Chapter 12
Learning Professional Practice Through Education

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Introduction

In this chapter, we discuss a case of professional learning in higher education with a particular focus on health care. We focus in particular on what aspects of professional education become visible if we shift our viewpoint from a cognitive learning perspective on professional education, which has been the dominant conceptual framework for problem-based learning, to a practice theory perspective, viewing this case of professional education as a practice, or a set of practices, in itself.

We have chosen the field of health care as the context of our attention because it is rapidly changing. Communication and collaboration with both the patient and with other health-care professionals have become even more important capabilities than before, not least when it comes to providing safe, high quality care. There are increasing demands on health professionals' abilities to participate knowledgeably in these changes, as well as in the development of their professions and professional education (Frenk et al. 2010).

Introducing a practice theory perspective on pedagogy on professional health-care education might allow a new gaze on a field that for a long time has been

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dominated by cognitive discourses about how to improve students' learning in higher education, where many attempts are made to reorganise and rethink educational design in order to prepare students better for professional health-care practice and to reduce the 'theory-practice gap'. Research on learning in higher education, which has often been used to argue for such reform initiatives, has to a large extent emphasised learning from a cognitive perspective, focusing on students' understanding of central concepts within their field of study. A tentative conclusion to be drawn from this research is that universities have not been overly successful with regard to the impact on students' learning. Several studies have shown students' understandings of central concepts in their disciplines to be weak (Marton et al. 1984), and the transition to work life has many times been described as a 'practice shock' (Stokking et al. 2003). Fenwick argues that traditional approaches for most current pre-service education and training do not take into account recent practice-based understandings that recognise that knowing emerges in action with settings, people, activities and objects (Fenwick 2009, 2010).

Against this backdrop, our starting point is the need for professional educators to understand how, and if, professional education in higher education can be arranged to support the development of learning outcomes that reside in the realm of practice. A possible way of achieving this could be to alter the lens through which we view professional education. Instead of seeing professional education as *preparing* for practice, a perspective on professional education *as* a practice, or a set of practices, can possibly enable us to make visible dimensions that may be of importance for the arrangement of professional learning within the frames of higher education and to deconstruct the idea of a 'theory-practice gap'.

In this chapter, we seek to accomplish such a shift of lenses through the analysis of a case of professional health-care education from a practice-theory perspective. We will use Kemmis' (2009) synoptic framework for understanding and researching professional practice and also Schatzki's (2001, 2002) theorisations of practice to make visible the connections between the set-up of organisational, productive and communicative relationships embedded in the curriculum and health-care practice. We show how the curriculum connects to health-care practice and hangs together *discursively* by (a) using representations of practice as the very starting point for learning rather than beginning by teaching disciplinary concepts and (b) modelling the structure of the curriculum thematically rather than on a disciplinary basis and (c) enacting a common model of learning activities based on interaction and collaboration.

Further, we will discuss how the *socio-material arrangements* of the educational activities prefigure a practice of interprofessional collaboration between professional health-care workers-to-be. The authors have been participating in the development of the educational approach and in undergraduate teaching in the professional programmes, which in one sense enables an insiders' view on the educational arrangements. We also step back from the immediate context of health professional education to relate these insights to our experiences of research on student learning and the relationship between higher education and work life more generally (Abrandt Dahlgren 2010; Reid et al. 2011).

Setting the Scene: The Linköping Model of Professional Health-Care Education

The context of our case is the Faculty of Health Sciences at Linköping University, Sweden. The reasons for choosing this case are that, since 1986, a common pedagogical approach has been used for all study programmes, including physiotherapy, occupational therapy, social care management, speech and language therapy, medical bioscience, biomedical laboratory science, nursing and medicine (Kjellgren et al. 1993). The case thus draws on a 25-year history of documented organisational and curriculum reform within one pedagogical framework: problem-based learning (PBL).

This pedagogical approach has been based on an integration of biomedical disciplines and clinical specialities and collaboration between students from different programmes in interprofessional tutorial groups. The interprofessional learning (IPL) activities are carefully staged and reoccur throughout and across the different professional programmes. Over the years, evaluations in national and international reviews of the programmes, for example, the medical and nursing programmes, have demonstrated favourable results (Swedish National Agency for Higher Education 2007; Antepohl et al. 2003; Faresjö et al. 2007).

