344-350.

Branch WT, Pels RJ, Harper G, Calkins D, Forrow L, Mandell F, Maynard E, Peterson L & Arky RA (1995) A New Educational Approach for Supporting the Professional Development of Third-year Medical Students. Journal of General Internal Medicine 10: 691-694.

Brazeau C, Boyd L, Rovi S & Tesar CM (1998) A One Year Experience in the Use of Balint Groups with Third Year Medical Students. Families, Systems & Health 16: 431-436.

Brock CD & Stock R (1990) A survey of Balint group activities in U.S. family practice recidency programmes. Family Medicine 22(1): 33-37.

Bruner J (1986) Actual Minds, Possible Worlds. Harvard University Press, Cambridge, Massachusetts.

Bruner J (1987) Life as a narrative. Social Research 54: 11-32.

Bruner J (1990) Acts of Meaning. Harvard University Press, Cambridge, Massachusetts.

Bruner J (1991) The Narrative Construction of Reality. Critical Inquiry 18: 1-21.

Bucher R & Stelling J (1977) Becoming Professional. Sage, Beverly Hills, California.

Burack RC, Butler R, Frankel F, Kulesza G, Edwards A, Speece M & Beckman H (1991) The Challenging Case Conference: An Integrated Approach to Resident Education and Support. Journal of General Internal Medicine. Hanley & Belfus, inc., Philadelphia.

Burrage M & Thorstendal R (eds.) (1990) Professions in theory and history. Sage, London.

Carr D (1986) Time, Narrative, and History. Indiana University Press, Bloomington.

Christakis D & Feudtner C (1993) Ethics in a short white coat: a report on the ethical dilemmas that students confront. Academic Medicine 68: 249-254.

Cohen J (1960) A coefficient of agreement for nominal scales. Educational and Psychological Measurement 20: 37-46.

Coles C & Holm HA (eds.) (1993) Learning in Medicine. Scandinavian University Press, Oslo.

Coombs RH & Virshup BB (1994). Enhancing the psychological health of medical students: the student well-being committee. Medical Education 28: 47-54.

Cooper JAD (1985) Recommendations of the GPEP report. Journal of Medical Education 60: 145-148.

Czarniawska B (1997) Narrating the Organization. Dramas of Institutional Identity. The University of Chicago Press, Chicago and London.

Davies JL, Lindström C-G, Pollok K-H, Richet G & Schutte F (1993) Evaluation of the University of Oulu. Report of the External Visiting Group. University of Oulu, Oulu.

DeCamp Foundation (1985) Special report: Basic curricular goals in Medical Education. New England Journal of Medicine 312: 253-6.

DelVecchio Good M-J (1995) American Medicine: The Quest for competence. University of California Press. Berkeley, Los Angeles, London.

Denzin NK (1989) The Research Act. A Theoretical Introduction to Sociological Methods. Prentice Hall, Englewood Cliffs, New Jersey.

Denzin NK & Lincoln YS (eds.) (1994) Handbook of Qualitative Research. SAGE Publications Thousand Oaks.

Dewey J (1989/1909) How we think. The later works of John Dewey, edited by Jo Ann Boydston. Vol 8. Carbondale & Edwardsville: Southern Illinois University Press.

Dolmans DHJM, Wolfhagen IHAP, Schmidt HG (1996) Effects of Tutor Expertise on Student Performance in Relation to Prior Knowledge and Level of Curricular Structure. Academic Medicine 71(9): 1008-1011.

Dolmans DHJM, Wolfhagen, IHAP, Van der Vleuten CPM (1998) Motivational and Cognitive Processes Influencing Tutorial Groups. Academic Medicine 73: S22-24.

Downie RS & Charlton B (1992) The making of a Doctor. Medical education in theory and practice. Oxford University Press, Oxford.

Drew P & Heritage J (1992) Talk at work. Cambridge University Press.

Engel GL (1977) The need for a new medical model: A challenge for biomedicine. Science 196: 129-136.

Engel GL (1978) Biomedicine's failure to achieve Flexnerian standards of education. Journal of Medical Education 53: 387-392.

Engel GL (1980) The clinical application of the biopsychosocial model. Americal Journal of Psychiatry 137: 535-544.

Engeström R (1995) Voice as a communicative action. Mind, culture and activity 2: 192-215.

Engeström R (1999) Moniäänisyys lääkärin vastaanotolla. Tutkimus työhön sisältyvästä vuorovaikutuksesta. (Multivoicedness in the doctor's surgery. A study on work-related interaction.) In Finnish. Kehittävän työntutkimuksen ja aikuiskoulutuksen yksikkö, Kasvatustieteen laitos, Helsingin yliopisto.

Engeström Y (1987) Learning by expanding. An activity theoretical approach to developmental research. Orienta-Konsultit Oy, Helsinki.

Engeström Y (1992) Review of "Voices of the Mind: A Sociocultural Approach to Mediated Action". American Anthropologist 94: 999-1000.

Engeström Y (1993) Moniammatillisten tiimien toiminnan analysointi. (Analyzing activity in multiprofessional teams.) In Simoila, R et al. (1993) Mallit, kontaktit, tiimit, verkot: välineitä terveyskeskustyön analysointiin. (Models, contacts, teams, networks: tools for analyzing health care center work.) In Finnish. Stakes raportteja, 80. Helsinki.

Engeström Y (1995a) Objects, contradictions and collaboration in medical cognition: an activity theoretical perspective. Artificial Intelligence in Medicine 7(5): 395-412.

Engeström Y (1995b) Kehittävä työntutkimus – perusteita, tuloksia, haasteita. (Developmental work research – foundations, results, challenges.) In Finnish. Hallinnon kehittämiskeskus. Painatuskeskus Oy, Helsinki.

Engeström Y (1998) Communication, Discourse and Activity. The Communication Review 0: 1-21.

Engeström Y (2001) Expansive Learning at Work: toward an activity theoretical reconceptualization. Journal of Education and Work 14(1): 133-156.

Ericsson KA & Smith J (eds.) (1991) Toward a general theory of expertise: Prospects and limits. Cambridge University Press, Cambridge.

Erikson EH (1964) Insight and responsibility. Norton, New York.

Erikson EH (1968) Identity: Youth and crisis. Norton, New York.

Erikson EH (1982) Lapsuus ja yhteiskunta. (Childhood and society, 1st edition, 1950). In Finnish. Gummerus, Jyväskylä.

Eron L (1955) Effect of medical education on medical students' attitudes. Journal of Medical Education 30: 559-566.

Feudtner C, Christakis DA & Christakis NA (1994) Do Clinical Clerks Suffer Ethical Erosion? Students' Perceptions of Their Ethical Environment and Professional Development. Academic Medicine 69: 670-679.

Finnish Balint Association (1991) Lääkärin työnohjaus. Balint-ryhmät. (Guidance of doctors. Balint-groups.) Introduction in English. VAPK-kustannus, Helsinki, Finland.

Finnish Medical Association (2000) Physicians in Finland. Finnish Medical Association, Helsinki.

Flexner A (1910) Medical education in the United States and Canada: A report to the Carnegie Foundation for the advancement of teaching. Bulletin no 4, Updyke, Boston.

Foucault (1989/1973) The Birth of a Clinic. (Transl. Sheridan, A. M.) Routledge, London.

Fox RC (1957) Training for uncertainty. In Merton RK, Reader GG & Kendall PL (eds.) The student physician. Introductory studies in the sociology of medical education. Harvard University Press, Cambridge, Massachusetts.

Frankel RM (1984) From Sentence to Sequence: Understanding the Medical Encounter Through Microinteractional Analysis. Discourse Processes 7: 135-170.

Frankel RM (1990) Talking in interviews: a dispreference for patient-initiated questions in physician-patient encounters. In Psathas G (ed.) Interactional Competence. University Press of America, Lanham.

Frankel RM (1995a) Some answers about questions in clinical interviews. In Morris GH & Chenail RJ (eds.) The talk of the clinic. Lawrence Erlbaum Association, Hillsdale, New Jersey.

Frankel RM (1995b) Emotion and the Physician-Patient Relationship. Motivation and emotion 19: 163-173.

Freidson E (1970) Profession of Medicine. A study of the Sociology of Applied Knowledge. The University of Chicago Press, Chicago and London.

Freidson E (1986) Professional Powers. A study of the Institutionalization of Formal Knowledge. The University of Chicago Press, Chicago and London.

Freidson E (1994) Professionalism Reborn. Theory, Prophecy, Policy. University of Chicago Press, Chicago.

