The background of the cover is an abstract composition of bold, expressive brushstrokes in bright yellow and dark blue-grey on a white base. The strokes are layered and overlapping, creating a sense of movement and depth. The yellow strokes are more prominent in the upper and lower sections, while the blue-grey strokes are more concentrated in the middle and right side.

IDENTITY, INTERACTION, AND POWER

*Explaining the affordances of
doctor-student interaction
during clerkships*

JONNE VAN DER ZWET

Identity, Interaction, and Power

**Understanding the affordances of doctor-student
interaction during clerkships**

The research reported here was carried out at

in the School of Health Professions Education

and in the context of research school ICO
(Interuniversity Centre for Educational Sciences)

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Identity, Interaction, and Power

Understanding the affordances of doctor-student interaction during clerkships

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Chapter 1

Introduction

Introduction

From Hippocrates' plea for hands-on education for doctors, Abraham Flexner's influences on medical curricula about a century ago, to current debates about early clinical experiences and longitudinal integrated clerkships; clinical clerkships have been both celebrated and debated components of medical curricula.¹⁻³ This thesis aims to contribute to these debates by critically revealing the opportunities and challenges of work-based learning in undergraduate medical education, and the way these affordances are embedded in doctor-student interaction. In this chapter, we describe the opportunities and challenges in current medical educational practice and explain the way learning theories can contribute to this domain. Based on this empirical and theoretical framework, we will introduce our research aims and conclude with the outline of this thesis.

Clerkships as promising gardens

Today, medical students spend a substantive amount of their time in clinical learning environments, where they are known as med students, apprentices, interns, or clerks. Through immersion in practice, taking histories, examinations of patients, being on call, writing and presenting case reports, self-study, assisting in procedures, doing morning rounds, and observation of and collaboration with doctors and nurses, they have to master complex theory and integrate it into their practice.^{4,5} Being able to see, hear, feel and think about real patients locates learning within the complexity of reality, helps students to form and remember links between theory and practice, and influences their sense of professional identity.⁶ Moreover, they learn to work in a complex environment that is similar to the one they will work in after they graduate.⁷

Doctors support student learning by supervising and facilitating them when they interact with patients, by providing them with adequate support and feedback, by asking them critical questions, and by being their role models.^{4,8-12} One can state that health care facilities have historically turned into promising gardens in which medical students can grow into young doctors.

Challenges in clerkship learning

Anyone who has ever been a learner or a teacher within a health care facility will acknowledge the challenges that accompany the integration of educational activities in the provision of high quality patient care. Hospital wards, surgical theatres, outpatient clinics, and general practices are melting pots of different people (doctors, nurses,

patients, students, managers) with at least as many priorities (delivery of high quality care, helping patients, getting well, teaching and learning to become a doctor, making profit). It takes little imagination to realize that, for example, time is a scarcity in daily medical practice. The experienced amount of time available for teaching and learning is known for both enhancing and impairing educational activities. Clinical teachers often refer to a lack of time when they reflect on their educational duties¹³⁻¹⁶, and the reflection of this lack of time is visible in students' clerkship evaluations.^{4,17} More concerns have been expressed regarding the varying instructiveness of medical students' experiences during their clerkships. These concerns relate to, for example, the number and diversity of patients they encounter, the availability and quality of supervision, observation and feedback, students' attitudes and motivation, the attitudes of staff towards students and teaching and, related to this, the safety of the learning environment.^{4,10,18-21} For doctors, providing adequate supervision for students is not something that goes without saying. Besides time pressure, other aspects such as their motivation, local (educational) culture, training, personal and financial rewards, work output, and management of patient safety play a role in how they supervise students.^{14,15,20,22,23} Thus, the actual health care facilities define the opportunities and challenges for students to learn and for doctors to teach in many ways; the breeding ground for developing doctors may not always be as optimal as we would like it to be.

Importance of a healthy breeding ground

The need for adequate training of future doctors seems obvious in warranting high quality care for the patients they will encounter later in their career. There is, however, more at stake. During their clinical experiences, students are confronted with the intimacy of physical examinations, the stories of people who suffer, the limitations of healing, and death.^{24,25} These are instances of new and potentially strong emotional experiences. Students have to cope with these experiences in environments in which it can be more common to suppress emotions, doubts, and uncertainties, than to reveal them.^{24,26} Although some students may interpret these emotional experiences as rewarding and helpful, others may become overwhelmed by feelings of uncertainty and fear. Such feelings may then hamper their ability to deal with their emotions and to engage in new relationships, and may even lead to detachment and cynicism.²⁴ These personal aspects of medical training resonate in the statement that "learning to be a doctor includes internalizing professional attitudes and behaviours, sometimes at the expense of personal values".²⁷ Particularly since students go through these experiences at a critical time of young adult development²⁸, they need safe and constructive learning environments in which they can deal with and learn from the awkwardness of novice status, the pressure to fit into the medical culture, and the heavy physical, intellectual and emotional labour required.²⁸ These environments do not only affect

students at the time of their clerkships, but continue to do so later when they go into residency or become specialists.²⁸ High pressure and stress within medical education and practice may translate into ethical erosion, burnout, depression, substance abuse, suicide, and professional misconduct.^{28,29} Moreover, today's medical students are the residents and specialist that are, in their turn, expected to teach future students. Thus, there are ample reasons for warranting and improving the quality of work-based undergraduate medical education.

The preceding paragraphs have outlined both the importance and challenges of learning and teaching during medical clerkships. In the following paragraphs we will briefly explain several theoretical frameworks that are represented in ongoing debates regarding undergraduate work-based learning, and elaborate further on the theoretical orientation that has strongly influenced this thesis.

Theoretical orientation

Parallel to doctors' need to understand the pathophysiology of diseases to be able to care for patients⁷, an understanding of learning theories and perspectives guides and supports researchers and educationalists as well as learners and teachers when they try to understand, explain and if possible adjust the process of work-based learning. These theories provide us with different lenses through which we can approach work-based learning and teaching in clinical placements. Different theoretical frameworks locate learning in different grounds and highlight different aspects of the same learning environment.³⁰

Medical education has mainly been influenced by the domains of educational psychology, cognitive psychology, and more recently sociology and anthropology.³¹ Theoretical perspectives that have influenced the pedagogy of medical education can be organized by their orientation towards behaviourist, cognitivist, humanist, and social theories of learning, each focusing on different aspects of learning and teaching although some overlap in principles do occur.³¹ Table 1.1 briefly outlines the basic tenets of these theoretical orientations.^{31,32}

Table 1.1 Basic tenets of theoretical orientations towards learning in medical education

Behaviourism	Behaviourists focus on (the measurement of) overt behaviour. Learning is then located in how the behaviour of learners changes as they respond to environmental stimuli such as feedback.
Cognitivism	Cognitivists locate learning in the meaning people extract from experiences. Learners' memory system then processes information into something meaningful, which can later be referred to as knowledge.
Humanism	Humanists regard learning as an individual process. They do not focus on the development of knowledge, however. They locate learning in the possibility of learners to develop their selves in a more holistic sense, and pay attention to factors and processes that support them in doing so.
Social theories	<p>Social learning theorists assume that learning is situated in social activity. Learners interact with their environment, and in this reciprocal relationship they learn from, for example, observation and acting alongside others. The development of skills, knowledge, rules, strategies, beliefs and attitudes is then embedded in the interaction between learners and their environment, right when and where they develop their professional identity.</p> <p><i>Social cognitive theories</i> focus on intra-individual aspects of the learning process, whereas <i>socio-cultural theories</i> regard learning as an inter-individual process.</p>

This thesis is conceptually orientated towards socio-cultural learning theories. Concepts from socio-cultural learning theories are increasingly present in current discourses on medical education³¹, theorizing the process of learning from a relational and context bound perspective, which differs from earlier emphasis on learning as a predominantly individual and/or cognitive process. This distinction can be explained in more detail by two contrasting metaphors: ‘acquisition’ and ‘participation’. Sfard (1998) employed these metaphors to explain “two radically different answers to the fundamental question, ‘what is this thing called learning?’”.³³ If one answers this question using the acquisition metaphor, one would conceptualize learning as the acquisition of knowledge and the development of concepts. The human mind becomes a container that needs to be filled with certain materials, and the learner will then be the owner of these materials. If one answers this question using the participation metaphor, one would conceptualize learning as becoming a participant in a certain community, a learner becoming able to talk the talk and to act according the norms of a community. Knowledge and identity then constitute each other at the time of learning.³⁴ Locating learning in participation embraces both the opportunities and the challenges of a medical learning environment as described above, as opposed to the often more decontextualized “acquisition” approach. It takes into account the complex and dynamic nature of medical educational practice. These two approaches towards learning are not mutually exclusive. Rather, they can be seen in productive tension, providing us with a different focus when we try to understand, practice, or change

learning and teaching, with both approaches using their own principles and language to do so (see Table 1.2).^{33,35}

Table 1.2 A comparison between the principles and language of the acquisition and participation metaphors, based on Sfard (1998)³³

Acquisition metaphor		Participation metaphor
Individual enrichment	Goal of learning	Community building
Acquisition of something	Learning	Becoming a participant, identity development
Recipient (consumer), (re-)constructor	Student	Peripheral participant, apprentice
Provider, facilitator, mediator	Teacher	Expert participant, preserver of practice/discourse
Property, possession, commodity (individual, public)	Knowledge, concept	Aspect of practice/discourse/activity
Having, possessing	Knowing	Belonging, participating, communicating
Knowledge, concept, conception, idea, notion, misconception, meaning, sense, schema, fact, representational, material, contents, reception, acquisitions, construction, internalization, appropriation, transmission, attainment, development, accumulation, grasp, delivering, conveying, facilitating, mediating, applying, transferring, sharing	Discourse	Participating, doing, becoming, community, contextuality, situatedness, cultural embeddedness, social mediation, practice, discourse, communication, negotiation, consolidation, mutuality, relationships

Like Sfard, Billett (2002) argued for a change in workplace learning discourses as well. He challenged the way assumptions about learning and teaching based on practices in educational institutions are applied to work-based learning. This is apparent in how he refuses to simply accept that workplace learning experiences are critiqued for being unstructured, informal and ad hoc. He argues that workplaces have their own structure, different from learning institutions, and therefore it is “imprecise to describe the process of learning (...) wholly in terms of the circumstances in which it occurs (i.e. informal or formal)”.³⁶ He pleads for a workplace pedagogy which acknowledges that workplace goals, practices, norms, values, hierarchy and tasks structure learning opportunities. For example, these aspects structure how learners gain access to certain types of activities and knowledge, or to guidance by more experienced co-workers. They provide a framework in and with which learners co-construct learning

experiences. He does, however, consider the construction and development of *knowledge* as the main outcome of work-based learning, which demonstrates the pulling powers of both the acquisition and the participation metaphor in his theoretical approach of work-based learning.

The perspectives on learning outlined above inform and explain work-based learning in different ways, but how do they relate to and expand current educational theory and practice? How do they contribute to warranting and improving the quality of work-based learning?

Expanding theory and practice

On the one hand, the dominant culturally constructed habit to think of learning as an individual process of gathering knowledge fits well with the dominating positivist view in medicine and medical education³⁷ in placing high value on understanding the world through objective study and on the development of knowledge that is value- and context-free.³¹ On the other hand, the participation metaphor and its discourse is increasingly apparent in health education research.³¹ This scientific development may cause friction as it is a challenge to apply 'participatory concepts' in a 'world of acquisition'. However, it seems rather paradoxical to remain focused on isolated individual learning despite the fact that the nature of medical practice itself is often collaborative and interprofessional.³⁵

Two examples of conversations in the domain of work-based education that resonate with the participation metaphor and expand current theory and practice in light of warranting a healthy breeding ground, are those relating to identity development (theory) and to longitudinally integrated clerkships (practice). These conversations relate to each other in the critical examination of the role of supervisory relationships and, hereby, strongly contributed to the development of the aims of this thesis.

Identity development

The current turn towards participation involved, simultaneously, increased attention for and conceptualization of medical students' identity development as something that is central to learning.³¹ Approaching students' clerkship experiences as a continuous process of professional identity construction resonates with social and socio-cultural learning theories as well as psychological social identity theory.^{38,39} These theories differ in where they locate identity and identity formation. Whereas the psychological approach conceptualizes identity as an internal cognitive feature of individuals, the social or socio-cultural approach emphasizes that identity is embedded in social interaction and united by practice.^{27,39,40} Rather than deciding which approach is true, we can focus on what these theories have in common or how they complement each

other. They both acknowledge that medical education is as much about learning to talk and act like a doctor as it is about learning the content of the curriculum, enacting the different roles within a competency based framework, and ‘qualifying’.³⁸⁻⁴⁰ It is about becoming a doctor; the continuing search and development of who you are and who you are seen to be in daily interaction with, for example, patients and doctors.³⁹ For students, identity formation refers to how they learn what it means to be a clerk and a doctor at the same time. When they wear the white coat for the first time, they have to participate in different hierarchical settings, paying attention to and interacting with the local unofficial rules, values, beliefs and attitudes³⁹, while they internalize aspects of ‘being a doctor’.⁴⁰ Doing so, their identity is constructed as they participate in day-to-day activities and through the use knowledge, language, artefacts, within power relations and through reinforcement from others.^{34,38,39} The current increase of attention towards learning as identity development involves (re)consideration of educational practice as it takes place and as it is researched. It asks for critical awareness of both the opportunities and threats that lie within student-teacher interaction embedded in the workplace, especially since ‘identity’ cannot be considered as a self-evident by-product of learning in the context of authentic practice.³⁴

Longitudinal integrated clerkships

Another conversation that resonates with the participation metaphor relates to longitudinal integrated clerkships. The last decades, length and location of clerkships have been debated as the organizational curriculum structuring students’ clinical learning experiences. In The Netherlands, for example, students participate in about twelve different specialties, each rotation lasting around 4-10 weeks. Such a structure determines not only the variety of patients, clinicians and work environments students encounter, but appears to account for scattered supervision and little opportunity to meaningfully engage and actively participate in local practice.⁴¹ These criticisms of sequentially organized clerkships are widely recognized and have led to the introduction and discussion of mixed and longitudinal placements, the latter being known as longitudinal integrated (clinical) clerkships (LI(C)Cs).^{42,43} There are many different forms of clerkships schemes that fall within the category of LICCs. In essence, they all provide a structure that is organized around the principle ‘continuity’; continuity of care (patients), curriculum, or supervision.^{1,42} Students then spend, for example, up to a year in a health care facility (often a primary care setting) and see patients with various and undifferentiated problems, unstructured by discipline or, at times, care venue.⁴² Being able to see patients on return visits, while being supervised by the same person over a longer period of time with space for self-reflection, might then result in stronger development of independent practice and the nurturing of idealism.⁴⁴ This organizational structure pushes the boundaries of the historically evolved clerkship system and calls for cultural and financial change.⁴² Student

participation and supervisory practice will inherently change as well. Thus, this debate on LICCs entails critical rethinking of the supervisory relationship between students and teachers, and the way this relationship either prospers or falters in different educational environments.⁴²

Aim of this thesis

Both the debates on identity development and LICCs continue to stretch the boundaries of contemporary medical education discourse and practice. They seem to merge, however, in the turn towards (longitudinal) participation and the potential value of teacher-student relationships in both students' and doctors' identity development.²³ Therefore, the overarching aim of this thesis is to further our understanding of how medical students learn and doctors teach during medical clerkships, when approached from a socio-cultural learning perspective. We aim to reveal the affordances of doctor-student interaction as they are embedded in two work-based learning environments, differing in supervisory continuity.