The underlying conceptual structure of PBL as a pedagogical approach can be described as moments of understanding over time of how to improve student learning, with the pragmatic intention of moving the context of learning closer to the context of application of knowledge (Barrows 1985), drawing on cognitive theories of the function of human memory and its implications for learning (Norman and Schmidt 1992) and phenomenographic research on learning in higher education (Marton and Booth 1997). More recently, these perspectives have been supplemented with a social constructivist emphasis on the social dimension of learning, where meaning is constructed in interaction with others (Savery and Duffy 1995). Summarising these previous understandings of the rationale for the applied pedagogical approach, the dominant focus has been on the student, the thinking and learning processes and what can be done in terms of pedagogical arrangements in order to support learning.

A Practice Theory Perspective on Professional Education

What then can a practice theory perspective on an educational approach contribute? If we recognise the materiality and local nature of knowledge production and knowledge relations in enacted professional activities, where professional learning is understood as a matter of negotiating different knowledge resources in the moment of activities, what consequences does this bring for professional education? What are the connections to health-care practice? How can enactment of professional activities contribute to the critical study of curriculum and to the conceptualisation of professional learning?

Kemmis (2009) suggests that the study of practice should think 'relationally on how the individual is made by the social and how the social is made by individuals, and how things seen from the inside appear from the outside and *vice versa*' (p. 21). Applying such a perspective means dissolving the dichotomies between the subjective–objective and making visible the connections that cut across these dimensions. Actions and interactions that make up a practice are always shaped by mediating preconditions that structure how the practice is realised in material arrangements (set-ups), words and discourse (sayings) and in how people act and interact in physical and material space-time (doings). The preconditions also mediate the networks of relationships between the people it includes and excludes (relatings). Our intentions here are to showcase some of the arrangements that have been developed and how the sayings, doings and relatings are connected in the practice of student learning within the context of PBL-based pedagogies. Of course, our viewpoint here can only be an outside observation of how the connections between sayings, doings and relatings are constituted by students – indeed, the lived experience of participation in this particular learning practice would tell a different story.

Historically, the rationale for PBL pedagogy has developed and changed meanings and theoretical frameworks over time, as we mentioned above. This development can be viewed as an example of how practice is always transformative (Kemmis 2009) and changes existing states of affairs in the dimensions of semantic space, (sayings), physical and material space and circumstances (set-ups and doings) and social space (relatings). Kemmis argues that practice is reflexive and develops and transforms in the light of critical reflection on those features in relation to a particular situation, particular participants and a particular moment in history.

If we look at PBL as a practice today, we can note that the emphasis on arrangements for collaboration, communication and quality improvement can be linked to a broader debate in health care that has greatly emphasised cooperation for quality of care and for patient safety. WHO has been an important actor in emphasising interprofessional education in 'Learning Together To Work Together For Better Health' already in 1988 (WHO 1988) and most recently (2010) in the report 'Framework for Action on Interprofessional Education and Collaborative Practice'. Quality in health care is ultimately about the patients' health and life and, it is argued, is dependent on collaboration between different actors in the health-care system, professionals, future professionals, patients and families. In the discussions about safety in health care, it has also been emphasised that the ever-increasing complexity and sophistication of the technical equipment used in health care has called for a corresponding specialisation among professionals. This is a development that calls for effective and safe interprofessional communication. Conditions relating to cooperation, learning and communication between different groups of professionals in health care have been cited as significant (Wallin and Thor 2008; Higgs et al. 2004). Interprofessional collaboration has also been emphasised as important in the ongoing debate about the everyday, practical quality work of health-care professionals that is usually described as 'improvement knowledge' (the ability to continually reflect upon and, if necessary, change the daily work routines and structures) (Batalden and Davidoff 2007; Hofseth Almås 2007). The international attention to interprofessional cooperation is currently

extremely high (Barr 1998, 2002; WHO 2010), not least in the context of patient safety issues linked to poor communication between professional groups (Wallin and Thor 2008; Bleakley et al. 2006).