General Medical Council. (1993) Tomorrow's Doctors: Recommendations on Undergraduate Medical Education. General Medical Council, London.

Gergen KJ (1985) The Social Constructionist Movement in Modern Psychology. American Psychologist; 40: 266-275.

Gergen KJ (1987) Towards self as a relationship. In Honess T & Yardley K (eds.) Self and Identity: Psychosocial processes. Wiley, London.

Gergen KJ (1989) Warranting voice and elaboration of the self. In Shotter J & Gergen KJ (eds.) Texts of identity. Sage, London.

Gergen KJ (1991) The saturated self. Dilemmas of Identity in Contemporary Life. Basic Books, New York.

Gergen KJ (1994) Realities and relationships. Soundings in Social Construction. Harvard University Press. Cambridge, Massachusetts and London.

Gergen KJ (1999) An Invitation to Social Construction. Sage publications, London.

Good BJ (1994) Medicine, rationality and experience. An anthropological perspective. Cambrigde University Press.

Good BJ & DelVecchio-Good M-J (1993) "Learning Medicine" The Construction of Medical Knowledge at Harvard Medical School. In Lindenbaum S & Lock M (eds.) Knowledge, Power, and Practice. The Anthropology of Medicine and Everyday Life.

Grönfors M (1982) Kvalitatiiviset kenttätyömenetelmät. (Qualitative field work methods, in Finnish). Werner Söderstöm Oy, Juva.

Haas J & Shaffir W (1977) The Professionalization of Medical Students: Developing Competence and A Cloak of Competence. Symbolic Interaction 1: 71-88.

Haas J & Shaffir W (1982) Ritual evaluation of competence. The hidden curriculum of professionalization in an innovative medical school programme. Work and Occupations 9: 131-154.

Haas J & Shaffir W (1987) Becoming doctors: the Adoption of a Cloak of Competence. JAI Press, Greenwhich, Conneticut.

Hafferty FW & Franks R (1994) The hidden curriculum, ethics teaching and the structure of medical education. Academic Medicine 69: 861-871.

Hakkarainen K (2000) Problem-based learning in Medical Undergraduate Education. In Nordic Council of Ministers (2000). Towards Best Practice. Quality Improvement Initiatives in Nordic Higher Education Institutions. TemaNord 501: 87-98, Copenhagen.

Hall S (1999) Identiteetti. (Identity, in Finnish, translated by Lehtonen, M., Herkman, J.) Tammer-Paino Oy, Tampere.

Hammar M, Heijl A, Svedin C-G, Scheer J, Frisk J& Nedstrand E (1995) Kliniskt arbete in Linköpings läkarutbildning. Moment in utbildningen ersätter vikariaten. (Clinical work in doctor training in Linköping.) In Swedish. Läkartidningen 92: 1389-1390.

Harré R (1995) Necessity of personhood as an embodied being. Theory and Psychology 5: 369-373.

Harré R & Langenhove van L (1999) The Dynamics of Social Episodes. In Harré R & Langenhove van L (eds.) Positioning Theory: Moral Context of Intentional Action. Blackwell Publishers Ltd, Oxford and Malden, Massachusetts.

Hermans HJM, Kempen HJG & Van der Loon RJP (1992) The dialogical self: Beyond individualism and rationalism. American psychologist 47: 23-33.

Hicks LK, Robertson DW, Robinson DL & Woodrow SI (2001) Understanding the clinical dilemmas that shape medical students' ethical development: questionnaire survey and focus group study. British Medical Journal 322: 709-710.

Hirsjärvi S & Hurme H. (1991) Teemahaastattelu. (Theme interview.) In Finnish. 5th edition. Yliopistopaino, Helsinki.

Holland D & Reeves JR (1994) Activity Theory and the View from Somewhere: Team Perspectives on the Intellectual Work of Programming. Mind, culture and activity 1: 8-24.

Holland D, Larchicotte W Jr., Skinner D & Cain C (1998) Identity and Agency in Cultural Worlds. Harvard University Press, Cambridge, Massachusetts, and London.

Holmberg-Marttila D (1998) Ongelmalähtöinen opiskelu lääketieteen opiskelijoiden arvioimana. (Problem-based learning evaluated by students.) In Finnish. Duodecim 114(19): 1956-1961.

Homenko DF, Kohn M, Rickel T & Wilkinson ML (1997) Student identification of ethical issues in primary care setting. Medical Education 31: 41-44.

Hughes Caplow JA, Donaldson JF, Kardash C & Hosokawa M (1997) Learning in problem-based medical curriculum: students' conceptions. Medical Education 31: 440-447.

Hundert EM, Douglas-Steele D & Bickel J (1996) Context in medical education: the informal ethics curriculum. Medical Education 30: 353-364.

Hyppölä H (1997) Curriculum Renewal in the Medical Faculty of Kuopio University 1997. In Finnish, abstract in English. Kuopio University Publications F. University affairs 20, Kuopio.

Hyppölä H (2000) (ed.) Physician 1998. Report on a questionnaire study about Finnish physicians graduated in 1987-1996 and comparison with the situation ten and five years earlier. In Finnish, abstract in English. Sosiaali- ja terveysministeriö, julkaisuja 2000:10, Oy Edita Ab, Helsinki.

Hyppölä H (2001) Development and Evaluation of Undergraduate Medical Education in Finland. Ph.D. dissertation. Kuopio University Publications D Medical Sciences 237. Kuopio University Printing Office, Kuopio.

Hyppölä H, Kumpusalo E, Neittaanmäki L, Mattila K, Virjo I, Kujala S, Luhtala R, Halila H & Isokoski M (1996) Where should special attention be paid in undergraduate medical education? Two surveys among Finnish doctors. Medical Education 30: 31-37.

Hyppölä H, Kumpusalo E, Virjo I, Mattila K, Neittaanmäki L, Halila H, Kujala S, Luhtala R & Isokoski M (2000) Evaluation of undergraduate medical education in Finnish community-oriented and traditional medical faculties: a 10-year follow-up. Medical Education 34: 1016-1018.

Hänninen V (1996) Coping with Unemployment as Narrative Reorientation. Nordiske Udkast 2: 19-32.

Hänninen V (1999) Sisäinen tarina, elämä ja muutos. (Inner narrative, life and change.) PhD dissertation, summary in English. Department of Sociology, University of Tampere.

Jenkins R (1996) Social identity. Routledge, London and New York.

Jordan B & Hendersson A (1994) Interaction Analysis: Foundations and Practice. IRL report No IRL94-0027. Institute for Research on Learning, Palo Alto, California.

Järvinen A (1985) Lääketieteen opiskelijoiden tieteellisiä ja ammatillisia käsityksiä koskeva seurantatutkimus. (Medical students' scientific and professional conceptions. A follow up study.) In Finnish, abstract in English. Acta Universitatis Tamperensis, ser. A 197, Tampere.

Kaufman DM & Holmes B (1996). Tutoring in problem-based learning: perceptions of teachers and students. Medical Education 30: 371-377.

Kauppinen T (1995) Balint-ryhmätoiminta Oulun yliopiston lääketieteellisessä tiedekunnassa. (Balint group activity in Oulu University, Medical Faculty.) In Finnish. Syventävät opinnot, Kansanterveystieteen ja yleislääketieteen laitos, Oulun yliopisto. (Unpublished M.D. thesis, Department of Public Health and General Medicine, University of Oulu).

Kendall PL & Reader GG (1988) Innovations in medical education in the 1970's and 1980's. Journal of Health and Social Behaviour 29: 279-93.

Kerby AP (1991) Narrative and the self. Indiana University Press, Bloomington.

Kerridge I & Lowe M (1997) Ethics from the back row: issues confronting students and junior doctors. Student BMJ 5: 102-103.

Kiuttu J (1994) Family orientation in general practice. A study of the effects of training in family systems medicine on the work of general practitioners. Abstact and summary in English. Acta Universitas Ouluensis Medica, D 310. University of Oulu, Oulu.

Kohlberg L (1984) Essays on Moral Development. Vol. II. The Psychology of Moral Development. Harper and Row, New York.

Kohler Riessman C (1993). Narrative Analysis. Qualitative Research Methods. Sage Publications Inc., Newbury Park, California.

Kolb D (1984) Experiential learning. Experience as a source of learning and development. Prentice-Hall Inc., New Jersey.

Konttinen E (1991) Perinteisestä moderniin. Professioiden yhteiskunnallinen synty Suomessa. (From traditional to modern. Societal birth of professions in Finland) In Finnish. Vastapaino, Tampere.