Context

At the time of this research project (2008-2013), the six year medical programme at Maastricht University was characterized by problem based learning principles and early patient contacts. After a three year bachelor phase, students enter a three year master programme. During the first two years of the master phase students participate in twelve discipline based clerkships, each lasting five to ten weeks. The final master year consists of an eighteen week senior clinical rotation and an eighteen week research rotation. The general practice clerkship, in which three of our studies have been conducted, is a ten week clerkship in the second master year. The internal medicine clerkship, which provided the setting for the final study in this thesis, is a ten week clerkship in the first master year.

Thesis outline

Chapter 1 introduces the theme of work-based learning in undergraduate medical education, outlines the arguments for researching this field from a socio-cultural perspective, and further introduces the aim of this thesis. Chapter 2 reports a study in which we aimed to identify aspects that contributed to the instructional quality of a general practice clerkship, as perceived by students. We analyzed the evaluation

questionnaires students filled out after completing their general practice clerkship, using exploratory factor analysis and, subsequently, regression analysis. In chapter 3, we took a socio-cultural perspective to further clarify how students learned during their general practice clerkship. We analyzed group interviews with students who were at the end of their clerkship. We constructed a conceptual framework that clarified students' learning by participation and the role of the socio-cultural context therein. In chapter 4, we maintained a socio-cultural perspective, but employed it while we analyzed work-based learning and teaching from the perspective of teachers. We analyzed audio diaries recorded by general practitioners during a 10-week clerkship. Using discourse analysis, we sought answer to the question of how these doctors gave shape to their interaction with students in the context of day-to-day practice, and how this changed during a clerkship. Chapter 5 reports the final study in which we used critical discourse analysis to unravel the role of social interaction during clerkship learning and teaching. However, we now included both the audio diaries of the students and doctors who worked together in the context of a hospital based internal medicine clerkship characterized by little continuity of supervision. In chapter 6 we summarize and synthesize the results of previous chapters, relating them to existing empirical and theoretical research. We reflect on the strengths and limitations of this thesis and consider implications for practice and further research.

As this thesis is based on published journal papers, some repetition across chapters is inevitable.

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Chapter 2

**Workplace learning in general practice: supervision,
patient mix and independence emerge from
the black box once again**

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Med Teach 2010;32:e294-9

Abstract

Background

Medical students increasingly participate in rotations in primary care settings such as general practices. Although general practices can differ markedly from hospital settings, research on the instructional quality of general practice rotations is relatively scarce.

Aims

We conducted a study to identify which aspects make a significant contribution to the instructional quality of general practice clerkships, as perceived by students.

Method

After completing their general practice attachment, 155 fifth-year medical students filled out an evaluation questionnaire. Exploratory factor analysis and reliability analysis identified clusters of correlated independent variables. Subsequent regression analysis revealed the relations between the reduced set of independent variables and the dependent variable 'Instructional quality'.

Results

Both the quality of supervision and the size and diversity of the patient mix substantially affected students' experienced instructional quality. Opportunities and facilities to perform independently were correlated with instructional quality, but did not affect the instructiveness directly.

Conclusions

Supervision, patient mix, and independence are crucial factors for learning in general practice. This is consistent with findings in hospital settings. The perceived quality of instruction hinges on supervision, which is not only the variable most strongly related to instructional quality, but which also affects both the patient mix and students' independence.

Introduction

Traditional apprenticeships were once the main or even single component of learning medicine. Basically, the master taught his apprentice ‘how to heal’. Although the master apprenticeship model is still clearly visible in medical curricula, in contemporary medical education the concept of workplace learning has changed considerably.

Nowadays, medical students are expected to learn to become doctors who “master complex theory and integrate it into their practice”.¹ For this purpose students need to integrate biomedical knowledge, practical skills and a professional attitude and they will have to translate these competencies into competent behaviour. The integration and translation of competencies is best mastered in authentic and context-related learning environments, such as clinical clerkships.¹⁻³ It is of vital importance to ensure that such authentic learning settings enable students to learn instead of ‘merely demonstrating’ readily or recently acquired knowledge and skills. Students should be empowered to build and expand their knowledge and skills for clinical reasoning and decision making in an environment that offers fertile ground for personal and professional development. At least, those are the objectives of workplace learning from an educational perspective.

Clerkship settings are melting pots of people with different roles (students, trainee doctors, registrars, consultants, patients, nurses, etc) and different priorities (delivery of high quality care, getting well, making a profit, getting a good education). It is therefore not surprising that the literature on workplace learning shows that the instructional quality of clerkships is determined by at least as many factors as there are people and priorities that constitute the learning environment of the workplace.

Literature on workplace-based training in medicine is dominated by hospital-based studies. Factors that have been shown to determine the instructional quality of clerkships include: workplace atmosphere^{1,4,5}, number and quality of learning opportunities^{5,6}, patient mix³ and attributes of students as well as teachers^{1,4}, the latter including the quality of supervision³, observation, feedback and assessment.^{2,5} Together these factors contribute to a further critical component of workplace learning: (supported) participation.^{2,5,7} It should be noted that studies have revealed not only which factors are important for workplace learning but also that the quality of these factors often leaves a great deal to be desired.^{2,4,6,8}

The instructional quality of general practice settings has received less attention from researchers. At the same time such studies are increasingly needed, as primary care comes more and more to the forefront in health care systems and medical education.^{9,10} General practice makes different demands on students and teachers than other clinical settings¹⁰, supposedly because of differences in organisational size, structure, culture, patient population, learning opportunities and goals and tasks in the delivery of health care. In other words, general practice attachments are melting pots,

just like hospital workplaces, only somewhat smaller and containing a different mix of people and priorities.

Although we know little about determinants of the instructional quality in general practice settings, we do know something about differences between education in general practice and in hospital workplaces. General practice clerkships are rated by students as significantly more enjoyable than hospital clerkships and students say that learning objectives for history taking and physical examination are easier to attain in general practice.¹¹ Hospitals, on the other hand, offer more opportunities to learn about performing procedures¹² and disease management and are more helpful in learning to write history, examination and progress notes.¹¹

Student teacher ratios are another noticeable difference between primary care and hospitals. The much lower ratio in general practice attachments allows more emphasis on the interpersonal interaction between teacher and student, fostering a relationship that facilitates feedback and rapport.¹³ Probably related to this, according to Silverstone's qualitative research, the GP teacher is an important determinant of the perceived effectiveness of a community attachment. This may explain why students have been known to label a successful attachment simply 'A good GP'. A 'good GP' not only embodies the GP as a good teacher and role model but also a positive learning climate. Thus, a pattern in which learning opportunities, personal interaction and role modelling are intertwining appears to determine the perceived quality of learning in primary care.¹⁴

In the face of the increasing prominence of primary care settings in medical education, the different organisational structures of primary care and hospital workplaces and the relative paucity of research into primary care as a learning environment⁹, our objective was to bring to the surface the instructional components that are central to the quality of undergraduate training in general practice settings. The identification of these key factors could lead primarily towards improvement of workplace learning, and could guide teacher development as well. For this purpose we sought to answer the following question: Which factors have the strongest impact on the instructional quality of clerkships in general practices as experienced by medical students? Additionally, we compared the answers to this question with findings from studies in hospital settings.

Methods

Setting

The study was conducted at the Faculty of Health, Medicine and Life sciences (FHML) of Maastricht University in 2009. During the obligatory ten-week general practice clerkship in year five of the six-year undergraduate medical curriculum, students are attached to a general practice for 3.5 days a week. Students usually have one GP

preceptor whom they observe and who observes them during patient consultations. The remaining 1.5 days of the work week are taken up by a one-day tutorial group session and a half day designated for self-study.

Instrument

We used data from the regular clerkship evaluation questionnaire, which students fill out anonymously after completion of each clinical attachment. Ethical approval for conducting this study was not required. For the current study we looked at a subset of seventeen questionnaire items relating to aspects that are likely to impact on learning in general practice. The items were rated on a five-point or a ten-point Likert scale, depending on the question. 'Instructional quality' was the dependent variable and the other sixteen items were the independent variables (Table 2.1).

Subjects

From the total of 293 students who completed attachments in general practice in 2007, 284 had filled out the regular evaluation questionnaire (response rate 97%). One of the non-responders had dropped out of medical school but other reasons for non-response were not retrieved. Since several practices had received more than one student during the study period, some GP preceptors had been evaluated by several students. In order to obtain a sample of independent evaluations, we restricted the dataset by randomly selecting one questionnaire for each GP preceptor. The resulting sample consisted of 155 independent evaluations.

Confounders

In order to correct for potential confounders and effect modifiers we retrieved information on GPs' age and sex, practice location (urban or rural (> or <25,000 inhabitants, respectively)), type of practice (group or solo), affiliation to Maastricht University, and GPs' additional role as a supervisor of postgraduate trainees.

Table 2.1 Description of items and variables, original rating scales, and eigenvalues and explained variance after explanatory factor analysis

Item description		Original rating scale (points)	Eigenvalue	Explained variance (%)	Cronbach's alpha		
Dependent variable	Independent variables	Supervision	Instructional quality	10	-	-	
			Accessibility of supervisor when students wished to ask questions or have things explained to them.	5	-	-	
			Supervisor explains what is done and why	5	-	-	
			Observation of students during patient consultations	5	-	-	
			Feedback after observation	5	-	-	
			Time spent on supervision	5	6.863	42.891	0.876
			Working climate	10	-	-	-
			Organisation	10	-	-	-
			Supervision	10	-	-	-
			Average number of patient discussions per week	5	-	-	-
Patient mix	Average number of learning goal discussions per week	5	-	-	-		
	Variety in patient mix	5	-	-	-		
	Number of patients	5	1.635	10.219	0.807		
Independence	Independence	Instructional effectiveness of patient consultations	5	-	-		
		Facilities to examine patients independently	5	-	-	-	
		Opportunities to perform activities independently	5	1.294	8.087	0.719	
Information	Information	Information about clerkship organisation	5	-	-	-	

Data analysis

The responses on a ten-point scale were divided by two to obtain a uniform scale with a maximum of five for all variables. The scores on all independent variables with an interval scale were centred by subtracting the mean value in order to improve the interpretation of the regression results and avoid numerical instability in the procedure. In order to avoid collinearity effects in subsequent analyses we reduced the number of independent variables by performing an exploratory factor analysis (Principal Components Analysis, and Oblimin with Kaiser Normalization). Factors with an eigenvalue of >1 were included for further analysis.¹⁵ Subsequent reliability analyses for each of the resulting item clusters (scales) examined internal consistency and identified items with a negative effect on reliability. By averaging the scores of the items within each scale, we obtained a reduced set of independent variables.

After the initial analyses we performed correlation analysis and multivariate regression analysis to investigate the relationships between the independent variables and their contribution to the variance of Instructional quality. Confounders and effect modifiers were entered into the regression model as well in order to find a possible effect they could have on the instructional quality. We used a stepwise procedure to determine which variables should be included in the model.

The statistical software package SPSS 16 was used for the data analysis.

Results

Students rated Instructional quality 4.15 (SD: 0.54) on a scale from 1 to 5. The mean age of the GP preceptors was 50 years and 80% were male. Forty-three per cent were in solo practice and 62% worked in urban areas. Nine per cent were affiliated to the university and 9% supervised postgraduate trainees as well as students.

Exploratory factor analysis

Exploratory factor analysis yielded three factors accounting for 61.20% of the total variance in the seventeen questionnaire items. Reliability analysis revealed that removal of one of the items (*'information about clerkship organisation'*) resulted in a considerable increase in the reliability of one of the scales (*Independence*), with an increase in Cronbach's alpha from 0.62 to 0.72. Based on this finding, *Information* was included as a separate variable in subsequent analyses. Thus, the original set of seventeen independent variables was reduced to a set of four variables: 1) *Supervision*: quality of supervision provided by the GP preceptor, 2) *Patient mix*: number, diversity, and quality of patient contacts, 3) *Independence*: opportunities and facilities to perform clinical activities independently, and 4) *Information*: information about clerkship organisation (Table 2.1).

Relationships between the variables

Instructional quality correlated significantly and substantially (0.48-0.73) with *Supervision*, *Patient Mix* and *Independence*, but not with *Information* (Table 2.2). None of the confounders correlated significantly with *Instructional quality*. As for correlations between independent variables, there were significant substantial correlations between *Supervision*, *Patient Mix* and *Independence* (0.44-0.55), but *Information* showed a significant but moderate correlation with *Independence* only.

Multiple regression analysis revealed that *Instructional quality* was directly affected by *Supervision* and *Patient Mix*, but not by *Independence*. Since *Independence* correlated significantly with all the variables, regression analysis was performed to investigate any indirect relationships with *Instructional quality*. We hypothesized that, if *Supervision* affects *Patient Mix*, *Independence* and *Instructional quality*, and *Independence* affects *Patient Mix*, *Independence* could indirectly affect *Instructional quality*. Figure 2.1 shows the corresponding path diagram indicating two multiple regression equations 1) the original equation where *Supervision*, *Patient Mix* and *Independence* explain the variance in *Instructional quality*, and 2) an additional equation where *Supervision* and *Independence* explain the variance of *Patient Mix*.

The corresponding stepwise regression analyses revealed that *Supervision* affects *Instructional quality* not only directly (regression coefficient B: 1.06; standard regression coefficient beta: 0.57) but also indirectly, with *Supervision* affecting *Patient Mix* (B 0.40; beta 0.39) and *Patient Mix* affecting *Instructional quality* (B 0.63; beta 0.37). Moreover, only for practices in urban areas, the indirect relation between *Supervision* and *Instructional quality* was found to be mediated by *Independence*. *Supervision* directly affected *Independence* (B 0.61; beta 0.44) and *Independence* indirectly affected *Instructional quality* through *Patient Mix*, with betas of 0.39 (B 0.33) and 0.37, respectively. Combined, these direct and indirect pathways between *Supervision* and *Instructional quality* result in a correlation of 0.73 between these variables. Note that there is no direct relationship between *Independence* and *Instructional quality*, and in rural practices *Independence* did not affect *Instructional quality* at all, neither directly or indirectly. *Rural/urban practice* was the only effect modifier with a statistically significant contribution. The path diagram in Figure 2.1 shows the significant contributions of the independent variables of interest.

Table 2.2 Mean scores, standard deviations (SDs) and correlations between variables.

		Mean	SD	Supervision	Patient mix	Independence	Information
Dependent variable	Instructional quality	4.15	0.54	0.73*	0.65*	0.48*	0.09
	Supervision	4.04	0.60	-	0.54*	0.44*	0.07
	Patient Mix	4.44	0.62		-	0.50*	0.23
	Independence	4.41	0.82			-	0.25*
	Information	4.00	0.60				-

*Correlation is significant at the 0.01 level (2-tailed)

Figure 2.1 Path diagram, presenting the linear relations between the four variables of interest. Indicated are the standardised regression coefficients (betas) that are statistically significant at $p < 0.0005$.

Discussion

We investigated which aspects of general practice attachments make a substantial contribution to instructional quality as perceived by students. The results show direct effects of the quality of supervision and the size and diversity of the patient mix, with supervision affecting the instructional quality the most. Moreover, supervision influences the extent to which independent activities of students are facilitated, as well as the quality of the patient mix they encounter. So, supervision has a direct as well as an indirect impact on instructional quality.

We were surprised to note that the variable independence shows a significant correlation with each variable, while having no direct impact on instructional quality.