In the following section, we will take a closer look at the 'set-ups' and 'doings' of the professional education practice of our case and discuss how the practice of health care is represented and enacted.

Using Representations of Health-Care Practice as the Starting Point for Learning

One of the most typical 'doings' is that all study programmes use problem-based learning from day 1, working with health-care scenarios in small tutorial groups as their basic working form. The material arrangements that position students face-to-face around a table prefigure a practice where not only the content of learning but the practice of learning to work together are emphasised. Working with scenarios means that students work with various representations of professional practice, functioning as tools for their inquiry to formulate common and individual goals for learning. Green (2009) analyses and discusses the problem of representation of practice as a mentalistic and cognitive phenomenon, which presupposes an objectivist theory of knowledge, not embedded in practice. Green suggests there is a need of reformulating representation 'within, and as part for an adequate theory of practice'. If we bring this reasoning to the problem-based learning tutorial, the group of students discuss together what their understanding of the scenario is and proceed by problematising the case in relation to their present and common ability of making sense of the situation presented. The scenario contains no information or directives of what actions to be taken; the group needs to negotiate that among themselves.

These immediate 'doings' are clearly connected to the discursive dimension of the practice. There is a suggested model available of how to proceed stepwise to use each others' capacities in order to arrive at a more informed understanding of the case. They continue by formulating questions, in which they aim at self-directed inquiry into the basic medical disciplines as well as into the social and psychological issues necessary to understand the outlined scenario. The scenarios materialise as written short descriptions of a patient case, a video clip or a picture, interactive computer-based patient records, etc., all demonstrating practice-based, everyday scenarios and events that students are likely to encounter in their work as health professionals.

The connection between the 'doings' and the 'sayings' here can be described as a deliberate attempt at giving primacy to practice. Beginning the learning process in this way means that theoretical concepts are never presented up front, but instead discerned from their most common practice contexts, and also analysed and understood within the same practice. This is a pedagogical strategy aiming at deconstructing the gap between theory and practice that often gets prefigured through the idea of education, when theoretical concepts are presented in a decontextualised,

disciplinary structure, with the presupposition of later to be applied in practice. The use of scenarios, where patients/clients' stories are told, can also be seen as a way of introducing 'the voice of the life-world' as the starting point for learning into the realm of health-care education, where the 'voice of medicine' usually is the most dominating discourse. These two concepts were introduced by Mishler (1984), in his studies of patient-physician encounters in health care, where he noticed that the patients' lived experience of their diseases quickly became silenced and were instead translated into medical vocabulary.

There is, however, a risk that the idea of representing practice through scenarios might not work as the intended open-ended tool for understanding, if the connections between 'sayings' and 'doings' do not allow for the learners to explore and ask the questions they need in order to understand. Margetson (1998) has pointed to the fact that there is a variety in what role the problem/scenario plays in problem-based curricula. The problem might just be a 'convenient peg' on which students can hang their predetermined factual knowledge needed to pass the examinations. In such cases, there is actually no change in comparison with educational approaches that determine from the outset what theoretical concepts students should learn and later, supposedly, apply to practice. If the intention is to really give primacy to practice, scenarios need to be viewed as a 'growing web' of understanding, in which there is no predetermined right or wrong answer and which can change depending on what questions are asked and actions taken, just as in health-care practice itself.

Prefiguring a Practice of Collaboration

In the process of discussing the scenarios, the students work from either a particular professional health-care perspective, or they work together in interprofessional groups to discern how the respective professional perspectives contribute to the understanding of the problem at stake. Lectures, resource events and different kinds of skills training sessions and laboratory work are also included in all programmes, but they are seen as activities to support the students' work to problematise and understand the scenarios, rather than as a curriculum that is taught up front. Analysing the pedagogy as a practice, we may argue two things: first, that the mode of working causes professional attributes such as communication skills and abilities to negotiate and handle conflicts to surface. These are to be seen as dimensions of health-care practice that cut across and can be enacted within the practice of health professional education. Second, representations of practice are used within the educational setting with the deliberate intention to prefigure and shape practices in health care, already from the outset of study programmes. In doing this, the pedagogy prefigures a health-care practice of collaboration and interaction, where different professional perspectives as well as the clients' perspectives are needed to accomplish safe health care with high quality. More research is needed to show how the students configure and enact the prefigured practice, as well as how the practice is reconfigured and transformed through their reflection on practice.