Kumpusalo E, Mattila K, Virjo I, Neittaanmäki L, Kataja V, Kujala S, Jääskeläinen M, Luhtala R & Isokoski M. (1991) Medical education and the corresponding professional needs of young doctors: the Finnish Physician 88 Study. Medical Education 25: 71-77.

Kumpusalo E, Neittaanmäki L, Mattila K, Virjo I, Isokoski M., Kujala S, Jääskeläinen M & Luhtala R (1994) Professional Identities of Young Physicians: A Finnish National Survey. Medical Anthropology Quarterly. International Journal for the Analysis of Health 8: 69-77.

Kumpusalo E, Mattila K, Virjo I, Neittaanmäki L, Kujala S, Luhtala R, Halila H & Isokoski M (1995) Onko lääkärikoulutus parantunut Suomessa? (Has medical education been improved in Finland?) In Finnish. Finnish Medical Journal 50: 224-230.

Kvale S (1995) The social construction of validity. Qualitative Inquiry 1(1): 19-40.

Labov W (1972) Language in the Inner City. University of Pennsylvania Press, Philadelphia.

Lachicotte W (1992) On the borderline: Profession, Imagination and Authoring Practice of Mental Health Care. Ph.D. dissertation, University of North Carolina at Chapel Hill. University microfilms, Ann Arbor.

Larivaara P (1982) Sairauskäsitys ja terveyskeskustyö muuttumassa. (Illness conception and health care work in transition. In Finnish. Suomen Lääkärilehti (Finnish Medical Journal) 37: 553-556.

Larivaara P (1987) Frequent attender at doctors' surgeries in a Finnish health care center. Abstract and summary in English. Acta Universitas Ouluensis Series D, Medica, no 164. Oulu University, Oulu.

Larivaara P, Kiuttu J, Moilanen I, Taskinen K, Järvelin M-R, Isohanni M, Nevala K & Väisänen E (1996) Biopsykososiaalinen malli lääkärikoulutuksen perustaksi. (Biopsychosocial model as the basis for medical education, in Finnish) In Finnish. Suomen lääkärilehti (Finnish Medical Journal) 51: 2149-2153.

Larivaara P, Taanila A, Huttunen I, Väisänen E, Moilanen I & Kiuttu J (2000) From biomedical teaching to biopsychosocial education: a process of change in a Finnish medical school. Journal of Interprofessional Care 14(4): 375-385.

Larivaara P, Väisänen E & Kiuttu J (1994a) Family systems medicine: A new field of medicine. Nordic Journal of Psychiatry 48: 329-332.

Larivaara P, Väisänen E, Huttunen I, Isohanni M, Keinänen-Kiukaanniemi S, Kivelä S-L, Rimplä, A, Tienari P & Ylilehto H. (1994b) Perhe- ja yhteisölääketieteen opetus Oulun yliopistossa I. (Teaching of family systems medicine at the University of Oulu I) In Finnish. Suomen Lääkärilehti (Finnish Medical Journal) 49: 1411-1414.

Larivaara P, Väisänen E, Kiuttu J, Nurminen K, Nuutinen N, Onkila A, Sankala A, Savolainen M &Taipaleenmäki T. (1994c) Perhe- ja yhteisölääketieteen opetus Oulun yliopistossa II. (Teaching of family systems medicine at the University of Oulu II). In Finnish. Suomen Lääkärilehti (Finnish Medical Journal) 49: 1529-1532.

Larivaara P, Väisänen E, Väisänen L & Kiuttu J (1995) Training general practitioners in family systems medicine. Nordic Journal of Psychiatry 49: 191-197.

Larivaara P, Väisänen E, Moilanen I & Kiuttu J (1997) Perhe- ja yhteisölääketiede. (Family Systems Medicine.) In Finnish. Reports of the Department of General Practice 1/1997, Department of Public Health and General Pracitice, University Press, Oulu.

Lave J & Wenger E (1991) Situated Learning – Legitimate Peripheral Participation. Cambridge University Press, Cambridge.

Leinonen E, Nevala K, Lehto O, Nieminen P & Isohanni M (1995) Lääketieteen opiskelijoiden stressin aiheuttajat ja oireet (Medical students' stress in Finland). In Finnish. Suomen Lääkärilehti (Finnish Medical Journal) 49: 2459-2463.

Lella JW & Pawluch D (1988) Medical students and the cadaver in social and cultural context. In Lock, M., Gordon D. R. (1988) Biomedicine Examined. Kluwer Academic Publishers.

Leotnjev AN (1978) Activity, Consciousness, and Personality. Prentice-Hall, Englewood Cliffs.

Leontjev AN (1981) Problems of the Development of Mind. Progress, Moscow.

Levenstein S (1980) An undergraduate Balint group in Cape Town. South African Medical Journal 59: 642-643.

Levenstein S (1982) An undergraduate Balint group in Cape Town - a follow-up report. South African Medical Journal 62: 89-90.

Lidz T (1968) The person. His development through the life cycle. Basic Books, New York.

Lincoln YS & Cuba EG (1985) Naturalistic inquiry. Sage, Beverly Hills.

Lindblom-Ylänne S (1999) Studying in a traditional curriculum – study process, orientations to studying and problems that arise. Helsinki University Press, Helsinki.

Liuhanen A-M (ed.) (1993) Report on the Self-Assessment of the University of Oulu, University of Oulu.

Lonka K (1997) Explorations of constructive process in student learning. Department of Psychology, University of Helsinki. Helsinki University Press.

Lonka K (2001) The Helsinki 2000 Curriculum: Challenges and solutions in transforming traditional curriculum into PBL. In Mandle H, Putz R, Peter K & Höfling S (eds.) Lernmodelle der Zukunft – am Beispiel der Medizin (Learning models for the future – examples of medicine). Springer Publishing.

Luban-Plozza B (1995) Empowerment techniques: from doctor-centered (Balint-approach) to patient-centered discussion groups. Patient Education & Counseling 26(1-3): 257-63.

Luban-Plozza B (1996) Kommunikation und Balint-Gruppen. In Erinnerung an Mihály Balint.(Communication and Balint groups. In memoriam of Michael Balint.) In German. Schweizerische Ärztezeitung, Heft 51/1996: 2092-2093.

Malinen A (2000) Towards the essence of adult experiential learning. A reading of the theories of Knowles, Kolb, Mezirow, Revans and Schön. SoPhi, Jyväskylä University Printing House, Jyväskylä.

Marcia JE (1966) Development and validation of ego identity status. Journal of Personality and Social Psychology 3: 551-558.

Marton F (1981) Phenomenography – describing conceptions of the world around us. Instructional Science 10: 177-200.

Mays N & Pope C (1995) Rigour and qualitative research. Brittish Medical Journal 311: 109-112.

McDaniel S, Campbell T & Seaburn D (1990) Family oriented primary care. A manual for medical providers. Springer Verlag, New York.

McDaniel S, Hepworth J & Doherty W (1992) Medical Family Therapy: A Biopsychosocial Approach to Families with Health Problems. Basic Books, New York.

Mehan H (1993) Beneath the skin and between the ears: A case study in politics of representation. In Chaiklin S & Lave J (eds.) Understanding Practice. Cambridge University Press, Cambridge.

Mezirow J (ed.) (1990) Fostering critical reflection in adulthood. A guide to transformative and emancipatory learning. Jossey-Bass, San Francisco.

Merton RK, Reader GG & Kendall PL (eds.) (1957) The student physician. Introductory studies in the sociology of medical education. Harvard University Press, Cambridge, Massachusetts.

Metcalfe DHH (1989) The Edinburgh Declaration. Family Practice 6: 165-166.

Miettinen R (1993) Kehittävän työntutkimuksen metodologisia kysymyksiä. (Methodological questions of developmental work research.) In Finnish. Psykologia 28: 441-445.

Miettinen R (2000) The concept of experiential learning and John Dewey's theory of reflective thought and action. International Journal of Lifelong Education. Vol 19(1): 54-72.

Mishler EG (1984) The discourse of medicine: Dialectics of medical interviews. Ablex, Norwood.

Mishler EG (1986) Research Interviewing. Context and Narrative. Harvard University Press, Cambridge, Massachusetts and London.

Mishler EG (1990) Validation in Inquiry-Guided Research: The Role of Exemplars in Narrative Studies. Harvard Educational Review 60: 415-442.

Mishler EG (1995) Models of Narrative Analysis: A Typology. Journal of Narrative and Life History, vol. 5: 87-123.

Mishler EG (1999) Storylines. Craft Artists' Narratives of Identity. Harvard University Press, Cambridge, Massachusetts and London.