We did, however, establish an indirect relationship between independence and instructional quality via patient mix, although this is restricted to urban areas.

The importance of supervision and number and variety of patient encounters for the quality of workplace learning is supported by earlier work in this domain. Similar studies in hospital-based attachments by Dolmans et al. also show that instructional effectiveness depends on a combination of patient mix and supervision.^{3,16,17} This association is confirmed by other studies reporting a positive correlation between students' overall satisfaction on the one hand and supervision, feedback and instructional quality on the other hand.¹⁸ Studies also show that medical students value constructive feedback from clinical staff⁵, adequate numbers and variety of patient encounters and enthusiastic and available preceptors.¹⁹

Based on recent literature, we expected independence to be a key factor for instructional quality. As stated by Dolmans et al., input variables such as available rooms and organisational quality have a favourable effect on students' perceptions of patient mix and supervision, while a lack of opportunities for students to examine patients independently is perceived as obstructing learning.^{3,20} Moreover, preceptors who provide opportunities for students to take independent responsibility²¹ and to be actively involved in clinical work⁵ are identified as important determinants of educational value. We were rather puzzled therefore by the absence of a direct relationship between independence and instructional quality in the current study. A possible explanation may be found in the strong relationships between supervision and independence and between supervision and instructional quality. These relationships may leave little space for independence to come to the surface as a variable with a distinct linear relationship with instructional quality. Translated to the realities of clinical training, one could say that the quality of workplace learning in general practice is first and foremost coloured by quite intensive one-to-one supervision. The success of extensive student teacher interaction in establishing a nourishing instructional climate determines not only general instructional effectiveness but also – and closely related to it – the extent to which students are facilitated to work independently. This strong relationship makes it difficult to tease out independence as a separate determinant of instructional quality. Another potential explanation is that the questionnaire is not yet validated and independence comprises no more than two items as opposed to the ten items of supervision. However, the differences in reliability between these variables do not account for the substantial differences in their correlations with instructional quality.

Next, we wondered what could cause the influence of independence on patient mix in general practices in urban areas. It is plausible that a student with many opportunities to practise independently encounters a larger and more diverse patient mix. However, neither the data nor empiricism offers a satisfactory explanation for the fact that this relationship only occurs in urban areas. Could there be another confounder or effect modifier at work? We have to date no data that can rule this either in or out.

Strengths of this study are the large sample size and the anonymity of the questionnaire, which reduces the likelihood of socially desirable answers. As noted earlier, analysis shows that the average score of instructional quality is quite high with a moderate standard deviation ($SD=0.54$). The relatively small variation in student ratings of the different items hampers reliable assessment of any relationships between the variables. Given the large sample size and the exploratory factor analysis we performed we are confident that this issue has been addressed adequately. By pooling the questionnaire items, we have improved the validity of our study. An inevitable downside of clustering, however, is the concomitant loss of specific information from individual items and the related reduced specificity of applications to practice.

The questionnaire being anonymous, students' age and gender were not available for analysis. It would have been interesting to compare the effects of various combinations of student and supervisor gender, as these can play a role in teaching and learning in the student-preceptor dyad.²²

An important conclusion that we can draw from our findings is that there are few or no differences between hospital and general practice settings with regard to the key ingredients that determine students' judgement of instructional quality. In both settings, sufficient numbers and diversity of patient encounters and high quality supervision are considered indispensable for effective learning and teaching. Opportunities and facilities for students to undertake independent activities appear to play an important role as well. Although supervision, patient mix and independence clearly are the main constituents in both hospital and primary care settings, we cannot rule out that the concrete meanings of these elements may differ between these settings. Because of differences in the organisation of health care in hospital and primary care and more specifically in view of the unexpected effects we found for independence, we will first have to explore students' and teachers' interpretations of these concepts before we can make pronouncements on concrete implications for educational practice with any confidence. Thus, more research is needed to verify and, more importantly, to give further meaning to our findings.

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Chapter 3

**Workplace learning from a socio-cultural perspective:
creating developmental space during the general
practice clerkship**

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Abstract

Workplace learning in undergraduate medical education has predominantly been studied from a cognitive perspective, despite its complex contextual characteristics, which influence medical students' learning experiences in such a way that explanation in terms of knowledge, skills, attitudes and single determinants of instructiveness is unlikely to suffice. There is also a paucity of research which, from a perspective other than the cognitive or descriptive one, investigates student learning in general practice settings, which are often characterised as powerful learning environments. In this study we took a socio-cultural perspective to clarify how students learn during a general practice clerkship and to construct a conceptual framework that captures this type of learning. Our analysis of group interviews with 44 fifth-year undergraduate medical students about their learning experiences in general practice showed that students needed developmental space to be able to learn and develop their professional identity. This space results from the intertwining of workplace context, personal and professional interactions and emotions such as feeling respected and self-confident. These forces framed students' participation in patient consultations, conversations with supervisors about consultations and students' observation of supervisors, thereby determining the opportunities afforded to students to mind their learning. These findings resonate with other conceptual frameworks and learning theories. In order to refine our interpretation, we recommend that further research from a socio-cultural perspective should also explore other aspects of workplace learning in medical education.

Introduction

Primary health care settings, including general practice, have been characterised as powerful workplaces for teaching and learning in undergraduate medical education.¹⁻⁴ Educational research in this setting is predominantly descriptive and has resulted in valuable information about students' learning experiences. Studies have revealed for example that in general practice settings students specifically learn about aspects of medicine like chronic and minor illnesses, communication skills and dealing with uncertainty, whereas hospital settings are typically the workplace where students learn about acute illnesses and diagnostic procedures.^{5,6} The stronger emphasis on communication skills in general practice appears to be due to students seeing '... patients in a zone of transition between society and healthcare'.⁶ Experiences in general practice confront students with patient perspectives, raise their awareness of psychosocial issues regarding health and disease and help them to value and practise a patient-centred approach.⁵⁻⁷ In this way students also learn to develop their individual consultation style.⁶

Research has underlined the importance of the role of the supervisor in general practice learning. In an earlier study we found that perceived instructional quality of general clerkships was determined most strongly by the quality of supervision⁸, while O'Sullivan et al. reported an increase in feelings of competence and confidence as a result of a high level of one-to-one supervision and feedback.⁵ Similar findings resulted from another study in which students labelled good community attachments as "a good general practitioner (GP)", which covered not only the GP as a role model and teacher but also the general quality of the learning environment.⁹ General practice placements tend to be characterised by a one-to-one relationship with the supervisor and a generally informal personal approach. As a result, students feel at ease and less pressured to impress teachers and conceal weaknesses. As a result they are not afraid to ask questions, which benefits their learning experiences.^{5,7} Two studies which used students' learning experiences to identify general concepts of (enhancement of) teaching and learning processes in a general practice setting^{10,11}, also underlined the importance of the role of the supervisor and of active and collaborative teaching and learning based on a trusting relationship.

The research findings summarised above describe what students learn in general practice and what contributes to their learning process. These studies generally depart from a cognitive learning perspective, in which learning revolves around an individual learner who acquires knowledge, skills, attitudes and competencies. This point of departure is rather common in medical education research, but it has been argued that this field could benefit from exploring and theorising about learning using different 'frameworks' or 'lenses'.¹²⁻¹⁴ Bleakley, for example, argues that socio-cultural learning perspectives are powerful frameworks for exploring, explaining and predicting how

medical students learn during clerkships, since they are able to incorporate the complexity and instability of these learning contexts.¹²

Socio-cultural learning perspectives contrast with cognitive theories by relying on (at least) a two-way relationship between individual learning and culture. “Socio-cultural theory treats knowledge as dependent on the knower and the cultural conditions under which it is developed and applied”.¹⁵ In other words, what and how medical students learn during clerkships depends on the nature of their (interactive) experiences and activities and the meaning that they, and others, attach to these experiences. Lave and Wenger¹⁶ have articulated the two-way relationship, from their socio-cultural perspective on learning, as the concept of “legitimate peripheral participation in communities of practice”, in which a community is a culture—a social structure in which relationships with other people or other communities play an important role. The community determines conditions for learning. Through increased participation newcomers move from the periphery towards the core of a community. In this, social practice is the main phenomenon, with learning—conceptualised as a cognitive process—as one of its integral components. Reaching the centre of a community is not necessarily the main goal of this process. As the main emphasis is on the role of social activity in promoting learning and the formation of the learner’s identity, peripheral participation is legitimate in itself.¹⁶ Another socio-cultural perspective on the relationship between mind, culture and context is provided by ‘activity theory’. Originating in Vygotsky’s work of the early twentieth century, it was further developed by others, including Engeström, whose interpretation is characterised by a focus on ‘activity systems’ in which learning arises from the interaction between the learner(s) and cultural tools, including the language, physical artefacts and local rules that learners encounter when performing a certain task.^{15,17}

The existing empirical support for the importance of an informal and safe learning environment can be regarded as a fragmented reflection of the picture viewed through a socio-cultural lens. However, this perspective is currently quite rare in medical education research. Since there are empirical and theoretical cues to suggest that a socio-cultural perspective could yield useful insights into learning in general practice, we conducted a study to clarify how medical students learn by participating in general practice and the role of the socio-cultural context therein.

Methods

Theoretical stance

The methods we used derive partly from our epistemological assumption that when a research topic involves people and their behaviour it is impossible to identify a fully objectifiable truth. It seems more appropriate to speak of multiple truths or realities,

which are socially and experientially based and dependent on individuals. By analysing insiders' views we can bring to the surface their experiences and opinions, analyse them and compare them with existing theories. The knowledge resulting from this process is again hypothetical. This theoretical starting point, based on philosophical notions from post-positivism and constructivism, has guided our decision to use a phenomenological approach in our attempt to construct a conceptual framework.¹⁸

Setting

Fifth-year medical students participated in group interviews in week 8 or 9 of the 10-week general practice clerkship in year 5 of the undergraduate medical programme at Maastricht University. The general practice clerkship is one of twelve obligatory five to ten week clinical placements spread over years 4 and 5 of the curriculum, which is characterised by problem based learning principles and early patient contacts. During the placement students spend most of their time in a GP surgery and, additionally, groups of ten students meet every week with a tutor to reflect on their experiences and expand their biomedical knowledge.

Sampling and ethical procedures

We emailed or telephoned the tutors to ask them to permit students to voluntarily participate in an interview on a tutorial day. All tutors agreed and informed the students of the study. Prior to the actual group interview, the participating students signed an informed consent form after JZ had explained to them the procedure and purpose of the interview and the member checking procedure. JZ made it clear to the students that they were free to refuse to answer any question that made them feel uncomfortable and that there were no 'right' or 'wrong' answers to the interview questions. The students received a 15 euro gift voucher for their participation. The researchers had no involvement in the organisation and assessment of the general practice clerkship. Further ethical procedures are not required and therefore not available for this type of research in the Netherlands.

Group interviews

We developed an interview guide to structure the interviews. First, the students introduced themselves, described the general practice where they were placed and reflected on their experiences. Next, they were asked what and how they had learned so far, specifically what had contributed to or hindered their learning experiences. Later, unless the topic was brought up by the group, questions were asked about the nature of the students' participation, their position and role in the practice and how these elements influenced their learning experiences.

During the session, the moderator (CV or AS) sought confirmation and clarification of identified issues by paraphrasing or questioning. JZ observed the group interviews, asked additional questions and, assisted by a minutes' secretary during the last three interviews, took notes on the order of speakers and relevant nonverbal behaviour. Each of the seven sessions was audio taped and transcribed verbatim by externally contracted personnel.

Analysis procedure

Debriefing sessions of the research team marked the start of the analytical process. The original transcripts were summarised by JZ and submitted to the participants with the request to comment on whether the discussion was rendered accurately and completely (member checking). Computer software Atlas.ti 6 was used to code and analyse the data. After open coding of the first transcript by JZ to identify key phenomena in students' learning experiences and after testing of the code list by PZ, the two researchers reached a consensus on the coding through discussion. This procedure was repeated for the second, third, and fourth transcripts. If deemed necessary, new codes were added or codes were changed. AS read the third transcript and commented on the meaning and application of the codes to ensure congruence between the coding and the group interview. After that, PZ and JZ grouped the codes from the first four interviews into themes to arrive at a preliminary conceptual model. JZ then started a cycle of axial coding for the fifth, sixth and seventh transcripts in order to inductively identify relationships between the themes. JZ and PZ discussed the resulting codes iteratively, which led to further development and refinement of the conceptual model. During the analytical process JZ kept a diary in which she reported and reflected upon the origins of thoughts and decisions regarding the analytical procedure and outcomes. The diary was discussed frequently by all the researchers.

Results

A total of 44 students participated in seven group interviews, lasting between 97 and 114 minutes. The number of participants varied from 5 to 8, the mean age of the participants was 24 years (range 22–39) and 82% was female. All the participants had completed at least five clerkships prior to the general practice clerkship, with an average of 10 clerkships. During the interviews, it became clear that the students were used to talking about learning experiences in terms of knowledge, skills and attitudes, but many appreciated being invited to talk about other aspects. Moreover, students often used their hospital experiences as frame of reference in reflecting on their general practice experiences. They expressed the quality of their experiences more often in terms of “fun” and “appreciation” than in terms of “instructive”. Nineteen

students responded in the member checking procedure and four students made minor remarks, for example regarding details of the GP surgery or their personal take on a certain topic. In the following paragraphs we present the results of the analysis with illustrative quotes.

Developmental space

The students said they learned by doing. The fruitful effect of ‘doing’ (such as conducting a consultation relatively independently) depended on the amount of space students experienced to mind their professional development. The ‘available space’ that emerged from our data consisted of interconnected components and processes contributing to personal growth. Personal growth transcends the acquisition and application of knowledge, skills and attitudes required for a specific clerkship or by a specific physician, and relates to the development of a student’s professional identity. We use the term ‘developmental space’ to denote the explicit and implicit opportunities for identity development that are afforded to and created by students. This term captures students’ experiences as participating professionals, which some students summarised as “finally feeling what it’s like to be a doctor”, or “no longer feeling like a clerk”.

P7.6: Sometimes I even feel that it’s alright for me to just call and say: well, this patient presents with these complaints, I find this and that on physical examination and er, I am thinking of prescribing this. And then he [the GP] says: “It’s okay, just write the prescription”. So, er yes, this feels very good, because I finally begin to sense something like (...) you are finally beginning to do things yourself.

P5.1: In other clerkships I often see more growth in knowledge and for the rest you just do as you are taught. But here [in general practice] you are also looking at things more critically like... is this really how I want to work (...)? Or how patients accept it, so to say?

In the following paragraphs we first describe two components of developmental space: contextual space and socio-emotional space. We then describe, in terms of these different types of spaces, three groups of activities that we identified as central to the general practice clerkship: holding independent consultations, talking about consultations, and observing the GP. These so called participatory activities demonstrate students’ potential for growth through the concept of developmental space.

Contextual space

The possibility for students to mind their learning was influenced by the attributes of the working environment, such as material, organisational and educational elements. Contextual space, for example, was strongly determined by the presence or absence of a special room for students with a computer and access to patient records and by the scheduling of patient consultations for students. The organisational element is manifest in clerkship length, specialty, and its position within the curriculum. For example, prior (clerkship) learning expectations and experiences influenced students' perceptions of the contextual space as was exemplified by students expressing the contrast with hospital clerkships as "being offered a lot more opportunities to learn". Contextual space was also determined by the time available for supervision, mutual observation and feedback, and the patient mix seen by students. These elements were potential educational stimuli for students.