In this section, we began our analysis of how the 'doings' of our case of health-care education practice connect to the 'sayings' of the same practice. In the next section, we will inquire more deeply into the 'sayings' by examining how the preconditions structure and mediate the way the practice is constituted discursively.

Modelling the Curriculum on a Thematic Rather Than a Disciplinary Basis

The professional curricula of our case have different foci, but share a common precondition, in that they have a thematic and spiral design, mediating learning from complex scenarios. The thematic structure of the curriculum means that complex body functions such as, for example, 'breathing', are studied through the integration of basic disciplines such as anatomy, physiology, biology, etc., instead of through sequencing and separation of the basic disciplines. The thematic structure could be viewed as a constructive alignment (Biggs 1999) with and connected to the use of scenarios as the starting point for learning. The spiral structure means that the themes recur over the course of time, but employ different perspectives. The themes are also closely related to health-care practice in different practice contexts, for example, the normal functioning of the human being, the disturbed functioning and the clinical manifestations. The different perspectives on the recurring themes throughout the curriculum aim at supporting students learning, through a process of iteration rather than simple repetition.

The rationale for what content is to be included in the curriculum is based on the idea of vertical exemplarity, rather than on horizontal representation (Dahlgren 1993). Vertical exemplarity means that the themes are dealing with problems that are the 'eternal problems' most commonly encountered in practice in order to make it possible for students to explore and enquire. Horizontal representation means that the curriculum is based on the idea that 'everything' should be represented, which by necessity will lead to a too crammed schedule, leaving very little room for students to problematise or explore.

The preconditions mediating 'relatings', that is, the people the practice includes, that are unique for our case, are the set-ups of the interprofessional learning events. These set-ups are part of the dynamic interplay between the policy level, the organisational level, the curriculum level and the activity level. The interprofessional learning events at the curriculum level follow a similar spiral structure as described above, in the iteration between different perspectives. In the early phase of the curriculum, the perspective of a common foundation for health-care work across professions is emphasised. In the middle phase of curriculum, the scope is the discernment of professional perspectives. The third cycle of interprofessional activities at the end of the curriculum emphasises the perspective of clinical collaboration. In all three cycles, understanding of the patient scenario presupposes relatings between different professional perspectives and includes the students, the clinical supervisors and the patients.

It is important, however, to understand another set of 'relatings', mediating and enabling these 'sayings' and 'doings' of the curriculum, and that includes other actors. These are the organisational structures and dynamics of the faculty, where a Board of Integration is a powerful actor given the responsibility and mandate for the planning and arrangement of the educational activities with interprofessional learning in focus across the faculty. The Director of Studies for the interprofessional curricula is also represented on the Board of Undergraduate Education, together with the directors of the different programmes. All decisions about interprofessional educational activities apply to all programmes, with the same learning goals, etc., meaning that connections across the different professional programmes are reinforced and thereby made sustainable.

At the policy level, an important mediating condition for the development and realisation of these pedagogical arrangements is the close collaboration with the County Council of Östergötland. County Councils in Sweden are the regional bodies which govern health-care practice. The Faculty of Health Sciences and the County Council of Östergötland have agreed on a common strategy with the aim at supporting excellence in health care, health-care education and research and collaborate in a number of groupings to accomplish this.

In the following sections, we will give some empirical examples of how the arrangements for interprofessional learning are embedded in the professional curricula and demonstrate how 'sayings', 'doings' and 'relatings' hang together in this practice. The three cycles of interprofessional activities comprise the course Health, Ethics and Learning, parts 1 and 2, and the final cycle comprises the Student Training Ward. We focus on how the socio-materiality of professional practice is realised within the curriculum of the professional programmes.