Murto M (1996) Lääketieteen opiskelijan ammatillinen kasvu. Turun yliopiston lääketieteellisessä tiedekunnassa syksyllä 1991 opintonsa aloittaneiden ammatillinen orientaatio, identiteettikehitys ja reflektiivinen ajattelu neljän ensimmäisen opintovuoden aikana. (Medical students' professional development. Professional orientation, identity development and reflective thinking of medical students during the first four years of medical education.) In Finnish. Unpublished M.Sc. Thesis, in Finnish. Department of Education, University of Turku.

Mäkelä K (1990) Kvalitatiivisen aineiston analyysi ja tulkinta. (Analysis and interpretation of qualitative data.) In Finnish. Oy Gaudeamus Ab, Helsinki, Finland.

Mäntyranta T (1996) Simuloidut potilaat. Kirjallisuuskatsaus. (Simulated patients. Unpublished literature review.) In Finnish. Medical Faculty, University of Helsinki.

Mäntyranta T, Lonka K, Järvinen A & Pitkälä K (1996a) Raportti ja esitys juonteen jatkamisen tarpeesta kliiniseen vaiheeseen. (A report on teaching communication skills in the clinical phase of studying.) In Finnish. Medical Faculty, University of Helsinki.

Mäntyranta T, Strandberg T & Perheentupa J (1996b) Simuloidut potilaat. Loppuraportti. (Simulated patients. Final report.) In Finnish. Medical Faculty, University of Helsinki.

Naukkarinen M-L & Lonkila P (eds.) (1999) Opinto-opas 1999-2001 (Study guide 1999-2001.) In Finnish. Medical Faculty, University of Oulu. Oulu Universtiy Press, Oulu.

Neufeld VR & Barrows HS (1974) The "McMaster Philosophy": an approach to medical education. Journal of Medical Education 49: 1040-1050.

Neufeld VR, Woodward CA & MacLeod SM (1989)The McMaster M.D. Program: a Case Study of Renewal in Medical Education. Academic Medicine 64: 423-432.

Nevala K, Leinonen E, Pokkinen V, Nieminen P & Isohanni M (1996) Lääketieteen opiskelijoiden stressiä tasapainottavat tekijät (Factors balancing stress in medical students). In Finnish. Suomen Lääkärilehti (Finnish Medical Journal) 50: 316-319.

Nevala K (1997) Perceived Need for Support During Undergraduate Medical Education in the University of Oulu. Abstract, 17th Annual Family in Family Medicine Conference, Kiawah Island, South Carolina, USA, March 5-9,1997.

Nevala K (1998) Constructing professional identity – medical students' reflection groups in action. Abstract, 4th Congress of the International Society for Cultural Research and Activity Theory, University of Aarhus, Denmark, June 7-11, 1998.

Nevala K (2000a) Constructing professional identity – explorations of the student culture in medicine. Abstract, Finnish Medical Society Duodecim,10th Seminar on Developing Medical Education – Research in Medical Education, Gustavelund, Tuusula, Finland, February 10-11, 2000.

Nevala K (2000b) Reflection groups as tools for learning. Abstract, Innovations in Higher Education, University of Helsinki, Finland, August 30 – September 2, 2000.

Nevala K, Väisänen E & Larivaara P (1995) Growing Up to Be a Healthy Healer: Family Balint Groups for Medical Students in the University of Oulu, Finland. Abstract, 15th Annual Family in Family Medicine Conference, Amelia Island, Florida, USA, March 1-5, 1995.

Niemelä A, Reponen J, Räsänen M, Saloheimo P & Vuopala K (eds.) (1985) Juhlakirja – Oulun lääketieteellinen kilta 1960-1985. (Anniversary book – Oulu Medical Students' Guild 1960-1985.) In Finnish. Oy Liiton kirjapaino, Oulu, Finland.

Niemi P (1997) Medical student's professional identity: self-reflection during the preclinical years. Medical Education 31: 408-415.

Niemi P (2001) Identiteetti, muutos ja toimintaympäristö. (Identity, change and environment.) In Finnish. Psykologia 1-2: 18-28.

Niemi P & Murto M (1996) Oppimispäiväkirjat lääketieteen opiskelijan ammatillisen itsereflektion kuvaajina. (Medical students' learning logs in describing early professional reflection.) In Finnish. Duodecim 112: 1792-1801.

Niemi P & Vainiomäki P (1999) Medical Students' Academic Distress, Coping, and Achievement Strategies During Preclinical Years. Teaching and Learning in Medicine 11(3): 125-134.

Niemi P, Vainiomäki P & Rimpelä M (1993) Lääkäriksi vuonna 2000. Turun lääketieteellisen tiedekunnan opintouudistuksen ensimmäinen lukuvuosi 1991-1992. (Becoming a doctor in the year 2000. First semester of the curriculum reform in Turku medical faculty.) In Finnish. STAKES, Raportteja 122, Helsinki.

Norell J (1991) The International Balint Federation: past, present, and future. Family Practice 8(4): 378-381.

Norman GR (1988) Problem Solving Skills, Solving Problems and Problem Based Learning. Medical Education 22: 279-286.

Norman GR & Schmidt HG (1992) The Psychological Basis of Problem-based Learning: A Review of the Evidence. Academic Medicine 67: 557-565.

Norusis MJ (1995) SPSS 6.1 for Windows – Guide to data analysis. Prentice-Hall Inc. Eaglewood cliffs, New Jersey.

Olesen VL & Whittaker EW (1970) Critical notes on sociological studies on professional socialisation. In Jackson J (ed.) Professions and Professionalization. Cambridge University Press, London.

Olmstedt A & Paget M (1969) Some theoretical issues in professional socialisation. Journal of Medical Education 44: 663.

O´Toole J (1995) The story of ethics: Narrative as a means for ethical understanding and action. Journal of American Medical Assocation 273: 1387-90.

Ottosson J-O (1999) Patient-läkarrelationen. Läkekonst på ventenskaplig grund. (Patient-doctor relationship. Doctoring on a scientific basis.) In Swedish. SBU publications, Stockholm.

Parsons T (1951) The Social System. Routledge and Kegan Paul, London.

Patton MQ (1987) How to use qualitative methods in evaluation. Sage publications, Newbury Park.

Patton MQ (1990) Qualitative evaluation and research methods. Sage publications, Newbury Park.

Pellegrino ED (1976) Medical ethics, education and the physician's image. Journal of American Medical Association 235: 1043-1044.

Pellegrino ED (1989) Teaching Medical Ethics: Some Persistent Questions and Some Responses. Academic Medicine 64: 701-703.

Pellegrino ED, Hart RJ, Henderson SR, Loeb SE & Edwards G (1985) Relevance and Utility of Courses in Medical Ethics. A Survey of Physicians' Perceptions. Journal of American Medical Association 253: 49-53.

Penuel WR & Wertsch JV (1995) Vygotsky and Identity Formation: A sociocultural approach. Educational Psychologist 30(2): 83-92.

Peräkylä A (1997) Institutionaalinen keskustelu. (Institutional conversation) In Tainio L (ed.) Keskustelun analyysin perusteet (Basics of conversation analysis) In Finnish. Vastapaino, Tampere.

Phelan P, Davidson AL & Yu HC. (1993) Students' Multiple Worlds: Navigating the Borders of Family, Peer, and School Cultures. In Phelan P & Davidson AL (eds.) Renegotiating Cultural Diversity in American Schools. Teachers College Press, New York.

Pitkälä K, Mäntyranta T, Pauna A-R, Korhonen M & Heinänen T (2000a) Portfolio oppimisen välineenä lääketieteessä. (Portfolio as a tool for learning in medicine.) In Finnish. Duodecim 116: 137-143.

Pitkälä K, Mäntyranta T, Strandberg T, Mäkelä M, Vanhanen H & Varonen H (2000b) Evidence-based medicine – how to teach critical scientific thinking to medical undergraduates. Medical Teacher 22: 22-26.

Puustinen R (1999) Bakhtin's philosophy and medical practice – Toward a semiotic theory of doctor-patient interaction. Medicine, Health Care and Philosophy 2: 275-281.

Pyörälä E (1994) Kvalitatiivisen terveystutkimuksen metodologisia perusteita. (Methodological premises of qualitative health research.) In Finnish. Sosiaalilääketieteen aikakauslehti (Journal of Social Medicine) 31: 4-14.

Quill TE, Townsend P (1991) Bad News: Delivery, Dialogue, and Dilemmas. Archives of Internal Medicine 151: 463-468.