P3.3: I do not have my own surgery hour, but the way we do it is that we always look in the computer and then there are usually two patients in the waiting room and then he [the GP] says, well, "which one would you like to take? Do you want the knee problem or the lung follow-up?" And then I pick the one I can learn from the most.

Socio-emotional space

Socio-emotional space embodies how students' state of mind, often originating from interactions with the social environment, influences possibilities for learning. Students' relationships with their supervisor, other team members and patients influenced their social and professional position within the practice. The nature of these relationships was partly influenced by the local working climate and habits, partly by a personal 'click' with the supervisor and other personnel, and was further developed by participation in patient care. The strong impact of the student's position was manifest in its effect on emotional outcomes such as enjoyment and feeling respected and confident. These positive emotions enabled learning by providing space for students to build their skills and experiences, to accept weaknesses and to feel free to ask questions. If these elements were unclear or disturbing, students were compelled to attend to these negative aspects and as a result effective use of the socio-emotional space would be impaired.

P5.5: You have to be on your toes all the time [in the hospital]. I mean, with the GP I felt this was yes...much less so. That was good, for then you start to feel that you are not afraid to ask questions and also that you can say, well, I don't know this, tell me some more about it, while if you say that in the hospital you always

feel like... yes, I should really know that. And then they say like: “Alright, go and look it up in the textbooks”. (...)

P5.3: Or you get the whole lecture like... “Do you really not know that?!”

P7.4: And when the atmosphere is not good (...) then you hold back. (...)

P7.6: Then you really always have to adjust to what a doctor expects and wants from you. And because of that you cannot really be yourself, for you have, you lose some self confidence anyway and then you, yes, you have to take a different attitude every time and...

P7.5: That takes energy.

P7.6: That takes an awful lot of energy.

Participatory activities

We will describe three types of participatory activities which embody the meaning of and interaction between contextual space and socio-emotional space. This approach allows us to elucidate how ‘learning by doing’ contributes to students’ personal development.

Independent consultations

The students’ main activity was patient contacts. After an introductory period varying from 1 h to several days, students became increasingly independent in taking a history, doing a physical examination, and making a management plan. The GPs had the final responsibility and used varying strategies to ensure patient safety. Further supervisory activities were partly formal (weekly observation-based evaluations) and partly depended on GPs’ routine approaches and students’ development over time. How students learned to become progressively more independent in conducting consultations and how these learning experiences contributed to the development of their professional identity can be explained when we study these processes through the lenses of contextual and socio-emotional spaces.

Contextual space

Clerkship length and the type of primary care tasks in general practice gave students ample opportunity to engage in patient encounters and see patients again at follow-up visits. This ability to engage in continuity of care gave students essential feedback on their medical decision making and enabled them to build doctor-patient relationships. The specific illnesses and complaints in primary health care stimulated students to develop a “new way of thinking and acting”, which they found both inspiring and instructive.

P3.2: In the hospital we are used to, when people come, that means something is wrong. (...) And especially in general practice you make that distinction. (...)

P3.4: And what to me is especially good, (...) they [GPs] allow you to say, like what would you do? And then you have to think for yourself. I think this should be referred, or not, or...and I think in this way you learn somehow. For when he just says, yes I'll refer, then you think, oh yes, of course. But you haven't really thought it through for yourself.

Having their own consultation room gave students a clear status and enabled them to further develop their independence. This room symbolised their position within the practice and supplied them with a safe, private space. The same applied for having access to a computer and a well organised and filled consultation schedule. The latter often developed over time, and was a sign of growth.

P2.3: Your own room that is really very important, isn't it? (...) You feel much more at home, much more at ease, much more... it seems silly, but you feel much more respected when you can sit in your own room...

Which aspects provided valuable guidance and feedback to students depended on their stage of development. At first, GPs' observations, feedback and explanations were the main stimuli, but later on students learned more from being confronted with the consequences of their own actions, which was more powerful than merely being told what they had or had not done well.

P5.1: Generally I have been able to see quite a few patients again at the following visit, and I have really learned a lot from that. (...) Things like that are just good for you, to receive feedback on what you have done. Not only er, as an opinion or as yes... as feedback from some GP, but just like... yes objective things: lab results, X-ray results, er... improvement of the complaints or indeed worsening.

If, in time, the GP remained observing the student's consultations with patients, this considerably dampened the experienced instructiveness of this activity because it detracted from the student's opportunities for self-development. Nevertheless, during the whole clerkship it remained crucial that the GP was available to answer questions or take part in the consultation, both for the sake of patient safety and learning.

P6.4: Mostly I see a lot of patients together with my GP because there aren't that many. In itself that is very good, because he can give feedback immediately. (...) But on the other hand, it sometimes makes me feel uncertain because the GP is

present and (...) then you sort of feel someone breathing down your neck, like how would he do this, and that inhibits you from speaking freely.

Socio-emotional space

As a result of the one-to-one relationship with their supervisor, students felt there was room for the GP to monitor their development, to increasingly trust them as professionals and to give them progressively more independence in patient consultations. The same development of trust, albeit with a less pronounced impact, took place in the students' relationships with other staff, such as receptionists and nurses. Independent patient consultations were significant in light of students' social position in the practice, which varied from being an accepted member of the team that contributes to patient care to being "just the clerk/intern". Providing continuity of care for a group of patients and establishing relationships with them contributed to the students feeling part of the team and created a firm basis for trying out new tasks or skills. The sense of being appreciated and being responsible resulting from feeling recognised as a team member was a strong motivator for students and strengthened their confidence. Moreover, taking responsibility increased students' awareness of their own strengths and weaknesses, which guided them in when and how to ask for supervision or read up on a certain topic.

P7.5: Well, what I also like very much during this clerkship is that you are not so much seen as the clerk who is a nuisance and in the way. (...) You really have your own place there. You see patients, you feel you are really useful. (...) And because of that, you are more, simply part of the team and not someone placed below it.

The specific so-called minor illnesses and complaints which students 'mastered' in general practice contributed to their sense of professional identity as they became increasingly competent to answer the various questions patients asked them. Moreover, students also experienced personal growth as they became better able to deal with medical problems in their private life, for example when family members asked questions about their health.

Conversations about patient consultations

Student-patient encounters were framed in conversations with the GP during or after the consultations. These offered opportunities to both students and GPs. Together they could discuss patient management and elaborate on medical and behavioural issues, while the student could ask questions and the GP could provide feedback on student performance. Initially, these conversations would centre on practical feedback and on exploring and setting boundaries of independence based on the student's performance

and the GP's customary approach. In time, once student and GP had established a feasible and safe working mode, students could develop a certain level of independence in deciding to what extent, when and how they wanted to contact their supervisor. Talking about patients was associated with the development of self-confidence, professionalism and medical knowledge.

Contextual space

The combination of clerkship length and one-to-one supervision offered a firm basis for providing, valuing and using appropriate feedback. Moreover, it provided room for the student to change and for the supervisor to notice that change. In most cases, students could consult the GP at any time, and transparency regarding how they could approach the GP reassured students.

P7.5: My room is next to the GP's room. And er, we have arranged that when I am finished with a patient I leave the door ajar, and when he is finished with his patient and he sees my door is open he comes in. He sits down and then he says: "Well, tell me, er, what do we have here? And what are you going to do about it?"

Whether or not the patient was present during a conversation between the GP and the student influenced if and how students asked questions or expressed doubt, since students thought this could interfere with the professional relationship they were trying to build with a patient. Knowledge and experiences obtained during previous clerkships made it easier for students to contribute to medical discussions and to value received feedback. Supervisors promoted fruitful discussions when they stimulated students' thought processes in a challenging and non-judgemental manner, when they gave them a role in patient care and when they explained things when necessary.

P5.1: Especially with complaints of fatigue, yes, I often would think somatically, while yes... my supervisor's experience naturally had taught that it is often not somatic. (...) And one time he said, well, "do you know what we'll do? When you think it is somatic (...) then we'll just do a blood test, you will see the patient again after a week and then you can see if you can find something"... and I have never found anything.

Socio-emotional space

Students reported that the relatively friendly atmosphere and general interest that surrounded and coloured the conversations created room for them to ask questions and show weaknesses. Patient related conversations were most appreciated when student and supervisor were more or less equal conversation partners. Equality was

apparent from the GP's attitude and language and from the contribution the student was allowed to make to the diagnosis or treatment plan. This made students feel they were taken seriously and challenged them to be a really equal conversation partner and take responsibility. Students also derived a sense of equality from conversations when the GP showed that he/she was not omniscient. Interactions with receptionists and/or nurses who showed they regarded the student as a professional could foster a similar sense of professionalism.

P1.1: Or also when the GP doesn't know something, or when he has the lab results then... At least with me they very often asked like, well, "what do you think? What would you do? Would you refer him or?" Yes, I always liked that (...) and that way I felt they were taking me seriously.

Observing the general practitioner

Students observed their supervisors during patient consultations, in the running of the practice, in communicating with colleagues and in balancing their professional and private lives. Planned observations of patient encounters occurred mostly early in the clerkship and the extent of this activity depended on the level of independence the GP granted the student. In time, observations generally became context-related or occurred only when requested. The observations provided students with information about primary health care in general and with examples of how the GP fulfilled his/her tasks. In group practices, several GPs instead of one offered role models.

P6.1: I learn from the way my GP handles things, (...) how she deals with patients, how she deals with colleagues, how she deals with certain conditions, whether or not you should treat them, whether or not you should refer (...) Just a role model of someone with a lot of experience.

Contextual space

Clerkship length provided students with enough time to understand and value their observations of GPs' behaviour, preventing them from passing early judgements and deepening their understanding of certain behaviour or idiosyncrasies. Students were used to view and judge primary care from a secondary care perspective. By observing how a GP communicated with colleagues in secondary care, students got the full picture and this was an important insight to guide them in their future professional practice. General practices were often located adjacent to or near the GP's home and this gave students the opportunity to observe their GP in his/her private life and how this interacted with their professional identity. Sometimes these observations as well as conversations with the GP on this topic, prompted students to reflect on their future

professional life in a different and more intense way than they had done during hospital based experiences.

P2.2: Now I see much more of the GP's life style so to speak. And maybe I have just never thought about it so much.

P2.6: You often disconnect it. (...)

P2.2: During my clerkships (in the hospital) I did not really see this and now you do see it and that is another extra dimension that makes you think about what you want.

Variation in role models was very much appreciated. It made students feel they could develop their own style and use those elements they considered worthwhile. Moreover, variation in observations made students aware of how differences in working style affected patient encounters.

P3.3: Because I could observe two doctors, and one is really like, (...) he is really very open you know, there isn't much distance. And the other is somehow, yes he is, he is more businesslike, more aloof. (...) And then you see, well yes, how I would want to be in the future (...) for you also see how patients respond, and also how you can get the most out of a conversation.

Observation in an instructional context, when a part task, such as a communication technique or knee examination, was demonstrated, was considered powerful when it was embedded in students' authentic experiences or in questions derived from these experiences. Students learned the most when they could perform the observed task immediately afterwards.

Socio-emotional space

Especially early in the clerkship, observation enabled students to learn more about their supervising GP as a professional and as an individual. Some students said they partly adapted their own working style to that of their supervisor to make a good impression and, they hoped, to promote being accepted as a professional, even though they felt that this did not directly contribute to their own development. Comparing what they observed with their own views and behaviours could lead to both positive and negative identification.

Students spoke of a need to have a positive role model. If they could identify with a GP, they sometimes interpreted this as confirmation of their own professional identity, and this provided room for further development. Negative identification could reinforce students' own ideas about professionalism, but it could also make them feel insecure or uncomfortable if they were unable to do something about situations they considered undesirable.

P3.5: My GP is really someone who says, it is obviously not this, not, not. But patients just hear a jumble of a lot of terms and finally he says what it is. And I think; you see those people looking very anxious at first and then things just go horribly wrong (...) Then I just prefer to do things myself, rather than sitting there.

When GPs made themselves vulnerable, by being very open about their reflections on their feelings during patient encounters, for example, or by admitting to patients that they did not know it all, they set an example for students, who would then feel free to adopt similar behaviour.

P2.6: Then you see how he does it, how at the end of the patient contact he stops to think: Well, what has this done with me, and he tells you about it too. Even if it is quite... well quite deep and... that he makes himself vulnerable. And when he is not afraid to... then I will also not be afraid.

Discussion

Principal findings

Our study was aimed at clarifying how medical students learn from participating in a general practice setting by exploring the socio-cultural context of the learning environment.

The analysis revealed that students need developmental space in order to be truly mindful of their learning processes. Both contextual and socio-emotional elements influenced the way opportunities for developing a professional identity were afforded to or created by students. We explained these elements by showing their effects in relation to three 'participatory activities': independent consultations, conversations about consultations, and observation of GPs. Pivotal in these activities was the meaning attached to the students' role and how that was reflected in and connected with their level of independence, with being 'allowed' to be a learner and with the freedom 'to really be a doctor'. The nature of the social and professional interaction with the supervising GP (and others such as patients and receptionists) and the physical and organisational environment had a direct or indirect impact on how students experienced their role and transition herein. Furthermore, these components and processes influenced how students came to feel motivated, respected and self-confident, which were emotional prerequisites for the creation of developmental space and the ensuing opportunities for personal growth.

Relationship to other studies

Our findings are in line with empirical evidence concerning medical students' learning processes in the workplace, showing the importance of elements like the role of supervisors, a safe learning environment and the development of students' confidence. We think our study contributes to the existing knowledge by adding insights that can promote our understanding of why and how those elements influence student learning. We will explain this by interpreting our results in the light of findings from earlier empirical and theoretical studies.

Dornan et al. developed an experience-based learning (ExBL) model, which partly aligns with our findings.¹⁹ It links processes and outcomes of workplace learning during medical students' mainly hospital based learning experiences. Central in this model is the concept of supported participation, which is conducive to learning outcomes, such as a positive state of mind and practical competence, which, in turn, influence student learning.¹⁹ Although the components and detailed descriptions of the ExBL model show many similarities with our findings, from a conceptual point of view, our approach differs in the central position we accord to developmental space rather than supported participation. As a result of this focus on the contextual and socio-emotional implications of participatory activities and their impact on student learning, our results suggest ways to explain why and how the processes of supported participation that are at the core of the ExBL model affect student learning in the workplace.

When we compare our results regarding the relationship between participatory activities and learning with Teunissen's, postgraduate based, framework of workplace learning²⁰, we find that this framework resonates with our findings, because it recognises the importance of integration of social, cultural and material context. However, it is different in its emphasis on individual cognitive learning processes, reflecting aspects of Eraut's theory of informal learning²¹, which postulates that learning processes are structured by conscious and unconscious thoughts regarding personal attributes (individual beliefs, values, goals, memories and knowledge structures) and personal experiences (individuals' perceptions of a specific situation).