A Socio-Material Framework for Curriculum Development

First Cycle: Health, Ethics and Learning, Part 1

The first cycle, Health, Ethics and Learning, part 1 (HEL1), has been effective since the beginning of the Faculty of Health Sciences in 1986. It is a 7-week course that constitutes the very first learning experience for all undergraduate students when they arrive to the University. This means that the first experience of professional learning is actually an interprofessional one, a set of arrangements and doings, attempting at recognising that knowing emerges in action with settings, people, activities and objects. The rationale is 'learning together to enable working together'. The students come together in interprofessional study groups, and at this early stage, the professional identification is primarily built on expectations, rather than experiences of a professional perspective.

The aim of this first interprofessional event is therefore not to discern differences between professional perspectives, but to learn the common and fundamental concepts in health and disease, how to work to promote health and not least create a common ground of values by becoming aware of ethical dilemmas in health care.

Following the idea that a common set of values may also be claimed as essential interprofessional competencies, Wilhelmsson (2011) describes five domains of meta-knowledge that are addressed at this early stage of interprofessional collaboration. These are (1) team work and group processes, (2) reflection and documentation, (3) communication, (4) a general common knowledge base and (5) ethics, all of which are central to collaboration in health care. Adopting a practice theory perspective, these domains actually constitute and realise the socio-materiality of health-care practice within the professional curriculum in a tangible way. The domains mentioned above cut across the practices of education and learning and are here enacted in curriculum practice. For all of these, particular learning activities are arranged. To give one example from the domain of communication, learning activities can comprise of video-recording the enacted interaction in the tutorial group. The expected learning outcome of that activity is to learn about one's own roles and functioning in groups.

Another example is the verbalisation and discussion of differences in professional cultures, languages and actions in the group. The expected learning outcome of this activity would be to create an awareness of the need of a common language between professionals (Wilhelmsson 2011). In 2008, and as a response to the broader discourse about health care, safety and quality, quality improvement was introduced as a new domain of meta-knowledge. This new domain was introduced as a new set of 'doings'. The students undertake a personal improvement project where they make use of basic tools for quality improvement of an aspect of their everyday life. The projects are presented and evaluated at the end of the course and make up an important foundation for the coming interprofessional quality improvement projects later in the programme. The first experiences of interprofessional collaboration end after 7 weeks of the undergraduate programmes, as the students start their profession-specific studies.

In the next section, we will focus on the second cycle of interprofessional 'doings' in the curriculum, connected to the 'sayings' about discernment of different professional perspectives as the expected core learning outcome.

Second Cycle: Health, Ethics and Learning, Part 2

The second module of the interprofessional curriculum is the course Health, Ethics and Learning, part 2 (HEL 2), which runs over a total of 3 weeks towards the end of the undergraduate programmes. At the time of HEL 2, students have to some extent developed a professional identity through their specific programmes, and the idea of the second cycle is to make visible and support their professional development by emphasising the significance of interprofessional skills. Learning about, from and together with other professions, as defined by Centre for Advancement of Interprofessional Education (CAIPE 1997) in the health-care team, is viewed as crucial in the formation of a professional identity (Barr 1998, 2002). Dahlgren (2009) has suggested that learning about others can be seen as a way of decentering from one's own perspective and better knowing those of others. Learning from others, Dahlgren suggests, is a way of expanding the professional competence both laterally, by

becoming acquainted with and appropriating the perspective of others, and vertically, through deepening your own professional competence in relation to this. The third aspect of interprofessional learning – learning together with others – Dahlgren sees as important for establishing a common base for joint action (Dahlgren 2009).

Adopting a practice theory perspective on the idea of learning about, from, and together with other professions, changes our focus to, in Schatzki's words (2002), how the nexus of actions hang together and are integrated in practice. Encountering other professionals in the common enterprise that is constituted by health care makes visible how the doings and sayings composing this practice are linked through (1) practical understandings, (2) rules, (3) a teleoaffective structure and (4) general understandings.