Rauste- von Wright M-L & von Wright J (1994) Oppiminen ja koulutus (Learning and education.) In Finnish. WSOY, Juva.

Rautio A, Nuutinen M & Väyrynen M (1999) Student Abuse in Oulu University. Acta University Ouluensis F 7, University of Oulu, Oulu.

Rekola J (1979) Ongelmia hoitosuhteessa – työnohjaus avuksi? (Problems in care relationship – might supervision help?) In Finnish. Suomen lääkärilehti (Finnish Medical Journal) 34: 17-22.

Rekola J (1994) Hoitosuhteen kehittäminen. Balint-ryhmätoiminnan kokemuksia perusterveydenhuollossa. (Developing the care relationship. Experiences of Balint groups in primary health care.) In Finnish. STAKES, Raportteja 142, Helsinki.

Ricoeur P (1984) Time and Narrative. Vol. 1. University of Chicago Press, Chicago and London.

Ricoeur P (1991) Narrative identity. Philosophy Today 35: 3-81.

Rimpelä M, Niemi P, Hyssälä L, Koivusilta L, Ojanlatva A, Rautava P & Vainiomäki P. (1992) Hyvä lääkäri –teema lääketieteen perusopetuksessa. (Good doctor as a topic in undergraduate medial education.) In Finnish. Suomen lääkärilehti (Finnish Medical Journal) 47: 2293-2296.

Rimpelä M, Niemi P & Vainiomäki P (1994) Vuorovaikutus ja lääkärin työ lääketieteen perusopetuksessa. (Communication and doctor's work in undergraduate medical education.) In Finnish. STAKES, Aiheita 21, Helsinki.

Riska EK (1990) Strategies in the Education of Humane Physicians. Scand J Soc Med 18: 161-164.

Riska E & Vinten-Johansen P (1981) The involvement of behavioral sciences in American medicine: A historical perspective. International Journal of Health Services 11: 583-596.

Roine MA (1986) Doctor as a Member of a Team. Medical Teacher 8: 377-381.

Rosenwald GC & Ochberg RL (eds.) (1992) Storied lives: The cultural politics of self-understanding. Yale University Press, New Haven, CT.

Saari E (1995) Voidaanko tutkimusryhmiä perustaa? Tapaustutkimus Valtion teknillisen tutkimuskeskuksen metallilaboratorion ryhmäkokeilusta vuosina 1989-1991. (Can research teams be founded? A case study of Metals Laboratory's team experimentation in 1989-1991 at the Technical Research Centre of Finland.) In Finnish, abstract in English. Valtion teknillinen tutkimuskeskus, VTT tiedotteita 1627, Espoo.

Sacks H, Schegloff E & Jefferson G (1974) A simplest systematics for the organization of turn-taking for conversation. Language 50(4): 696-735.

Salo M & Lackman M (1998) The history of the University of Oulu 1958-1993. In Finnish, summary in English. University of Oulu, Oulu.

Sankala, Nuutinen & Nurminen (1996) Lääkärikoulusta ammattiin. (From medical school to profession. In Finnish. Suomen lääkärilehti (Finnish Medical Journal) 50: 2637-2640.

Satterwhite III WM, Satterwhite RC & Enarson CE (1998) Medical Students' Perceptions of Unethical Conduct at One Medical School. Academic Medicine 73(5): 529-531.

Scherpbier A, van der Vleuten C, Rethans J & van der Steeg A (1997) Advances in Medical Education. Kluwer Academic Publishers, Dordrecht.

Schmidt HG (1983) Problem-based learning: rationale and description. Medical Education 17: 11-16.

Schmidt HG (1993) Foundations of problem-based learning: some explanatory notes. Medical Education 27: 422-432.

Schmidt HG & Moust JHC (1995) What Makes a Tutor Effective? A Structural-equations Modelling Approach to Learning in Problem-based Curricula. Academic Medicine 70(8): 708-714.

Schön DA (1983) The reflective practitioner. Temple Smith, London.

Schön DA (1992) The crisis of professional knowledge and the pursuit of an epistemology of practice. J. Interprof. Care 6: 49-63.

Seikkula J (1994) Sosiaaliset verkostot. Ammattiauttajan voimavara kriiseissä. (Social networks - the resource of professional helpers in crises.) In Finnish. Kirjayhtymä, Helsinki.

Seikkula J (1998) Dialogi on muutos – Voloshinovin ja Bahtinin semiotiikka psykoterapian kuvaamisessa. (Dialogue is change – Voloshinov's and Bakhtin's semiotics in describing psychotherapy) In Finnish. Psykologia 3/1998.

Self FJ, Wolinsky FD & Baldwin Jr FD (1989) The Effect of Teaching Medical Ethics on Medical Students' Moral Reasoning. Academic Medicine 64: 755-759.

Self DJ, Schrader DE, Baldwin DC & Wolinsky FD (1993) The moral development of medical students: a pilot study of the possible influence of medical education. Medical Education 27: 26-34.

Seppälä O (1977) Balint-ryhmä toiminnasta. (On Balint group activity.) In Finnish. Helsingin lääkärilehti (Helsinki Medical Journal) 1: 7-11.

Shapiro J & Miller R (1994) How Medical Students Think about Ethical Issues. Academic Medicine 69: 591-593.

Shorter E (1985) Bedside Manners. The Troubled History of Doctors and Patients. Simon and Schuster, New York.

Shotter J (1984) Social accountability and selfhood. Blackwell, Oxford.

Shotter J (1989) Social accountability and the social construction of "you". In Shotter J & Gergen KJ (eds.) Texts of identity. Sage, London.

Shotter J (1995) A "Show"of Agency is Enough. Theory & Psychology 5(3): 383-390.

Shotter J & Gergen KJ (1989) Texts of identity. Sage, London.

Shuval JT (1975) From "boy" to "colleague": process of role transformation in professional socialization. Social Science and Medicine 9: 413-420.

Shuval JT & Adler I (1980) The role models in professional socialisation. Social Science and Medicine 14A: 5-14.

Sinclair S (1997) Making doctors. An institutional apprenticeship. Berg, Oxford and New York.

Simoila R (1993) Fenomenografia laadullisena tutkimusotteena. (Phenomenography – a way to do qualitative research.) Abstract in English. Hoitotiede (Nursing Sciences) 5(1): 21-30.

Smith SR, Balint JA, Krause KC, Moore-West M & Viles PH (1994) Performance-based Assessment of Moral Reasoning and Ethical Judgement among Medical Students. Academic Medicine 69: 381-386.

Somers M (1994) The narrative construction of identity: A relational and network approach. Theory and Society 23: 605-649.

Sorjonen M-L, Peräkylä A & Eskola K. (ed.) (2001) Keskustelu lääkärin vastaanotolla. (Conversation in doctors' surgery.) In Finnish. Vastapaino, Tampere.

Sosiaali- ja terveysministeriö (1997) Lääkärikoulutuksen aloituspaikkatarve sekä erikoislääkärien määräennusteet ja koulutustarve vuoteen 2010 saakka. (Medical education admissions, forecast of the number of medical specialists and need for specialist education by the year 2010.) In Finnish. Lääkärityövoiman laskentatyöryhmä IV:n muistio, Sosiaali- ja terveysministeriön työryhmämuistioita 13:1997, Helsinki.

Starr (1982) Social Transformation of American Medicine. Basic Books, New York.

Svedin C-G & Koch M (1990) Patientkontakt, helhetssyn och samtalskonst. (Patient contact, holistic view and communication skills.) In Swedish. Läkartidningen 87: 2471-2473.

Taylor C (1989) Sources of the self. The Making of a Modern Identity. Harvard University Press, Cambridge.

Thomas RE (1997) Problem-based learning: measurable outcomes. Medical Education 31: 320-329.

Tiuraniemi J (1994) Reflektiivinen ammattikäytäntö. (Reflective professional practice, in Finnish). Täydennyskoulutuskeskus, University of Turku.

Tupola S (1990) Yleinen lääkärioppi. Katsaus historiaan ja nykyisyyteen. (General Iathrology – history and presence.) In Finnish. Medisiinari 7: 6-8.

Turpeinen-Alitalo K (1987) Rosina Heikel 1842-1929. In Parvio S, Wegelius R (ed.) Suomen Naislääkäri Yhdistys r.y. 1947-1987. (Finnish female physicians' association 1947-1987) In Finnish. Helsinki.

Uhari M, Kokkonen J, Nuutinen M., Vainionpää L, Rantala H, Lautala P & Väyrynen M. (1994) Medical student abuse - an international phenomenon. JAMA 271: 1049-1051.