Our concept of developmental space also resonates with Vygotsky's claim that "an essential feature of learning is that it creates the zone of proximal development", i.e. the distance between learners' actual developmental level and their level of potential development. This dynamic distance is both determined and bridged by social interaction.²² Our findings illustrate how the combination of contextual elements and interactive processes between GPs and students can create situations in which students appear to make a transition through their zone of proximal development. One might say that developmental space is like the water and sunshine that are essential for Vygotsky's 'buds' and 'flowers' to turn into 'fruits' of development.²² From this point of view, the concept of developmental space is also in alignment with Maslow's hierarchy of human needs. This humanist orientation towards learning relies on the premise that

physiological and emotional needs have to be met before a person can act upon growth needs that lead towards self-actualisation.¹⁵

Our findings with respect to the relationship between socio-emotional and contextual elements and potentially constructive participatory activities also resemble aspects of cultural-historical activity theory (CHAT), which underlines the relationship between learners' actual 'doing' and the meaning assigned to actions through the historically determined rules, roles and artefacts of the community in which the learner acts.¹⁷ This theory shows similarities to our findings in that it provides an analytical framework, including contextual and cultural mediators that can identify components of a learning environment that either hinder or promote learning through participating in activities. It differs from our findings in that it directly attributes a specific outcome to an action, while our focus is the process of arriving at a favourable situation, in which a student can begin to learn.

Lave and Wenger's concept of legitimacy is easily recognisable in our findings concerning the importance of feeling accepted and respected both as an individual and as a professional while at the same time being 'allowed' to be a learner. Also, the value students in our study placed on increased involvement in professional practice, reflected in more scheduled patient consultations and involvement in patient management decisions, strongly resembles the notion of learning as an integral component of the movement from the periphery to the centre of a community.¹⁶

Strengths and limitations

Our interpretation of learning from the perspective of developmental space is based on rich empirical findings and a clear theoretical perspective. In analysing the data, we have tried to strike a reflective balance between 'allowing the data to speak for itself' and employing a socio-cultural lens. In this way one might regard our findings as providing a bridge between the predominantly cognitive research in this field and social cultural learning perspectives. Both ends of this bridge appear to have strong foundations, while empirical as well as theoretical pillars support the bridge and provide strength to allow safe crossing. The fact that our results are only based on clerkship experiences in general practice could be regarded as a limitation of their applicability in other settings. However, we think that in the preceding paragraphs we have demonstrated how our results show overlap with findings from studies in predominantly hospital based and postgraduate settings. Because the general practice clerkship is scheduled near the end of the curriculum, the participants may have been more aware of the process of professional identity formation, which may have coloured their learning experiences. Nevertheless, the basic principles of our model also resonate in findings among third year medical students regarding early patient contacts.²³ We are less sure about the impact of country-related differences with

respect to the culture and context of both hospital and general practice based learning settings.

Unanswered questions and further research

We would recommend further research from a socio-cultural perspective to refine our interpretations and to include other aspects of medical workplace learning. For example, it would be interesting to establish whether similar prerequisite elements and processes would create 'teaching space' for supervisors. Furthermore, we think it would be valuable to investigate what sorts of 'truths' regarding medical students' learning processes hold true for educational developers, and how these relate to our socio-cultural concept of learning. This is of particular importance with respect to the design and implementation of (changes in) clinical placements. Relatively long placements may be eminently suitable to provide essential room to foster students' development by offering opportunities for creating a safe learning environment, establishing a (one-to-one) relationship with a supervisor and a gradual increase in clinical responsibility. Like other practical implications of our research findings, such as students having their own consultation room, these preliminary suggestions should be interpreted with caution and used chiefly to guide further research, considering their obvious dependence on local contexts.

Conclusion

We clarified medical students' learning processes during clerkships by analysing their experiences from a socio-cultural perspective. Our results reveal why students need developmental space in order to truly 'learn from doing'. We have demonstrated how the concept of developmental space is created through the intertwining of workplace context, personal and professional interactions, and emotions such as feeling respected and self-confident. These forces frame students' activities and thereby determine how much room is created to enable them to mind their own professional development.

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Chapter 4

Making sense of how physician preceptors interact with medical students: discourses of dialogue, good medical practice, and relationship trajectories

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Abstract

Work-based learning and teaching in health care settings are complex and dynamic. Socio-cultural theory addresses this complexity by focusing on interaction between learners, teachers, and their environment as learners develop their professional identity. Although social interaction between doctors and students plays a crucial role in this developmental process, socio-cultural research from the perspective of doctors is scarce. We performed discourse analysis on seven general practitioners' audio diaries during a 10-week general practice clerkship to study how they gave shape to their interaction with their students. Examination of 61 diary-entries revealed trajectories of developing relationships. These trajectories were initiated by the way respondents established a point of departure, based on their first impression of the students. It continued through the development of dialogue with their student and through conceptualizations of good medical practice. Such conceptualizations about what was normal in medical and educational practice enabled respondents to recognize qualities in the student and to indirectly determine students' desired learning trajectory. Towards the end, discursive turns in respondents' narratives signalled development within the relationship. This became evident in division of roles and positions in the context of daily practice. Although respondents held power in the relationships, we found that their actions depended strongly on what the students afforded them socially. Our findings address a gap in literature and could further inform theory and practice, for example by finding out how to foster constructive dialogue between doctors and students, or by exploring different discourses among learners and teachers in other contexts.

Introduction

Within health care facilities worldwide, doctors contribute to medical students' clinical learning experiences by supervising and teaching them. To do so, doctors have to be available, enthusiastic, communicative, and medically and educationally competent. They need to involve learners in authentic patient encounters and guide them towards working increasingly independently, whilst providing them with timely, constructive feedback. Moreover, they have to do so while warranting patient safety and without running late.

The description above stems from literature that searches for the golden ingredients of effective work-based learning and teaching practice.¹⁻⁶ These ingredients relate to doctors' tasks, traits and/or behaviours, distilled from learners' preferences and best practices. Such descriptions tend to extract medical teachers' qualities from the context of daily practice or focus on formal learning activities. Work-based teaching, in contrast, is made up of on the job dynamic and contextually bound activities.^{7,8} This dynamic and highly contextualized nature of teaching and learning is reflected in the varying perceptions and evaluations of those involved^{9,10}, the haphazard nature of educational activities¹¹, the difficulty in aligning student and teacher perspectives on when teaching takes place in the first place¹⁰, and the role of hierarchy, for example when "being put on the spot" can result in an incentive to learning as well as a humiliating experience.^{10,11}

A socio-cultural perspective on work-based learning offers an approach that locates learning within social activities, taking place in the interactions between people (doctors, students, patients), between people and artefacts (stethoscopes, prescriptions, student notes), and in interaction with specific physical and social contexts. Learners, teachers, as well as patients contribute to the joint enterprise of identity development, in which the development of social relationships plays a pivotal role.¹² From such a perspective, any 'golden teaching ingredient' should involve understanding the interpersonal and contextualized dynamics of being a teaching physician and interacting with students. Although patients influence work-based learning and teaching when they interact with both doctors and students^{13,14}, our focus in the remainder of this paper will be on the doctor-student dyad.

There is medical education research that focuses on the joint enterprise towards identity development, as mentioned above, from the perspective of learners.¹⁵⁻²¹ Such research has informed us how students need to feel entitled to be present and engage in local activities during clerkships. Student-doctor interaction makes up those context bound activities and their socio-emotional meaning to the students, which again influences their identity development.²¹ Helmich et al. set out how "feeling and displaying negative and positive emotions, adjusting to or experiencing dissonance with the social milieu, finding or not finding a role, and participating or not participating in social practice (...) refer to the emotional, cognitive and social components of meaning

making and identity development'' within students' early clinical experiences.¹⁵ In line with these findings, Vagan explained how students struggle to position themselves as clinical learners in the medical world as they give significance to, for example, their knowledge and skills when they give case presentations or explain their clinical reasoning.²⁰

Research that translates the notions of socio-cultural learning to doctors' daily teaching experiences is, however, scarce. Lyon touched upon these notions in her model of teaching and learning in operating theatres. She described how surgeons and students continuously engaged in the mutual process of 'sizing up'. For surgeons, this entailed searching for students' interest, motivation, commitment and professional conduct. Through this mutual process, surgeons established the trust and legitimacy that was necessary for them to give students access to practice as peripheral participants. For students, this level of participation influenced the potential for positive learning outcomes.¹⁷

Taking the above into account, it becomes clear that we have to understand work-based teaching from a socio-cultural perspective if we want to understand and improve daily teacher-student interaction as a pivotal process of work-based learning. Therefore, the aim of this study was to find out how doctors give shape to their day-to-day interactions with medical students and how that evolves during clerkships.

To answer these questions in light of social-cultural learning theory, we started from the assumption that language is a culturally constructed sign system which both makes up and reflects social interaction and relationships.¹² By taking a look at language use that goes beyond actual semantic meaning, one can see how talk and text construct social practices and enable people to think, say and act in a certain way. Discourse analysis is a methodology that uses such an approach to language to understand complex social phenomena.²² Therefore, we have carried out discourse analysis on the evolving relationship between seven doctors' and medical students attached to them, as represented in audio diaries in which doctors described and reflected upon their interaction with students over a period of 10 weeks of one-to-one supervision.

Methodology

The audio diaries were not treated as a direct reflection of doctors' social interactions like a mirror reflecting one's face, but as language that provided insight in how doctors gave shape to their interactional experiences. As Gee explains, narratives not only display what people are saying, but they also reveal what they are trying to do.²³ Discourse analysis is a way of exploring narratives, and other forms of language or text, to investigate people's assumptions and social actions. It relies on how language-in-use both constructs and reflects, for example, identities, practices, relationships, values, beliefs and symbols.²³ This allows discourse analysis to articulate what is normally taken

for granted about language use, showing what talking accomplishes in a particular social context.²⁴ Our discourse analytical stance led to the following leading question during analysis: how do doctors discursively construct their interaction with students?

Context

The study took place in a mandatory 10-week general practice clerkship. This clerkship is scheduled in year 5 of the 6-year undergraduate medical programme at Maastricht University. Prior to this clerkship, students participate in at least six different, mostly hospital based clerkships, each lasting 5–10 weeks. At the beginning of this clerkship, students are first introduced to the practice and its members and activities. After a variable time of sitting in with their general practitioner (GP), students start consulting with patients, becoming progressively more independent. Depending on the infrastructure of the practice, GPs' habits and their abilities, students are integrated in the workforce and may even contribute to daily practice. This involves, for example, planning and seeing their 'own' patients again and doing home visits. The GPs always hold final responsibility. They supervise students in holding patient consultations, have frequent formal and informal 'supervisory meetings' with students, and play a role in their formative and summative assessment. Students spend about 4 days per week in the practice and have weekly tutorial meetings at the university. Halfway and at the end of the clerkship, a tutor from the academic department of general practice visits the practice to discuss how the clerkship is progressing. Thus, a general practice clerkship provided us with a work-based learning context in which doctors supervised students longitudinally in the context of real clinical practice.

Recruitment

We recruited GPs who had agreed to supervise a student. We sought participants of different ages and levels of experience as supervisors, and for different gender combinations in the student–teacher dyads. We excluded those who supervised more than one student at a time. Potential participants were contacted by e-mail and/or phone and those who agreed to participate were instructed in person (JZ) a week prior to the beginning of the clerkship. Each participant received a 100 euro dinner voucher for full participation.

Data collection

From August 2011 to May 2012, eight GPs agreed to participate. One participant dropped out early for personal reasons. Each of them was asked to make daily audio diary recordings in the first week of the clerkship, followed by weekly recordings in weeks 2–10. Halfway and at the end of the clerkship, participants were interviewed by

JZ. The interviews provided contextual data to refine interpretation of the audio diaries as well as the overarching analysis.

Participants were instructed to describe the most recent meaningful moments of interaction with their students, using a dictaphone. This could involve any kind of interaction, but should include detailed descriptions of the context, the student, themselves, and any other person involved. Participants sent the audio recordings by e-mail to JZ as soon as possible. If they were not able to send them, JZ collected them in person.

The individual interviews were semi-structured and based on both general questions (How are things going? How would the participant describe the (interaction with the) student? How is the student developing? How does the participant experience supervising this student? What is enjoyable or difficult about it?), and on questions relating to the participant's earlier audio diaries.

Data analysis

JZ listened to the audio diaries, thanked the participants by e-mail, and gave feedback about the nature of the diary. This entailed assuring participants that their material was useful if they questioned it, stimulating them to give as detailed descriptions of actual experiences as possible or to include non-formal moments of interaction as well, or simply reminding them to send the diaries. Recordings were transcribed verbatim by a commercial transcription service, paying attention to hesitations, pauses, laughter or other expressions. JZ refined the transcripts by parsing the narratives and underlining words that were emphasized (by loudness or pitch). Data derived from the interviews were transcribed verbatim and checked carefully against the audio diaries, although they were not used as primary data.

JZ, TD, and LJ read the refined transcripts using Gee's building tasks and tools of enquiry to sensitize them to salient features in the narratives. This entailed attending to discursive construction of significance, practices, identities, relationships, politics, connections, sign systems, and knowledge (building tasks). These constructs were found by applying tools of inquiry such as seeking situated meaning, social language-specialist language, figured worlds, intertextuality, discourses and conversations (see "Appendix 4.1" for further explanation).²³ JZ then met TD and LJ respectively to discuss interpretations and to compare and challenge their reflections on the data. Preliminary findings and/or difficult cases were discussed with PT and AS who read part of the original data. Transcripts were analyzed per participant in a longitudinal manner, so that researchers could immerse themselves in participants' narratives and become aware of possible trajectories within them. After two longitudinal analyses had been completed, striking similarities were apparent in the way the narratives unfolded. We made a provisional decision to use the longitudinally evolving relationships -as constructed by participants- as the unit of analysis. Interim interpretations were

discussed jointly by all researchers and led to a further phase of data gathering and analysis. Two similar cycles of data collection and analysis followed which led to the analysis of the audio diaries and interviews from seven participants, after which we deemed the data to be broad and deep enough to answer our research question.

Ethical approval

We received ethical approval from the Netherlands Association for Medical Education (NVMO) Ethical Review Board and the CEL (Coordination Centre for Education and Research within the Department of General Practice). Both students and GPs were informed about the scope and nature of the study and gave written consent. Confidentiality was ensured.

Results

Respondents recorded on average nine (range 5–14) entries in their audio diaries over a period of 10 weeks. Entries lasted, on average, 3.5 min (range 1–7). The total number of entries was 61 (3 h 29 min). Individual interviews lasted on average 37 min (range 14–56 min). Respondents' details are shown in Table 4.1.

Table 4.1 Participant details

	Student supervised	Age participant	Number of years experience as GP	Number of students supervised prior to participation
Sarah (f)	Esther (f)	41	7	1
Peter (m)	Els (f)	47	11	28
Abby (f)	Mark (m)	37	9	10
Carrie (f)	Nathalie (f)	44	11	4
Norman (m)	Samuel (m)	46	19	6
George (m)	Sophie (f)	48	12	0
Eric (m)	Joanna (f)	43	10	2

All respondents' sets of diary entries followed trajectories, within which they described and gave meaning to interactions with their students. The trajectories included establishing points of departure, developing dialogue, enacting good medical practice, and turning towards closure. In the description of results, we have used participants' authentic language as much as possible and will explain and illustrate findings further using paradigm cases. The abbreviation SV is used to indicate when a quotation is from a supervisor. Unless explained otherwise, underlining signifies that respondents emphasized words in their audio recordings.