The discursive arrangements for HEL 2 are teamwork and quality improvement work, enacted in clinical practice. Through the shared general understandings of the need of quality improvement in health care between the County Council and the Faculty of Health Sciences, a practical understanding emerges of what kind of projects/problems in need of quality improvement can be suggested by staff in the clinical practice settings and made available to the students to work with. During the work, problems in quality improvement are approached from different professional perspectives among the participating students. In this process, new practical understandings of the problem emerge, and the students encounter differences in the rules that direct the respective professional perspective. The chosen courses of action reflect the teleoaffective structures in use, what actions are purposive and make sense to take.

The material arrangements for working are the conditions of health-care practice itself. The students make site visits to work with the 'problem', using tools for quality improvement work, such as the PDSA-cycle (Cleghorn 1996). Cleghorn suggests that the Plan-Do-Study-Act (PDSA) cycle lies at the heart of continuous improvement and is a redefinition of the scientific method for application to the world of work. The students in Linköping use the PDSA cycle to define areas to investigate and finally suggest intervention/s based on evidence from the literature.

Examples of quality improvement projects that the student teams have been working on are (a) multi-seekers in primary health care, (b) accessibility for COPD (chronic obstructive pulmonary disease)/asthma patient to PHC (primary health care) and (c) the use of proper search terms in electronic medical records. The result of the students is applied in the clinic and evaluated, both from a health-care perspective but also as a learning experience for the employees. Staff and students create a learning practice with novices and experts, junior and senior professionals and teamwork between the professions.

Our experience is that, during HEL 2, students are able to take on interprofessional perspectives on health-care issues and to contribute to formulating and solving problems with contributions from their own professional groups. The introduction of techniques for quality improvement into the interprofessional curriculum rests on the assumption that students need to realise that professional practices are not stable, but changing, and that they need to be able to induce change in their professional work as part of their professional responsibility. This assumption brings with it the requirement

for students to be trained to observe the need for change in practice and to be able to stage and carry out processes of change, which is important, not the least from the perspective of enhancing patient safety. There is still a lack of systematic knowledge about what long-term consequences these techniques might bring to professional practice in health care, bearing in mind that quality improvement techniques are a way of thinking that originates in ideas of industrial management, rather than health care.

HEL 2 also introduces a new way of viewing students as change agents in clinical practice while learning about the systems, processes and ways of improving safety and value for the patients. This is a reorientation of the practice of health-care education that challenges previous practices where the general understandings of education assume it to be a tool for socialising students into practice. The alternative idea of students being immersed in practice during their training, working with change, together with their peers and with older generations of health-care professionals, might have the potential to shape a new idea of professional learning within the frames of higher education.

Third Cycle: The Training Ward

The third cycle of the interprofessional curriculum comprises 2 weeks of clinical experience at a students' training ward, towards the end of their studies. The training ward is part of an orthopaedic or geriatric clinic and comprises eight beds. One resident medical practitioner and one nurse make up the ordinary staff during daytime. Students from the programmes in medicine, nursing, biomedical analysis, physiotherapy and occupational therapy come together to work as health professionals in the training ward. Typical teams comprise one medical student, two nursing students and one student from the biomedical, occupational therapy and/or physiotherapy programmes, respectively. Student teams work in shifts that overlap to permit reporting between shifts.

The students' tasks comprise all the care for the patients, including medical care, nursing, administration, medication, planning, training and rehabilitation. The students are responsible for general as well as profession-specific tasks. The former comprise, for example, meals, bed making and hygiene. This means that the students have to work together as a team to take care of all aspects of care. Here, the 'doings' of the third cycle of the interprofessional curriculum are clearly connected to the 'sayings' of the first cycle, where the aim was, among other things, to establish a common set of values for professional health-care work among the health workers-to-be. In the common work together with the patient, these values are enacted.