Uutela A, Helkama K & Salminen S (1982) Korkeakouluopiskelijoiden ammatillinen sosiaalistuminen. Lääketieteen opinnot aloittaneiden sosiaalinen tausta, sosiaaliset arvot, minäkuva ja ammattikuva kevät- ja syyslukukaudella 1981. (Professional socialization of students in higher education. Medical students' social background, social values, self-image and professional image in spring and autumn semesters 1981.) In Finnish. Research reports 3/82, Department of Social Psychology, University of Helsinki.

Vainiomäki P (1995) Kasvamassa lääkäriksi. Tutkimus juonneopetuksen suunnittelusta, toteutumisesta ja vaikutuksista tiedekunnassa vuosina 1989-1993. (Growing up to be a doctor. A study on the planning, implementation and outcomes of an early patient contact programme at the Faculty of Medicine, University of Turku in 1989-1993.) Abstract in English. Annales Universitas Turkuensis ser. C 117, Univesity of Turku.

Vasilyuk F (1988) The Psychology of Experiencing. An Analysis of How Critical Situations Are Dealt With. Progress Publishers, Moscow.

Vernon DTA & Blake RL (1993) Does Problem-based Learning Work? A Meta-analysis of Evaluative Research. Academic Medicine 68: 550-563.

Vinten-Johanssen P & Riska E (1991) New Oslerians and Real Flexnerians: the Response to the Threatened Professional Autonomy. International Journal of Health Services 21(1): 75-108.

Virjo I, Mattila K, Kumpusalo E, Neittaanmäki L, Kujala S, Luhtala R & Isokoski M (1995) Uutta tutkimustietoa lääkärikunnasta. (New research results concerning doctors.) In Finnish. Finnish Medical Journal 50: 220-223.

Virkkunen J (1994) Toiminnan kehitysvyöhykkeen tutkiminen kertomusten avulla – esimerkki virastojen yhdistämisestä. (Exploring the zone of proximal development of an activity through stories – the case of an organizational merger.) In Finnish. Hallinnon tutkimus 1: 47-63.

Vuori H (1979) Lääketieteen historia – sosiaalihistoriallinen näkökulma. (History of medicine – social historical perspective.) In Finnish. Gummerus, Jyväskylä.

Vuoria P (1989) Sairaala Suomessa. (Hospitals in Finland.) In Finnish. Oy Ultima Thule, Oulu.

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

Vygotsky L (1981) The genesis of higher mental functions. In Wertsch (ed.) The concept of activity in Soviet psychology. Sharpe, Armonk, New York.

Vygotsky L (1987) Thinking and Speech. Plenum, New York.

Väisänen E, Naarala M & Lehtinen V (1980) Balint-ryhmätoiminta ja mielenterveystyö terveyskeskuksissa. (Balint group activity and mental health care in health care centers.) In Finnish. Suomen Lääkärilehti (Finnish Medical Journal) 35: 2573-2577.

Walton HJ & Matthews MB (1989) Essentials of Problem Based Learning. Medical Education 23: 542-558.

Wahlström J (1992) Merkitysten muodostuminen ja muuttuminen perheterapeuttisessa keskustelussa. Diskurssianalyyttinen tutkimus. (Constructing and changing meanings in family therapy discourse.) Summary in English. Studies in Education, Psychology and Social Research 94. University of Jyväskylä, Finland

Weinholz D (1991) The Socialization of Physicians During Attending Rounds: A Study of Team Learning Among Medical Students. Qualitative Health Research 1(no2): 152-177.

Wertsch JV (ed.) (1985) Culture, communication and cognition: Vygotskian perspectives. Cambridge University Press.

Wertsch JV (1991) Voices of the mind: A sociocultural approach to mediated action. Harvard University Press, Cambridge.

WFME (1988) The Edinburgh Declaration. World Federation for Medical Education, Edinburgh.

WFME (1993) The World Summit on Medical Education – Recommendations. World Federation for Medical Education, Edinburg.

White M & Epston D (1990) Story, Knowledge and Power. In Narrative Means to Therapeutic Ends. W. W. Norton, New York.

Ylilehto H (1997) Mihin kallistuu kansanterveystiede? (Where is public health going?) In Finnish. Publications of the office of education 5/1997, Oulu university, University Press.

Appendixes

Appendix 1a.   Kyselylomake suomeksi. (Questionnaire in Finnish)

I TAUSTATIEDOT

1. Kurssi   C _____
2. Sukupuoli   1   mies   2   nainen
3. Ikä _____ vuotta

4. Siviilisääty   1   en seurustele vakituisesti   4   naimisissa
                     2   naimaton, seurustelen vakituisesti   5   eronnut
                     3   naimaton, asun avoliitossa

5. Jos vastasit edelliseen 2-4, onko kumppanisi   kyllä   ei
            lääketieteen opiskelija?   1   2
            lääkäri?   1   2
            muulla terveydenhuoltoalalla?   1   2
            muulla alalla?   1   2

6. Onko sinulla lapsia?   1   ei   2   kyllä, montako? _____

7. Työskenteleekö kukaan läheisistä sukulaisistasi tai ystävistäsi terveydenhuoltoalalla?
            1   ei
            2   ainakin yksi on terveydenhuollon tehtävissä, mutta ei yhtään lääkäriä
            3   lähipiirissä on yksi lääkäri
            4   lähipiirissä on useita lääkäreitä

II AMMATILLINEN ORIENTAATIO JA AMMATILLINEN IDENTITEETTI

8. Oletko jo ajatellut, millaisissa tehtävissä haluaisit työskennellä valmistuttuasi? Arvioi omaa mielenkiintoasi seuraaviin tehtäväalueisiin. Olen kiinnostunut

	paljon	jonkin verran	en lainkaan	en osaa sanoa
Sairaalalääkärin työ	1	2	3	4
Terveyskeskuslääkärin työ	1	2	3	4
Yksityislääkärin työ	1	2	3	4
Hallinnolliset tehtävät	1	2	3	4
Työ yliopiston opettajana	1	2	3	4
Tutkimustyö biolääketieteessä	1	2	3	4
Tutkimustyö kansanterveystieteessä	1	2	3	4
Tutkimustyö kliinisellä alalla	1	2	3	4
Kirurgin työ/toimenpidevaltainen ala	1	2	3	4
Sisätautilääkärin työ	1	2	3	4
Lastenlääkärin työ	1	2	3	4
Mielenterveystyö	1	2	3	4
Lääkärinä kehitysyhteistyössä	1	2	3	4

9. Miten hyvin seuraavat lääkärin työtä kuvaavat ilmaisut vastaavat sinua tulevana lääkärinä?

	erittäin hyvin	melko hyvin	melko huonosti	erittäin huonosti	en osaa sanoa
parantaja	1	2	3	4	5
teknikko	1	2	3	4	5
opettaja	1	2	3	4	5
perhelääkäri	1	2	3	4	5
terveyskasvattaja	1	2	3	4	5

virkamies	1	2	3	4	5
yrittäjä	1	2	3	4	5
terveysasiantuntija	1	2	3	4	5
lääkkeiden määrääjä	1	2	3	4	5
"liukuhihnatyöntekijä"	1	2	3	4	5
kutsumuslääkäri	1	2	3	4	5
auttaja	1	2	3	4	5
lohduttaja	1	2	3	4	5
kuuntelija	1	2	3	4	5
sosiaalisen työn tekijä	1	2	3	4	5
auktoriteetti	1	2	3	4	5
lähimmäinen	1	2	3	4	5

II KOKEMUKSIA LÄÄKETIETEEN OPINNOISTA

10. Jos nyt olisit valitsemassa opiskelupaikkaa aloittaisitko lääketieteen opinnot?

      1 kyllä   2 en

11. Kuinka hyvin yleisesti ottaen lääketieteen peruskoulutus vastaa odotuksiasi?

    1 erittäin hyvin
    2 melko hyvin
    3 melko huonosti
    4 erittäin huonosti
    5 en osaa sanoa

12. Kuinka tyytyväinen olet seuraaviin osatekijöihin?

	erittäin tyytyväinen	melko	melko	erittäin tyytymätön	en osaa sanoa
ammatin ja opiskelualan yleinen luonne	1	2	3	4	5
opiskelupaikka (Oulun lääket. tdk)	1	2	3	4	5
tiedekunnan ilmapiiri	1	2	3	4	5
killan ilmapiiri	1	2	3	4	5
kurssin ilmapiiri	1	2	3	4	5
opetuksen järjestelyt ja laatu	1	2	3	4	5
muu, mikä _____	1	2	3	4	5