Establishing a point of departure

Respondents' diary recordings after their first encounters drew on first impressions to 'frame' students; they made significant in their narratives what they valued or envisioned in those first encounters, what they found 'appropriate', and how their actual interaction with their student related to that. They discursively positioned the student and themselves, and what connected or distanced them. For example, Sarah (SV) constructed distance between herself and Esther when she described her as "very quiet and holding back", "showing motivation to prepare [for her GP clerkship] in a medical technical sense", but "lacking enthusiasm for someone who is about to start a new and unknown clerkship". Sarah positioned herself as "feeling uncomfortable" and "working hard to keep the conversation running". She laughed nervously (reinforcing her uncomfortable position) when she said she wondered how the clerkship would turn out. Norman (SV) referred to Samuel as "a boy who is eager to learn" and "who gives the impression he is confident enough to start seeing patients soon". Norman (SV) positioned himself by estimating "it will not be a very difficult clerkship to be a supervisor". This is an example of how respondents established a point of departure for the relationship. It resulted in different activities that respondents found appropriate for students (showing motivation versus start seeing patients).

In paradigm case 1, the point of departure was "hope", "doubt" and an initially disappointing relationship for which the supervisor held the student responsible; future activities revolved around the student's capacity to "open up" and "be honest".

Paradigm case 1 Establishing a point of departure

In his first audio recording, Eric (SV) constructed the preliminary phone call and introductory meeting with Joanna as a conflict between his ideas about clerkship interactions with students, and the way reality was unfolding. Eric said how she "told me what she wants to learn" but was disappointed because he would have liked her to have "more wishes and desires". He hoped, but doubted, she would "dare to express herself critically" towards him after "probably being used to giving socially acceptable answers in hospital clerkships". He expected he would have to "work quite hard to have her open up and be honest" with him. His expectation conflicted with his wish for her to see him as a "facilitating person". He would "create opportunities" but "she will have to do it".

Developing dialogue

Following the first encounter, respondents started interacting with the students in the context of daily practice. They built relationships by searching for ways of developing dialogue with students. Dialogue was not just a communicative act but a platform on which respondents could gradually give shape to students' identities and roles in the context of daily practice. Respondents searched for students' "motivation" or "enthusiasm"; they wanted students to "open up". Sarah (SV), for example, noticed

that Esther, who had at first lacked enthusiasm, now “watched and listened with much interest” and responded reflectively to a joint consultation: “Not at all in a medical technical sense, but a very social, empathic conversation”. Respondents developed dialogue in “sharing experiences”, “asking questions” or, in a negative sense, in the way a student “shrugged her shoulders”. When talking about their developing relationship, respondents also gave shape to what the students afforded them in terms of “opening up as well”, “talking about weaknesses”, questioning their ability as a supervisor, or being “annoyed” by the student. Paradigm case 2 demonstrates how a supervisor struggled to find dialogue that would constitute a relationship in which he could relate to the student the way he used to do.

Respondents discursively drew other staff into dialogue as well. Respondent George (SV) purposefully sat down in the coffee room “to allow the receptionists to meet her as well” while Abby (SV) quoted the receptionists enthusiastically, saying “yes, yes, yes, he’s nice [the student], isn’t he? He’s nice!”.

Paradigm case 2 Developing dialogue

Norman (SV) normally found dialogue in extensive discussions prompted by students’ questions. With Samuel, he tried to find similar dialogue by “extended thinking with the student” (2nd diary recording), “spending time and energy” (3rd recording) and “talking about things calmly” (5th recording). However, in time, Norman constructed Samuel as someone who “asks a few specific questions” to which he could give “specific answers”, but they did not lead on to “lengthy, thorough discussion” (7th recording). Norman then positioned himself as the one who talked all the time, which he didn’t want to do. “It is his learning process, not mine” (recording 8). The absence of an adequate platform made him withdraw discursively from the learning process.

Enacting good medical practice

In their audio diaries, respondents constructed what was, for them, good medical practice by privileging certain practical, social, and professional activities or values. This was apparent in the qualities and roles they recognized in students. For example, respondents contrasted the social practice of primary care with the more technical medical practice of hospitals, which was used to position (and, at times, critique) students. The discourse of good medical practice involved activities such as adapting physical examination skills to the context of general practice in response to “time pressure” and “being led by the patient’s symptoms”. It privileged a social identity, which acknowledged “the insecurities one has to cope with as a GP” and “being a more complete doctor” by “making oneself heard and seen” when interacting with patients and colleagues.

Respondents’ discourse of good medical practice was also apparent in how they built relationships with students. They addressed relationships from the social and holistic perspective that might be considered typical of general practice. For example, Peter

(SV) particularly valued that his student Els shared her experience of her father being admitted to hospital with him. Moreover, Carrie (SV) disprivileged the way Nathalie immediately wanted to discuss her learning goals while she wanted to “make contact with the student” first.

The discourse of good medical practice included respondents’ historical and current practice of actually employing and/or striving for social and professional values. For example, Eric (SV) autobiographically recognized a potential area for development in Joanna. In his narratives, he repeatedly returned to his own development as a person and doctor, positioning Joanna in a rather similar position to the one he used to be in. However, she did not want to change in that particular area. To her opinion, she had “changed enough”, and she did not engage in the conversations he tried to have with her. This was detrimental for the relationship’s development, because this was how he tried to make contact with her.

Thus, through the discourse of good medical practice, respondents constructed similarities and differences between themselves and their students. In that way, they defined the qualities or practices in which these students could, should, or did (not) change. This is an example of how respondents indirectly delineated students’ desired learning trajectories by employing their conceptualizations of good medical practice. The following case (paradigm case 3) demonstrates how Sarah (SV) gave shape to her interaction with Esther through the discourse of good medical practice and her own autobiography.

Paradigm case 3 Enacting good medical practice

When Sarah’s (SV) consultation took 25 minutes because she wanted to hear the patient’s story, Esther said it was “very long”. Sarah, 4th recording: “She felt she would get too much information; she didn’t want to be too involved with patients because she was afraid that it would cost her too much time,”. Sarah constructed this moment as one in which Esther “had not reached a certain level” and in which she felt she was “on a completely different golf course”. When Esther’s reflection on the consultation did not align with Sarah’s framework of good practice, Sarah interpreted this as incompetence. Later, Sarah learned that Esther could actually become very involved with patients and their stories and that she needed to learn how to set boundaries in these relationships, which was somewhat similar to Sarah’s autobiographical experiences in vocational training. What had been constructed earlier as differences was now reconstructed as areas of mutual interest. She then increasingly quoted Esther’s utterances and included her in clinical decisions she had to make in daily practice: “She made me think about what I was doing as a medical professional, that I wanted to know what was going on [from a medical point of view], and had indeed lost eye for the patient himself (recording 7).”

Turning towards closure

By gradually positioning students and themselves in certain ways, respondents defined the final shape and affordances of their relationships. For example, in his final interview, Norman (SV) stated that “personally, he [Samuel] was a wonderful and easy person to interact with”, and that they shared “their surgeon-humor, like men do”. However, in daily practice it was “difficult to supervise him” and that “he wouldn’t want to supervise him if he was a resident!”.

Towards the end of the clerkships, participants’ discourses often made significant turns. These discursive turns related to whether respondents experienced difficulties in their relationship with the students as overcome, as (partially) accepted, or as still existing. This was apparent in role reversals when respondents positioned students opposite to the original division of roles in their interactions (for example between Sarah (SV) and her student as outlined in paradigm case 3) or through constructions of detachment from the difficulty or even from the student, as in Eric’s (SV) audio diaries: “I feel somewhat weary, and the promise I made (...) that I was indeed going to make her ‘unassertiveness’ subject of conversation...Er...I’m not going to do anything with it (...) I notice our interaction gets bogged down, increasingly, into superficial contact”.

Other respondents increasingly integrated students’ voices into their daily practice. They shared and nourished students’ enthusiasm; for instance, when returning from home visits. Alternatively, they described themselves as being guilty of not functioning well enough as supervisors. Doing so, respondents brought closure to the relationship’s trajectory by gradually positioning themselves and the students, and at times appraising these ‘outcomes’. In the following example (case 4), the respondent brought closure to the relationship by positioning the student as a caregiver in development and by becoming more engaged in this learning process herself.

Paradigm case 4 Turning towards closure

Carrie (SV) constructed her interaction with Nathalie through (their) experiences in, and (mostly her) values on daily professional practice. Reflections on Carrie’s medical, emotional, and ethical challenges of being a GP were the framework through which she, for example, addressed that “one (our emphasis) is allowed to have insecurities and to show them” (2nd recording), that “one should be very aware” of how one’s opinion about a patient could influence one’s practice (4th recording). Initially, these constructions are rather distancing (note the use of “one” as subject). Towards the end of the clerkship, Carrie increasingly uses Nathalie’s contributions as incorporated in meaningful daily practice. When they visited a hospitalized patient she saw “her radiating care to these people, (...) standing there in a very different manner than she would have, wearing a white coat” (recording 11). In her final audio recording Carrie described how Nathalie returned enthusiastically from a home visit where she had done an important finding, and Carrie started speaking as if she quoted her literally with enthusiasm she had not shown so far! This shared enthusiasm constructed Nathalie’s successful development as a young medical doctor on the one hand, and it allowed Carrie to engage in their relationship more personally and to stretch her boundaries, on the other hand.

Discussion

Principal findings in relation to existing literature

Respondents constructed their interactions with students by privileging certain characteristics, knowledge, activities and relationships, which often found origin in the socio-professional language of general practice, and respondents' personal trajectories therein. This involved, for example, hearing patients' stories, dealing with uncertainties, adapting hospital based technical medicine to primary care, and getting to know each other. Doing so, they positioned both the students and themselves in their framework of 'good medical practice'. This was a continuous process in which respondents sought dialogue with students to do the positioning work; they pronounced and acted upon anything from how a student contributed to a consultation, to how a student shrugged her shoulders.

When Lave and Wenger conceive of learning in terms of participation and, thus, "focus on ways it is an evolving, continuously set of relations"²⁵, our findings demonstrate how teaching is embedded in an ongoing process of relationship construction, and the identities, tasks, values and tools that are involved in this process.

Participants' utterances reflected the dynamic nature of these relationships, and how they were constructed over time (in real time, in autobiographical and socio-professional history, in future expectations). Moreover, they gave shape to how students' became part of their practice (their *being*) or not, and the degree to which they "allowed" students to bring about change in this already instable environment. Aligning socio-cultural theory to the critical aspect of discourse analysis, this issue of power resonates with Engeström's notions of 'learning by expanding'²⁶, as it illustrates how respondents discursively delineated their power structures (affording reproduction of practice) versus challenging existing power structures, allowing for production or transformation of practice.

Our findings further align with Lyon's model in which surgeons and students 'sized up' each other's behaviour, which ultimately influenced how they experienced teaching and learning environments.¹⁷ Our findings demonstrate how this process may influence doctor-student relationships longitudinally in the context of daily practice. The reciprocity of 'sizing up' was apparent in how respondents spoke of what the students afforded them in dialogue and practice: working hard to have a conversation at all versus having someone with them to share difficult events in practice. Although respondents usually held power, establishing a (more or less) fruitful relationship was actually a joint enterprise. As explained in the introduction, most educational research departs from the perspective of learners and thereby constructs the teachers as being responsible for the quality of learning and teaching. This is evident in how a learning environment (e.g. teachers, patients, artefacts, discussions) provides affordances for students in light of their potential for development. However, our findings underline

how teachers' interaction with their environment (including the students) provides them with affordances (be it positive or negative) to build a relationship and to 'teach'. In our case, the interaction between teacher and the student in a particular environment may afford certain interaction or 'teaching'. Students are therefore part of the dialogue in which their 'milieu', 'role', 'participation', 'developmental space' and 'professional identity' are constructed.^{15,21} Although students usually are not in charge of the dialogue, transparency in this relationship could facilitate potential learning opportunities and decrease negative consequences related to power and hierarchy in doctor-student relationships.²⁷

Strengths and limitations

This study addresses the complexity of work-based teaching in a longitudinal manner, prompted by socio-cultural learning theory, and using discourse analysis as a methodological framework. It opened and put into words a layer of assumptions of which participants were largely unconscious²³ and offers novel insights for work-based teaching and learning. Our interpretations are a result of interaction with respondents' stories in their specific contexts. The direct transferability of our interpretations may therefore seem limited. However, we do not claim to discover truth but rather to generate interpretative claims that can be advanced in future research or practice, that might lead us closer to a clearer understanding of our lived reality.²⁸ We have tried to support this meaning-based process by providing contextual information, by having audited reflexive discussions during analysis, and by presenting the case paradigms to increase transparency about the analytical process.

Implications for practice

A doctor constructing a relationship in terms of sharing, exchanging, and being challenged might establish mutuality and equity, allowing space for (reciprocal) mentorship, contribution to medical practice, and mutual development. A doctor who constructs a relationship in terms of teaching, changing, and challenging a student might establish educational hierarchy, allowing space for (unidirectional) 'teachership' and the development of a good (or bad) medical student and a good (or bad) teacher. Becoming aware of how one engages in relationships with students could enable doctors to reflect and act on their strengths and challenges, taking into account what different students afford them in different contexts. Likewise, reciprocity within the relationship addresses the responsibility students have as well. Even in teaching relationships that will always be hierarchical to some extent, students might benefit from becoming aware of these underlying reciprocal processes. Although we will not be able to heal clerkship fatigue prevalent among students²⁹, students might benefit from, for example, putting the need to show 'enthusiasm' and 'motivation' in a perspective that focuses on dialogue instead of performing.

Both for doctors and students, an advanced communication course might be beneficial in helping them navigate constructively the many relationships they encounter and deal with moments of friction. For educators, this raises the question how to foster and support dialogue between doctors and students in the variety of work-based learning settings in medical education.

Implications for research

The findings of this study are at least to some extent specific to the context in which the study took place. Therefore, it would be worthwhile to explore how doctors who spend less, fragmented time with students, or who do not volunteer to supervise students, give shape to their interactions with students. Moreover, the complexity of many learning environments asks for the exploration of how co-workers, patients, other students, and allied health professional contribute to these interactional processes. Bringing to surface how both students and teachers (and, as previously mentioned, possibly other stakeholders) give meaning to shared activities, the discourses that are at play, and the way they interact, might help in the appreciation of the affordances of social interaction in different health care settings. Communication experts might then tune in on these processes to find leads for fruitful support and interventions.

Conclusion

When doctors interact with students in a work-based learning environment, they use dialogue to define and give shape to their conceptualizations (discourses) of good medical practice, desired relationships, and their own engagement and participation in it. Doing so, they both influence and depend on students' learning trajectories by creating the pillars and boundaries for this relationship and the division of roles in their daily medical practice. Both teachers and students might benefit from becoming aware of and making transparent this reciprocal process when they interact with each other.

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Appendix 4.1 Gee's building tasks and tools of inquiry

Building tasks

Significance: Using language to make things significant or important in various ways or to lower their significance or importance.

Practices (activities): Using language to enact specific practices (activities) alone or with others. A practice means a socially recognized and institutionally or culturally supported endeavor that usually involves sequencing or combining actions in certain specified ways.

Identities: Using language to enact specific socially situated identities or to project such identities onto others, or to privilege or disprivilege such identities. The identity building task refers to identity as how we recognize and act out social role or different social positions in society; different ways of being in the world at different times and places for different purposes.

Relationships: Using language to create or sustain social relationships or to end or harm them.

Politics: Using language to give or take away social goods or projecting how social goods (anything a person or group in society wants and values) are or ought to be distributed. This involves speaking/writing/acting in ways that say or imply what is "appropriate", "normal", "natural", "good", or "acceptable" (or their opposites) in regard to certain people, things, or activities.

Connections: Using language to make things connected or relevant to each other or to make them disconnected or irrelevant to each other.

Sign systems and knowledge: Using language to create, sustain, revise, change, privilege or disprivilege any language or sign system or characteristic way of knowing the world or making knowledge claims about the world.