The aim is to acquire and practice collaborative and interprofessional skills in doing health-care practice. The students manage the whole process around the patient and are supervised by specially trained staff. The material arrangements of the ward include a special room, designated for the activity of analysis and reflection on the day's work, in the team together with the supervisor and equipped with a round table and chairs for discussion, plus a white board for making notes. The

students work with the task of clarifying how their respective professional role and practical understanding of the caring situation will contribute to the team and ultimately to general understanding of the welfare of the patient. From students' evaluations of the third cycle of the interprofessional curriculum, it seems that there they have difficulty in linking the practical understanding of caring for the patients' basic needs to the general understandings of the welfare of the patient. The expected learning outcomes of the training ward are that the students should develop their capacities to collaborate effectively. The collaboration should take into account the patients' needs of care and rehabilitation. Finally, the students should be able to reflect on and identify their own professional role and to adjust their own courses of action to the common health-care teamwork. When caring for basic needs is not identified as part of the responsibility of a specific professional perspective, the practical understanding that the socio-material arrangements produce seems to conflict with the students' general understanding of health care.

Discerning the contributions of one's own and other health professionals' knowledge to manage a particular patient scenario can be necessary to achieve and improve quality and safety in health care. Knowing what other professions can contribute to help becomes as important as knowing the repertoire of a particular health profession.

Edwards, Daniels, Gallagher, Leadbetter and Warmington (2009) describe this particular feature of interprofessional learning in their study of improving interprofessional collaborations in social work as the development of a 'relational agency' (p. 41), meaning the competence to work flexibly and responsibly, utilising the distributed expertise that the participants bring to the group. In learning this competence, Edwards et al. (2009) suggest that the use of *boundary zones,* where the collaborating professionals together can reflect on the work with particular cases, is helpful to articulate the contributions from different professional perspectives and to learn about others. The arrangement of providing a particular room in the ward, where the group of students share their experiences from being immersed in practice under guidance of a supervisor, interprofessional student groups as in our case, could be viewed as the materialisation of such boundary zones, where the relationship between the professional and interprofessional competences can be understood.

Concluding Reflections

This chapter has argued that there is a need for rethinking educational arrangements for professional learning in higher education. The underlying problem for professional educators is to understand how, and if, professional education in higher education can be arranged to support the development of professional and interprofessional skills. We have suggested that a possible way of achieving this understanding could be to alter the lens we are viewing professional education through, from a cognitive one to a practice theory one.

In our previous research, we have identified a number of dimensions critical for identification with professional cultures from the students' and the professional

educational perspectives (Abrandt Dahlgren et al. 2006; Axelsson et al. 2010; Reid et al. 2008; Nyström 2009; Abrandt Dahlgren and Hammar Chiriac 2009). The conclusions draw on empirical findings from three different longitudinal research projects, building on interviews with students in a variety of professional programmes. Our results show that the perspectives of knowledge and learning embedded in the educational professional programme will have an impact on how the educational approach is apprehended and enacted by the students (Abrandt Dahlgren 2010). In a meta-analysis of two international research projects focusing on learning for the professions, we show students holding what we term either *rational* or *ritual* relationships to learning and knowledge for the professions. A rational relationship means that the content of learning is understood to be meaningful and relevant to the coming profession. A ritual view means that the content of learning is seen unconnected to future work, but necessary to graduate. We have argued that these different relationships to learning and knowing are of importance for their professional identity formation through and engagement in their educational programme (Reid et al. 2011). One interpretation of the example of the conflicting understandings of caring for the patients' basic needs, as in the training ward, that this previous research can give is that students conceive of this educational content as ritual and not rational to their coming profession. Shifting the lens to a practice theory perspective on the same example allows us to see that the socio-material arrangements of the training ward produce a break-through in the linking between practical and general understandings of professional health-care practice.

Our practice theory perspective has also drawn attention to how the relations between different sets of actors are connected, both as important mediating conditions through broader societal discourses, national legislation, local institution and organisation, as well as in terms of how everyday educational practice is enacted. We can notice how sayings about the PBL approach have changed over time in response to different discourses and now seem in line with the global discourse of changing health care and the different kinds of practice that is needed. Our case demonstrates examples of how connections between 'set-ups', 'doings', 'sayings' and 'relations' are aligned in practice.

Taking an educator's perspective, a practice theory perspective highlights the importance of how material arrangements are set up in different ways to allow a collaborative practice to unfold. This highlights the need for serious consideration of how to use the material arrangements in the educational setting to enable articulation and understanding of how the practice hangs together in terms of practical understandings, rules, teleoaffective structures and general understandings.

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