13. Millainen on nykyinen opiskelumotivaatiosi?

    1 erittäin hyvä   4 erittäin huono
    2 melko hyvä   5 en osaa sanoa
    3 melko huono

14. Millainen on nykyinen opiskelumotivaatiosi suhteessa aikaan, kun aloitit opinnot?

    1 parantunut
    2 pysynyt ennallaan
    3 huonontunut
    4 en osaa sanoa

15. Millaiseksi koet opiskelutahtisi?

    1 jatkuvasti liian keveä   4 usein liian kireä
    2 usein liian keveä   5 jatkuvasti liian kireä
    3 kohtuullinen tai vaihteleva

16. Miten raskaana tai kevyenä pidät opiskelua henkisesti?

    1 jatkuvasti liian kevyttä   4 usein liian raskasta
    2 usein liian kevyttä   5 jatkuvasti liian raskasta

3   kohtuullista

17. Voitko mielestäsi vaikuttaa   kyllä   en   en osaa sanoa
          opintojesi tahtiin   1   2   3
          opetuksen sisältöön   1   2   3

18. Saatko mielestäsi riittävästi palautetta   kyllä   en   en osaa sanoa
          potilaiden tutkimisesta?   1   2   3
          tenteistä?   1   2   3

19. Kuinka tärkeinä pidät seuraavia opintoaloja tulevaa työtäsi ajatellen?

	tärkeä	melko tärkeä	ei tärkeä	en osaa sanoa
Hoitotiede	1	2	3	4
Ehkäisevä lääketiede	1	2	3	4
Terveyskasvatus	1	2	3	4
Psykologia	1	2	3	4
Terveyden sosiologia	1	2	3	4
Etiikka	1	2	3	4
Lääketieteen historia	1	2	3	4
Tieteellisen tutkimuksen perusteet	1	2	3	4
Terveydenhuollon hallinto	1	2	3	4
Psykiatria	1	2	3	4
Yleislääketiede	1	2	3	4

20. Tunnetko tarvetta lisäopetukseen seuraavilla alueilla tulevaa työtäsi ajatellen?

	kyllä	jonkin verran	en	en osaa sanoa
Potilaan haastattelu	1	2	3	4
Potilaan kliininen tutkiminen	1	2	3	4
Laboratoriotutkimusten käyttö	1	2	3	4
Hoitopäätösten tekeminen	1	2	3	4
Esiintymistaito	1	2	3	4
Johtamistaito	1	2	3	4
Neuvottelutaito	1	2	3	4
ATK lääkärin työssä	1	2	3	4
Muu, mikä?_____	1	2	3	4

IV OPISKELIJOIDEN HENKINEN JAKSAMINEN JA TUKIPALVELUT

21. Minulla on riittävästi mahdollisuuksia keskustella vaikeista potilastapauksista/opetustilanteista

	kyllä	ei	en osaa sanoa
-perheeni/ystävieni kanssa	1	2	3
-kurssikavereiden kanssa	1	2	3
-vanhempien opiskelijoiden kanssa	1	2	3
-opettajien kanssa	1	2	3

22. Minulla on opiskelun ohessa riittävästi aikaa

-itselleni	1	2	3
-ystävilleni	1	2	3
-harrastuksilleni	1	2	3

23. Oliko pienryhmäohjausta mielestäsi riittävästi opintojen alussa?
          1   kyllä   2   ei, mitä olisit toivonut lisää? _____

24. Olen halukas osallistumaan Balint-työnohjaukseen.
                              1 kyllä   2 ei   3 en osaa sanoa

25. Toivoisitko saavasi lisää   kyllä   en   en osaa sanoa

	kyllä	en	en osaa sanoa
-opinto-ohjausta?	1	2	3
-tietoa uravalinnan mahdollisuuksista?	1	2	3
-henkilökohtaista neuvontaa?	1	2	3
-työnohjausta?	1	2	3

-muuta, mitä?_____

26. Kenen toivoisit järjestävän lisää tukea/ohjausta?

	kyllä	ei	en osaa sanoa
-kurssikavereiden	1	2	3
-vanhempien opiskelijoiden	1	2	3
-vastavalmistuneiden lääkäreiden	1	2	3
-prekliinisten laitosten opettajien	1	2	3
-kliinisten laitosten opettajien	1	2	3
-opintosihteerin	1	2	3
-YTHS:n psykologin	1	2	3
-YTHS:n psykiatrin	1	2	3
-psykiatrian klinikan	1	2	3

-jonkun muun, kenen? _____

27. Minkä muotoista tukea/ohjausta haluaisit?

	kyllä	ei	en osaa sanoa
-yksilöllistä neuvontaa (oma tutor)	1	2	3
-kaikille avoin pienryhmä	1	2	3
-kiinteä (esim. Balint) pienryhmä	1	2	3
-seminaarityyppinen keskustelutilaisuus	1	2	3
-luento	1	2	3

-muu, mikä? _____

28. Missä vaiheessa ohjausta haluaisit?
         1   vain opintojen alussa
         2   prekliinisen vaiheen ajan
         3   kliinisen vaiheen ajan
         4   koko opiskeluajan

29. Kuinka usein haluaisit ohjauksen tapahtuvan?
         1   aina tarvittaessa
         2   kerran viikossa
         3   kerran kahdessa viikossa
         4   kerran kuukaudessa
         5   harvemmin

30. Kuvaile lyhyesti ikävin opetustilanne/potilaan kohtaaminen, johon olet joutunut opiskeluaikanasi.
_____
_____
_____
___

31. Kuvaile lyhyesti mukavin opetustilanne/potilaan kohtaaminen, johon olet joutunut opiskeluaikanasi.
_____
_____
_____
___

Appendix 1b. Questionnaire in English.

I SOCIODEMOGRAPHIC BACKGROUND

1. Academic year _____
2. Gender   1   male   2   female
3. Age _____ years

4. Marital status 1   not dating steady   4   married
                   2   not married, dating steady   5   divorced
                   3   not married, co-habiting

5. If your answer to the previous questions was 2-4, is your partner   yes   no
                   a medical student?   1   2
                   a doctor?   1   2
                   other health care professional?   1   2
                   emploied in another field?   1   2

6. Do you have children?   1   no   2   yes, how many? _____

7. Does any of your closest relatives or friends work in health care?
                   1   no
                   2   at least one works in health care, but none of them are doctors
                   3   at least one doctor among my closest relatives or friends
                   4   many doctors among my closest relatives or friends

II PROFESSIONAL ORIENTATION AND PROFESSIONAL IDENTITY

8. Have you already thought about what you would like to do after graduation?   Please, assess your interest in the following areas.

	Very much	I am interested Somewhat	Not at all	Cannot say
Work in a hospital	1	2	3	4
Work in a health care center	1	2	3	4
Work in a private practice	1	2	3	4
Administrative work	1	2	3	4
Teaching at the university	1	2	3	4
Research in biomedicine	1	2	3	4
Research in public health	1	2	3	4
Research in a clinical field	1	2	3	4
Surgery/other operative field	1	2	3	4
Internal medicine	1	2	3	4
Pediatrics	1	2	3	4
Mental health	1	2	3	4
Work in a 3rd world country	1	2	3	4

9. How well do the following expressions describe you as a future doctor?

	Very well	Quite well	Cannot say	Quite poorly	Very poorly
healer	1	2	3	4	5
technician	1	2	3	4	5
teacher	1	2	3	4	5
family physician	1	2	3	4	5
health educator	1	2	3	4	5
bureaucrat	1	2	3	4	5
entrepreneur	1	2	3	4	5

health professional	1	2	3	4	5
prescriber	1	2	3	4	5
assembly-line worker	1	2	3	4	5
vocational doctor	1	2	3	4	5
helper	1	2	3	4	5
comforter	1	2	3	4	5
listener	1	2	3	4	5
social worker	1	2	3	4	5
authority	1	2	3	4	5
fellow man	1	2	3	4	5

III PERCEPTIONS OF MEDICAL EDUCATION

10. If you were, at the present, making your career choice, would you choose medicine?

       1 yes   2 no

11. How well does medical education meet your expectations in general?

    1 very well
    2 quite well
    3 quite badly
    4 very badly
    5 cannot say

12. How satisfied are you with the following aspects of medical education

	very satisfied	quite satisfied	quite unsatisfied	very unsatisfied	cannot say
Nature of the profession in general	1	2	3	4	5
Place of study (Oulu Medical Faculty)	1	2	3	4	5
Atmosphere in the faculty	1	2	3	4	5
Atmosphere in the student union	1	2	3	4	5
Atmosphere among your class mates	1	2	3	4	5
Organization and quality of teaching	1	2	3	4	5
Something else, what _____	1	2	3	4	5