Tools of inquiry

Situated meaning: The specific meanings words and phrases take on in actual contexts of use. Speakers and writers construct their utterances or sentences to guide listeners and readers in constructing these specific meanings based on what was said and the context in which it was said.

Social language - Specialist language: Any variety or style of speaking or writing associated with a socially situated identity of any sort (this identity may be associated with a social group, profession, culture, practice, social role, or interest-driven activity like video gaming).

Figured worlds (espoused, evaluative, world(s)-in-interaction): A theory, story, model, or image of a simplified world that captures what is taken to be typical or normal about people, practices, things, or interactions. What is taken to be typical or normal, of course, varies by context and by people's social and cultural group.

Intertextuality: Spoken or written text alludes to, quotes, or otherwise relates to another one; a sort of cross-reference.

Discourses: Ways of combining and integrating language, actions, interactions, ways of thinking, believing, valuing, and using various symbols, tools and objects to enact a particular sort of socially recognizable identity.

Conversations: Debates in society or within specific social groups that large numbers of people recognize, both in terms of what “sides” there are to take in such debates and what sorts of people tend to be on each side.

Chapter 5

**Is it a question of hierarchy? Revealing the
affordances of doctor-student interaction
during clerkships**

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Submitted

Abstract

Context

During clerkships, teaching and learning in day-to-day activities takes place in many moments of interaction between doctors, patients, peers, and other co-workers. The way people talk with each other influences their identity, their position, and what they are allowed to do. This paper focuses on the affordances of such moments of interaction between doctors and students during a clerkship characterized by short supervisory relationships.

Methods

This study took place in a 10 week internal medicine clerkship in which the length of supervisory relationships varied from half a day to two weeks. Nine students and ten doctors who worked with these nine students participated by regularly describing moments of interaction, using a Dictaphone. We performed critical discourse analysis on a total of 184 audio diary entries and 7 student debriefing interviews to reveal how participants discursively shaped the way they could both think, speak, and conduct themselves.

Results

The way doctors and students posed and answered questions, was a recurrent and influential feature in the diaries. This Question & Answer dynamic revealed six discourses: Basic Need, Care and Attention, Power Game, Currency, Distance, and Equality and Reciprocity. These discourses and the interplay between them revealed both students' and doctors' frameworks of needs and expectations in a culturally defined power structure. The interplay between the discourses reflected the way doctor-student interaction afforded meaningful contribution to their medical or educational practice, for example by exchanging authentic professional or personal experience.

Conclusions

By purposefully bringing to surface power structures, we have addressed the complexity of learning and teaching as it takes place in day-to-day moments of interaction in a clerkship with little continuity in supervision. Hereby, we shone new light on existing practice, revealing both its opportunities and challenges.

Introduction

Medical education encompasses many aspects: learning to talk and act like a doctor, learning the content of a curriculum, enacting the different roles within a competency based framework, and 'qualifying'.¹⁻³ Most of all, it is about becoming a doctor and your changing role in daily interaction with patients and health professionals.³ During clerkships, identity formation refers to the way students discover what it means to be a clerk and a doctor. When they start wearing a white coat, they participate in different day-to-day activities, paying attention to and interacting with local unofficial rules, values, beliefs, and attitudes.³ In doing so, students construct their professional identity by using knowledge, language, and tools, and by encountering power relations and experiencing reinforcement from others.^{1,3,4} In interaction with doctors, patients, peers, and other co-workers, dialogue or talk is an important medium for identity development. However, dialogue in an institutional context such as a healthcare facility is quite different from the way people talk in casual conversation⁵ or in educational settings such as lectures and tutorial groups. Institutional dialogue is strongly influenced by goal-oriented communication practices of its members, including a structure of roles, values, and expectations.^{5,6} The opportunities afforded to students by a workplace, in terms of, for instance, access to activities and guidance from more experienced co-workers, are distributed in ways that reflect power relationships, personal relations, and cultural practices.⁷ Hereby, the clinical learning environment at times challenges students to find a way to survive in a threatening environment, to please authority figures and to avoid humiliation.^{8,9} For example, Rees and Monrouxe described how, within bedside teaching encounters, power, identity and gender were constructed through laughter, which reflected and enacted the superordinate position of doctors and subordinate positions for both students and patients.¹⁰ Thus, understanding how opportunities (and challenges) of social interaction are shaped by the norms and practices of clinical learning environments becomes critical.⁷ This is particularly important when these moments of interaction take place in clerkships with little supervisory continuity, which do not always allow for advanced development of supervisory relationships.¹¹ Therefore, the aim of this study was to bring to surface the affordances of social interaction between doctors and students in a clinical learning environment characterized by little continuity of supervision. To reveal these affordances, we looked at how doctors and students discursively shaped the way they interacted with each other in day-to-day moments of interaction.

Methods

Ethics

This study received approval from both the Netherlands Association for Medical Education (NVMO) Ethical Review Board (file number 221) and the local clerkship coordinator. Participation was entirely voluntary and confidentiality was ensured. Participants received and signed informed consent forms, in which we emphasized that participation would not affect students' assessment.

Methodological orientation

Critical Discourse Analysis (CDA) aims to illuminate and critique structures of power in language-in-use.¹² We performed CDA as it aligned with our research aim, i.e. to examine the language and practices of professionals (students and doctors) in institutions (hospital, clerkship).¹² We used Willig's six stages approach, which focuses on the availability of specific discursive resources within a culture and its implications for those who live within it. Hereby, it unveils how discourses can limit, enable and constrain what can be said and done, by whom, where, and when.¹³

Context

The study took place in a mandatory 10-week internal medicine clerkship in year 4 of a 6-year undergraduate medical programme at Maastricht University. The first three years of this curriculum are devoted to basic sciences, clinical sciences, and skills training. In their third year students have regular patient encounters.¹⁴ Students begin with their clinical clerkships in their fourth year. The internal medicine clerkship is one of six clerkships that take place in year 4. We conducted the study in one of the non-academic hospitals affiliated to Maastricht University. This clerkship was divided in rotations that each lasted one or two weeks. Students participated in different wards, outpatient clinics, and were on call for one week. Residents and specialists who worked in these settings were required to supervise students. The length of the actual supervisory relationship varied from half a day to two weeks.

Recruitment

We recruited participants for this study among the pool of students allocated to this particular clerkship at the time of data collection (January - July 2013). We purposefully sampled both male and female students. Every doctor who supervised one of the participating students was a potential participant as well. All doctors who could encounter student participants were informed about the study and encouraged to

participate. Both doctor and student participants received a gift voucher when they completed participation.

Data collection

Of eleven possible student participants, nine students agreed to participate. They were provided with a Dictaphone and instructed to make at least three audio diary recordings per week in which they described meaningful moments of interactions with doctors they interacted with. These moments could relate to formal, informal, positive, and negative experiences. Participants sent their audio diaries to JZ by e-mail. At the end of their clerkship, students were invited for a short debriefing interview. Parallel to the data collection among students, the doctors they worked with were also provided with Dictaphones and received similar instructions. Ten doctors agreed to participate and returned audio diaries, while students reported interaction with an additional 37 doctors.

Data analysis

Externally contracted personnel that assured confidentiality transcribed the audio diaries and interviews, which were subsequently anonymized by JZ. The transcripts included hesitations, pauses, laughter, or other non-verbal expressions. Data analysis involved multiple cycles of reading, writing, coding and discussing the dataset, while writing an audit trail (JZ, LJ, AC, RS). We followed Willig's six stages approach, as introduced in the methodological orientation. These stages map the discursive resources that were employed in the narratives relating to "social interaction", describe the related positions people could take, and explore the implications for what they could feel, think and do.¹³ The six stages are further explained in Appendix 5.1.

We selected all fragments related to social interaction and wrote and discussed notes based on the six stages. After analyzing the data from the first two student participants and the doctors they interacted with, the social phenomenon of asking and answering questions was a recurrent and critical guiding principle in the diary entries. We used this question and answer dynamic as an analytical lens to approach and dissect the complex phenomenon of social interaction for the remainder of the analysis. We selected all fragments related to asking questions in the complete dataset. JZ and AC completed and discussed stage 1 and 2 for these fragments and refined a code book based on the different ways in which participants explicitly and implicitly spoke about asking questions (discursive constructions). All 59 discursive constructions were then integrated and reduced to six main discourses. In the final part of the analysis, we produced written accounts of Willig's stages 3-6 for all quotations per main discourse (JZ, LJ, AC, RS). These accounts were summarized and discussed until our synthesis provided a meaningful answer to our research question.

Results

Table 5.1 provides an overview of participants' characteristics. The dataset comprised 184 individual audio diaries from both students and doctors and 7 short student debriefing interviews (7-22 min). The set of diary entries lasted 6 hours and 45 minutes. On average, a diary entry lasted 2 minutes. Students produced the majority (73%) of the audio diaries. One student did not provide audio diaries. We did include the audio diaries about this student as recorded by doctor participants. A total of 218 text fragments relating to the critical guiding principle of 'asking questions' (the analytical lens) were selected for analysis. On average, each fragment consisted of approximately 120 words.

Table 5.1 Participant characteristics

Student participants			
Identifier	Name	Age	Number of prior clerkships completed
S1	Lara Williams	21	2
S2	Jenny Wilde (f)	21	1
S3	Simon Young (m)	24	2
S4	Tess Edwards (f)	22	2
S5	Julia Adams (f)	21	2
S6	Nick Foster (m)	24	0
S7	Claire Simpson (f)	22	3
S8	Alex Dixon (m)	22	3
S9	Matt Phillips (m)	23	3
Doctor participants			
Identifier	Name	Age	Position
D1	Helen Hall (f)	24	Resident
D2	Jack Carter (m)	47	Specialist
D3	Rob Evans (m)	34	Specialist
D4	Ann Smith (f)	29	Resident
D5	Emma Cooper (f)	29	Resident
D6	Dr. Robbins (m)	56	Specialist
D7	James Stuart (m)	44	Specialist
D8	Sandra Klein (f)	27	Resident
D9	Lynette Walsh (f)	33	Specialist
D10	Frits Moore (m)	29	Resident

Below, we will first describe the Question and Answer (Q&A) dynamic, which was a critical force in doctor-student interaction and formed the basis our findings revolved around. We then present the discourses that were at play in the Q&A dynamic and the way these discourses related to each other. Finally, these findings will be synthesized by describing the related affordances. Participants' quotations are presented in "*italic*" and labeled with an identifier (see Table 5.1).

The question and answer dynamic

The Q&A dynamic entailed the way in which relationships between doctors and students were constructed by how they posed and answered questions. The way questions and answers were discursively handled strongly influenced the possibilities for taking certain positions and actions at that moment or in the near future; both for students and doctors. These possibilities influenced the development of doctor-student relationships and, as we will explain later, the authenticity and meaningfulness of students' participation during the clerkship in particular.

Discourses at play

Within the Q&A dynamic six discourses were apparent. Each discourse had a specific way of constructing the social phenomenon of asking questions and the related consequences for the positions and actions for students and doctors.

Asking questions was found to be constructed as: a Basic Need, Care and Attention, a Power Game, Currency, Distance, and Equality and Reciprocity. These discourses were employed by both doctors and students, but there were substantive differences regarding their occurrence in students' and doctors' narratives, respectively (see Table 5.2).

Table 5.2 Percentage of quotations per discourse

Doctors speaking		Students speaking	
Currency	34%	Care&Attention	22%
Power Game	31%	Basic Need	21%
Basic Need	15%	Distance	21%
Equality&Reciprocity	8%	Equality&Reciprocity	15%
Care&Attention	8%	Power Game	14%
Distance	4%	Currency	7%

The **Basic Need** discourse constructed asking questions as a student's need. By asking questions or by being asked questions, students "*simply learned the most*" (S1), "*became very involved in a consultation*" (S2), and "*tested their knowledge*" (S4). When this basic need was fulfilled, doctors' and students' narratives contained utterances of satisfaction regarding their teaching and learning performance. Both doctors and students employed this discourse substantively (see Table 5.2). However, a tension was found regarding the division of responsibility in asking questions. Students mainly held doctors responsible for asking *them* questions, whereas doctors positioned students as the ones to do the asking since students would be in the position to "*not know*" (D1) or "*not understand*" (D4) something. Doctors positioned themselves as knowledgeable, and therefore in the position to answer questions rather than posing them. In Text box 5.1 we summarize the explanation of this discourse and provide exemplary quotations.

Text box 5.1 The Basic Need discourse: summary and exemplary quotations

THE BASIC NEED DISCOURSE

Asking questions is a student's need. By asking questions or by being asked questions students learn and augment their knowledge.

Doctor:

Normally I like to ask about things, and if somebody asks me a question, I like to respond with yet another question and get people to find their answers that way, but yesterday there wasn't enough time for that. But I think he got enough out of it. (D9)

Student:

There were also some bad news consultations that day, and she actively involved me in those. She also asked me, "what would you do in this situation? What would you do differently from what I have just done?" I appreciated her asking me questions about that, because I do think that it's the way in which you learn these things and how to deal with them. (S8)

The **Care and Attention** (C&A) discourse constructed the Question and Answer dynamic as a means through which doctors could give students attention and care for them. Again, students held doctors responsible for making them feel "*comfortable*" (S8, S7) safe and respected by "*taking the time*" (S7) to ask them questions or making students "*feel free*" (S8) to ask questions. Students evaluated doctors in light of their willingness or ability to do this, taking into account the specific context in which they interacted, such as "*a full waiting room*" (S8) or knowing that the doctor was "*very busy*" (S4). The C&A discourse was the most common discourse in students' narratives (see Table 5.2). Within this discourse, students discursively shaped their socio-emotional point of departure, their ability to "*work with*" (S3) certain doctors, and related opportunities to participate in medical practice. In doctors' narratives, the C&A was far less present (see Table 5.2). They constructed care and attention as something that had to be employed in specific situations, for example when they deemed attention for a student's emotional experience important (see Text box 5.2). At times the C&A discourse was employed by doctors to legitimize the fact that there was "*not so much room*" (D3) for students to ask questions or to pay attention to them, as the context – such as a busy clinic or the presence of a resident that needed to be trained – would not allow doctors to do so.

Text box 5.2 The Care and Attention discourse: summary and exemplary quotations

CARE AND ATTENTION

By asking students questions or by allowing students to ask questions, doctors care for students. Students experience this as positive attention, which allows them to feel safe and respected.

Doctor:

Lara had not previously experienced the starting of eh.. Midazolam and after it happened we discussed it all. (...) Eh, Lara hadn't noticed any stress in that moment, also not within herself, she could talk about it very openly. (...) I asked her about that, whether she didn't find things around the death of a patient scary or unpleasant, but she told me that this was not the case. (D1)

Student:

On the first day of my clerkship I had to accompany Jackie Grey on the ward rounds. During the rounds I felt free to ask many questions. It was also reasonably quiet. The atmosphere was relaxed, so that possibility was there. At the end of the rounds I was also asked, do you have any questions about this patient? Is there anything else you want to know? So I liked that. (S8)

The **Power Game** discourse created frameworks that informed doctors' interaction with students intensely. These frameworks were characterized by personally and culturally defined norms and values, related hierarchical positions for both students and doctors, and specific contexts in which these expectations manifested, such as the first time they met, or grand rounds as "*the event of the week*" (D2). In doctors' narratives, the Power Game discourse was enacted in how and when they expected students to ask questions. Moreover, this discourse was apparent in the way doctors asked students questions and thereby, at times, expressed their disapproval of students' behavior. In students' narratives, the Power Game discourse was apparent in how doctors "*ran down*" students (S2), and in how students' questions could simply be ignored. Furthermore, this discourse constructed rules that students had to follow and doctors had to make sure students followed these adequately. Students employed the Power Game discourse mainly in describing critical incidents, in which the rules of the interaction game were discovered, contested, followed or broken. Students positioned themselves as inferior (S1: "*I found him overwhelming (...) His truth was the truth*"), and as searching for ways to deal with this game and "*hold one's ground*" (S3). Students ascribed power to doctors in determining how they could or could not behave and participate. Students gained some power when they were aware of the game and consciously chose moments to "*shine and make a good impression*" even when it involved "*undermining*" another student (S9). See Text box 5.3 for additional quotations.