13. Describe your motivation to study at the present?

    1 very good   4 very bad
    2 quite good   5 cannot say
    3 quite bad

14. Describe your motivation to study <u>at the present</u> compared to the time when you started studying medicine?

    1 increased   3 decreased
    2 remained the same   4 cannot say

15. How do you feel about the pace of studying?

    1 all the time too slow   4 often too tight
    2 often too slow   5 all the time too tight
    3 reasonable or varying

16. How tough or easy do you consider medical education to be mentally?

    1 all the time too easy   4 often too tough
    2 often too easy   5 all the time too tough
    3 reasonable

17. Can you, in your opinion, affect   yes   no   cannot say

	yes	no	cannot say
the pace of your studies	1	2	3
the content of your studies	1	2	3

18. Do you get enough feedback

	yes	no	cannot say
about examining patients?	1	2	3
about exams?	1	2	3

19. How important do you consider the following fields of study to be for your future work?

	Important	Quite important	Not important	Cannot say
Nursing science	1	2	3	4
Preventive medicine	1	2	3	4
Health promotion	1	2	3	4
Psychology	1	2	3	4
Sociology of health	1	2	3	4
Ethics	1	2	3	4
History of medicine	1	2	3	4
Basics of scientific research	1	2	3	4
Administration	1	2	3	4
Psychiatry	1	2	3	4
General medicine	1	2	3	4

20. Do you feel a need for additional instruction in the following areas when considering your future work?

	yes	somewhat	no	cannot say
Taking the history	1	2	3	4
Performing physical examinations	1	2	3	4
Using laboratory tests	1	2	3	4
Clinical decision-making	1	2	3	4
Performing skills	1	2	3	4
Leadership skills	1	2	3	4
Negotiation skills	1	2	3	4
Using computers	1	2	3	4
Something else, what?_____	1	2	3	4

IV PERCEIVED NEED FOR SUPPORT DURING MEDICAL EDUCATION

21. I have enough possibilities to discuss difficult patient cases or teaching situations with

	yes	no	cannot say
-family or friends	1	2	3
-peers	1	2	3
-older medical students	1	2	3
-teachers	1	2	3

22. I have enough time, along with my studies, for

	yes	no	cannot say
-myself	1	2	3
-my friends	1	2	3
-my hobbies	1	2	3

23. Was the introduction of new students to the faculty satisfactory?

          1   yes   2   no, what else would you have liked to know? _____

24. I am willing to join a reflection group

          1 yes   2   no   3 cannot say

25. Would you like to get more counseling on yes   no   cannot say
-studying?   1   2   3
-career issues?   1   2   3
-personal issues?   1   2   3
-professional issues?   1   2   3
-something else, what?_____

26. Would you like to get more support from?
                                                yes   no   cannot say
-peers   1   2   3
-older medical students   1   2   3
-young doctors   1   2   3
-preclinical teachers   1   2   3
-clinical teachers   1   2   3
-academic counselors   1   2   3
-students' mental health services   1   2   3
-Department of Psychiatry   1   2   3
-someone else, whom? _____

27. What form of support would you like to get?
                                                yes   no   cannot say
-personal tutor   1   2   3
-open small group   1   2   3
-closed small group (like reflection group)   1   2   3
-seminar   1   2   3
-lecture   1   2   3
-some other form, what? _____

28. At which stage of studies would you like to get more support?
                1   only at the beginning of studies
                2   during the preclinical phase
                3   during the clinical phase
                4   throughout the studies

29. How often would you like to get support?
                1   whenever I feel I need it
                2   once a week
                3   once in two weeks
                4   once a month
                5   less often

30. Describe briefly the best teaching situation or patient encounter that you have encountered during your medical education.
_____
_____
_____

31. Describe briefly the worst teaching situation or patient encounter that you have encountered during your medical education.
_____
_____
_____

Appendix 2.

Substance sequences in the videotaped reflection group conversations.

R1: spring 1994, participants (n=7) from academic years 3-6, one had graduated, two males, beginning of the group's lifespan
Death of one's father
Caring in emergency situations – how to handle it professionally?
Practical work
Participation of a patient or a relative in the care
Encountering sorrow - can it be taught?
Growing up to be a doctor
Physical contact

R2: autumn 1996, participants (n=5) from many academic years (3 graduated, 2 studying their 5th and 6th year), all female, end of the group's lifespan
Chatting about studying and exams
Experiences of working in a health care center
Applying for jobs
Future and work
General remarks about doctors' work
Personal working experiences
Consultations and collegiality
Patient case from a health care center

S1: autumn 1996, participants (n=5) in their 5th or 6th academic year, one male, in the middle of the group's lifespan
Psychiatry in general
Attitudes towards patients in small group situations
Public attitudes towards mental illnesses
Cultural differences in attitudes towards mental health problems
Shame of getting ill - possibility of getting ill oneself
Depression
Atmosphere of competition
Specialization and doing research
Conducting research
Working as a general practitioner
Doctor and economic considerations
Doctor and family

S2: autumn 1997, participants (n=6) from different academic years (1 graduated, four in their 6th year, one in her 5th year), one male, end of the group's lifespan
Reading for exams
Experiences of the health care center visit during education
News about the supervisor's patient
Working at the Clinic of Pediatrics
About children
About teaching others
Graduation anxiety
Warning of a strike
Searching for a job abroad
First experiences of working as a doctor
Consultation of friends and relatives
"Doctor's bag"
Self-treatment and treatment of relatives
About prescribing antibiotics
Changing roles (candidate as a relative, being a doctor to another doctor)
Conducting research at the Department of Psychiatry

J1: spring 1997, participants (n=8) in their 4th academic year, all female, beginning of the group's lifespan
Death - pathology and forensic medicine courses
Acting during the autopsies and one's own reactions
Patient - corpse
Respecting the deceased
Black humor
Respecting the living patients
Encountering a dying patient
Empathy versus professional conduct
Giving hope, telling the prognosis

J2: autumn 1997, participants (n=7) in their 5th academic year, two 6 months ahead of the others, all female, in the middle of the group's lifespan
General issues about studying
Resuscitating for the first time - Should I have continued resuscitation?
Bringing bad news to the relatives
On the relationship between doctors and nurses
Male versus female candidates
Listening to others' opinions
Bringing bad news
How to tell the patient about the diagnosis or prognosis?

J3: spring 1998, participants (n=3) in their 6th academic year, all female, end of the group's lifespan
Experiences of health care center work – patient cases
Time-management, on-call arrangements, caring for the patient
Feedback from patients
Working experiences
Different working places
Taking care of oneself

T1: spring 1997, participants (n=5) in their 1st academic year, one in her 2nd year, one male, beginning of the group's lifespan

Experiences of the first study year
Dissection course (supervisor's topic)
Choosing the medical career
Empathy and distancing
Back to studying and career choice
Applying to medical school
Reactions from the environment towards a medical student
Time-management
Experiences of the supervisor – monologue
Narratives of the supervisor
International experiences

SS1: spring 1999, participants (n=7) in their 4th academic year, all female, beginning of the group's lifespan

Safety at work
One's own chronic illness and studying medicine
"Candidate's illness"
Health education and motivating the patients
Communication with elderly patients
Doctor-patient relationship
About the forensic medicine course

SS2: autumn 1999, participants (n=6) in their 5th academic year, all female, in the middle of the group's lifespan

News of the group participants - baby and dissertation
About the gynecology course – a week in the central hospital and patient cases
About giving birth
Qualifications of a gynecologist
Aborting fetuses
Pregnant women in health care centers who want abortion
Ethics and health promotion
Sexual harassment in the hospital environment
About on-call work in health care centers

Appendix 3.

Questions used in the interviews of the supervisors.

1. What kind of supervision training do you have?
2. What kind of previous supervision experience do you have?
3. Would you describe briefly the history of the student group you lead?
4. What kind of students, in your opinion, attend reflection groups?
5. Can you recall any meaningful memories or narratives from the group discussions?
6. What kind of learning occurs in reflection groups?
7. How does the discussion reflect medical students' experiences of medical education?
8. How do you view the supervisor's role in the groups?
9. What is, in your opinion, the most essential thing for the functioning of students' reflection groups?
10. How do students' reflection groups differ from doctors' Balint groups?
11. How do you view the differences between reflection group activity and group psychotherapy?
12. Are there any other issues you would like to share concerning medical students' reflection group activity?