Text box 5.3 The Power Game discourse: summary and exemplary quotations**POWER GAME**

Asking and answering questions is constructed within a framework of doctors' predetermined expectations. These cultural and hierarchical expectations are locally and/or personally determined.

Doctor:

I asked again [like he did with most students] about his, eh, history as medical student, what kind of things [clerkships] he had done. He spoke enthusiastically about an elective in traumatology and surgery that he had already done. Right, where I start the conversation again about, gosh, what is actually the purpose of the clerkships? And he is able to tell me that he thinks he wants to be a doctor and therefore he must be able to communicate, to look at people and, eh, also to think about them. So in principle he sounded quite adequate. (D2)

Student:

And when we walked over to the evening handover, Fritz suddenly came and walked next to me and, eh, yes, he was a bit annoyed and eh, he asked eh, where had I been, what had I done eh, that afternoon, so yes, I...I felt a little bit [laughs] a bit bad about that. (...) I said that I was just eh, that I had been working on some assignments and then he said "yeah, you are not supposed to work on your study assignments during working hours", even though, even though we have the right to do that (...) it is just, I found it so uncomfortable at that time that I didn't dare to challenge him on it, so I didn't say anything. (S5)

Doctors also employed the **Currency** discourse extensively. This discourse constructed asking questions as a currency for students to demonstrate interest, initiative, motivation and enthusiasm to supervising doctors. This discourse was apparent in how doctors judged students and estimated whether they "*were willing to learn*" (D3) and it would be satisfactory to invest in them. They positioned students as the ones who needed to prove themselves and make themselves known instead of "*remaining quietly distant*" (D2), simply by posing enough and the right questions. Students consciously used the Currency discourse when they spoke about how they purposefully asked certain questions "*to ensure good assessment*" (S9) and to "*maintain rapport*" with doctors (S7). At times students struggled: "*Do they want me to ask many questions? Few questions? How should I take up a position?*" (S2). Additionally, they used the Currency discourse when they did not receive value for their money (see Text box 5.4), or in the opposite case, when they gained free entrance when doctors gave access to fruitful learning situations "*without asking for it*" (S1).

Text box 5.4 The Currency discourse: summary and exemplary quotations

CURRENCY

By asking questions students demonstrate interest, motivation and enthusiasm to supervising doctors. When students have fulfilled this means of payment they are ‘good students’ and may gain access to further practice.

Doctor:

She comes across to me, well, like she’s not very interested in this clerkship, and like she already knows it all and eh, also like she does not feel the need to eh, to talk about eh, yeah, about patients or internal medicine. She also doesn’t ask many questions, and is rather quiet and in the background. (D10)

Student:

It was eh, on the ward...eh, I noticed that eh (...) that I kind of, that I constantly eh, had to ask the resident, like, “where are you going, where are you going?” (...) I try, right, where I can help I will help and I try eh, as much as possible, eh, also, I show initiative, I say things like, shall I go to that patient or shall I do this? (...) So I show initiative and everything, but I don’t have the idea that I, that I get anything in return, because I keep on having to ask, “excuse me, where are you going?” (S4)

The **Distance** discourse constructed the way questions were posed or answered as a process that was hindered, caused negative responses, or signified a problematic relationship. Hence, the Q&A dynamic created distance between students and doctors. Doctors hardly used this discourse. When they did, it was to express their dissatisfaction regarding students who, for example, broke the rules in their Power Game by behaving too familiar, or by remaining distant from important medical discussions (see Text box 5.5). Students used the Distance discourse extensively to express their dissatisfaction as well. They spoke about feeling “uncomfortable” (S2, S5), “annoyed” (S2), “embarrassed” (S4, S9) or “disrespected” (S4). This usually related to specific moments in which a conflict arose between their needs – as constructed in the Basic Need and the Care & Attention discourse – and their experiences. These conflicts referred to how doctors impaired the possibilities for students to pose questions, how they did not (adequately) respond to questions, or how students’ answers were run down by doctors or were followed by laughter.

Text box 5.5 The Distance discourse: summary and exemplary quotations**DISTANCE**

Asking questions creates distance between doctors and students; it involves negative responses and/or the act of asking questions is hindered.

Doctor:

We had grand rounds this morning. For us it's always the highlight of the week, a big discussion together, coffee and biscuits. Very complex pathology, in particular about end of life, euthanasia, (...) quality care. Eh, [I] still noticed that Lara quietly kept herself to herself. I try to involve her, and occasionally ask her a question. Eh.. I don't get much back from her. (D2)

Student:

I think, either eh... she [the supervising resident] either has to be honest to me and say, "hey, would you please, or would you help me, we are so busy". Then it's fine, but she didn't clearly, eh, showed what it was she wanted, so it was a bit of a strange situation for me. Eh, I then just wrote the reports after all, and then I had, I asked like, "are there any other reports?" [But] there was nothing for me to do. Then I just sat next to her eh, and then nothing happened for a while. She was still just typing. (S7)

The **Equality and Reciprocity** (E&R) discourse constructed the Q&A dynamic as something that was stripped of power and hierarchy and involved more equality between doctors and students. Students were then positioned as more of a direct colleague than a subordinate or a pupil. This was apparent in how a doctor "*appreciated a very pleasant conversation*" with a student and referring to him as "*friendly and a good listener*" (D8). This discourse was often employed in the context of a busy shift in the emergency department or, on the contrast, a quiet one-to-one conversation, for instance in a car when residents gave students a ride home. The Q&A dynamic was then characterized by students as "*smooth*", "*casual*" (S4) or "*supple*" (S1), in which "*wrong answers*" were accepted (S4). It involved (mutual) respect and acknowledgement of both doctors' and students' potential contribution to medical, educational or personal activities, for example when a doctor "*appreciates*" a student's question, for she had to "*think...what are my feelings?*" (D4). See Text box 5.6 for additional quotations.

Text box 5.6 The Equality and Reciprocity discourse: summary and quotations

EQUALITY AND RECIPROCITY

Asking questions is constructed as something that is stripped of power and hierarchy. Questions are posed based on true personal or professional – and at times mutual – interest.

Doctor:

Matt did a Sunday shift with me and has joined, eh, the carpool with me. Eh, he was particularly interested in eh, life outside of work and how to combine it, how many hours in a working day and if it is or isn't difficult to get a registrar position and what sort of things you can do to make it easier. Eh, here in Accidents and Emergency he is joining in well, really shows initiative, thinks along making differential diagnoses and treatment plans and he doesn't hesitate to, eh, to share it. (D10)

Student:

We had eh, a final evaluation meeting, kind of. He [the supervising resident] took me to one side in that same room as where we started, the coffee room. And eh, then he started saying like "well, Tess", you know, "what did you think? And eh, how do you think the week went" Eh... he said, he asked me like, "what can I improve, do you have tips for me as a physician about how I should supervise the student? (...) And what did you think went well, what didn't go so well?" So, then I just told him. He also told me what he thought of me. (S4)

Relationships between discourses

As outlined above, six discourses were at play when doctors and students interacted with each other. Figure 5.1 demonstrates the relationships between these discourses by zooming in on the Question and Answer dynamic between a doctor (D) and a student (S). The infinite arrow loops represent the ongoing character of the Q&A dynamic between doctors and students. The Q&A dynamic is embedded in layers of power. The inner circle represents the Basic Need and the Care and Attention discourses. These discourses complemented each other in constructing basic requirements for satisfactory educational or supervisory practice. The outer circle addresses a stronger layer of power within the Q&A dynamic: the Power Game. Together with the Currency discourse (represented by the coins), the Power Game influenced the Q&A dynamic by constructing a straightjacket of culturally defined game rules. Tensions between the inner and outer circle related strongly to both doctors' and students' utterances employing the Distance discourse on the one hand, and the Equality and Reciprocity (E&R) discourse on the other hand.

Within these tensions in the Q&A dynamic, doctors discursively held power and thereby owned keys towards enactment of either Distance or E&R. However, students who seemed conscious of the outer circle, tried to create so called short cuts by actively playing along, asking the right questions, or trying to gain access through engagement in the right conversation.

Figure 5.1 Relationships between discourses in the Question and Answer dynamic

Affordances

As these discourses were in play, different layers of power were addressed, which led to different positions and affordances for doctors and students. In Table 5.3 we have outlined the affordances related to the different discourses, and the tensions that were involved.

Overall, social interaction in a socially complex and dynamic learning environment afforded doctors and students to repeatedly redefine the structure and boundaries of essentially unequal supervisory relationships. This involved multiple encounters of differing needs and expectations, which related to the tension fields between the discourses. Both for doctors and students it was often a challenge to create a momentum in these relationships that fostered room to have meaningful and authentic dialogue.

The affordances of social interaction in such a context can be synthesized in two conceptual categories: the creation of developmental space and the creation of developmental vacuum.

Table 5.3 Discursive affordances for doctors and students and related tensions

Discourse	Affordances doctor	Affordances student	Tensions
Basic Need	<ul style="list-style-type: none"> - Empowerment by possession of knowledge and answers to questions - Challenge when students do not ask questions 	<ul style="list-style-type: none"> - Empowered in making contact with doctors - Dependence on doctor regarding involvement and learning 	<ul style="list-style-type: none"> - Division of responsibility - Conflicting expectations
Care and Attention	<ul style="list-style-type: none"> - Making contact with and caring for students - "Legitimizing" absence of interaction 	<ul style="list-style-type: none"> - Achieving a position of feeling at ease. - Gaining a focus on learning. - Dependence on doctors' practice of "taking care" 	<ul style="list-style-type: none"> - Conflicting expectations - Avoidance of initiating contact
Power Game	<ul style="list-style-type: none"> - Reification of culture and related power positions - Guarding game rules - Student assessment - Struggles when student interaction does not fit Power Game 	<ul style="list-style-type: none"> - Discovering local culture and power game - Then either struggling, being silenced, playing along, battling or resisting. 	<ul style="list-style-type: none"> - Conscious versus unconscious employment of Power Game - Creation of developmental space versus developmental vacuum.
Currency	<ul style="list-style-type: none"> - Tools to judge/assess students - Estimation of the value of investing in student 	<ul style="list-style-type: none"> - Confusion related to right amount and shape of payment - Playing along with the game - Free access to learning - Frustration when student does not get value for money 	<ul style="list-style-type: none"> - Conflicting expectations regarding type and manner of payment - Loosing focus on learning or teaching
Distance	<ul style="list-style-type: none"> - Disengagement in relationship with student - Empowerment through consequential actions when students break the power game rules - Legitimizing limited (investment in) interaction 	<ul style="list-style-type: none"> - Victim position when doctors do not meet students' expectations - Inactivation - Legitimizing search for others to interact with or other means for learning 	<ul style="list-style-type: none"> - Different preferences regarding the right and amount of distance between doctors and students - Developmental vacuum
Equality and Reciprocity	<ul style="list-style-type: none"> - Enjoying and making most use out of supervisory relationship - Exchange of personal and professional experiences 	<ul style="list-style-type: none"> - Meaningful and authentic dialogue - Room for students' voices - Space for students' development and contributions to practice 	<ul style="list-style-type: none"> - Different conceptions of equality - Doctors remain in charge - Developmental space

Developmental Space has been introduced earlier as “the explicit and implicit opportunities for identity development that are afforded to and created by students”, which relates to meaningful participation.¹⁵ In this study, this concept captured how the Q&A dynamic created momentum and gave space for doctors, students, or both, to exchange authentic personal and professional experiences. This related to a sense of activation and moving forward, enacted in, for example, contribution to medical practice. **Developmental Vacuum** denotes the absence of momentum in the Q&A dynamic. It relates to stagnation, disengagement, inactivation or frustration, and thereby blocks any authentic development or contribution to meaningful medical practice or education. In Text box 5.7, three exemplary cases illustrate how social interaction afforded Developmental Space and Developmental Vacuum, respectively.

Text box 5.7 Three exemplary cases illustrating Developmental Vacuum and Developmental Space

Developmental Vacuum

Medical student Julia describes a grand round on the final day of her two week pulmonary rotation. Besides herself, two specialists (Dr Murray and Dr Meyer) and one resident (Justin) are involved. She describes how *“Dr Murray, a somewhat older doctor, knew it was my last day and therefore enjoyed to test me, and to ask me questions as long as the grand rounds lasted”*. She had to *“explain all these blood gas analyses and judge chest X-rays”*. She talks about how she struggles, as she feels she should have said she did not know some of the answers to his questions, but she finds herself remaining in doubt for a long time. When Dr. Murray begins to laugh at her, and the other two doctors begin to laugh along with him, she blocks. *“I felt very bad and not at ease at all. The only thing I could think was “oh please, let this be over soon” and the whole time I was afraid that they would, or that Dr Murray would bring another question to the table.”*

Resident Ann Smith reflects on her supervisory relationship with one of the students. *“Eh,...[it] was very difficult to get a clear conversation with Nick, because I could ask him things and I did get a response. I tried very much to get him to ask questions, so “hey, are there things that happened to you? Are there any questions?” And nothing much came back from his end. So I thought that was difficult, because at a certain moment I think, well, if you don’t have any questions, then well, whatever. Right, so I started asking him questions to see if he knew the answers and it turned out he didn’t know the answers that well, but yeah, I thought it was very difficult to.., eh, yeah..., to have a real conversation with him.”*

Developmental Space

Medical student Tess describes being on call with a specialist and a resident. *“I’ve... they’ve been asking me questions, they involved me with each patient we saw, saying: “Alright, Tess, what is your treatment plan, what are you going to do with this patient?” And that’s what I like, that, I enjoy testing my knowledge and that was certainly happening today”*. She elaborates a little further, saying: *“Erm, and that, the fact that you think along as a medical student, the fact that it is all being appreciated... And sometimes it is wrong, my answer was wrong, but then it wasn’t a problem, because then they would simply, very calmly, explain why it was wrong or why it was right. Then, that’s what I found very instructive.”*

Discussion

Grounded in a Critical Discourse methodology, this study revealed how power was enacted in posing and answering questions, a well-recognized phenomenon in medical education.¹⁶ On a micro level, we have uncovered how the dynamic of posing and answering questions may or may not provide doctors and students authentic and meaningful opportunities for personal development or useful collaboration. On a macro level, we have helped to understand how the discursive affordances of these dialogues usually reproduce and, at times, challenge existing power structures. Hereby, we shone new light on a social phenomenon, which meaning is usually taken for granted or at least not openly scrutinized. However, from a theoretical point of view, questions are known to be prominent as powerful means in institutional dialogue⁵, to enact and reflect institution's social worlds, goals and values, and the professional and lay identities of key parties.⁶

On a micro level, the interaction between doctors and students took place in the tension fields of six discourses: Basic Need, Care and Attention, Power Game, Currency, Distance, and Equality and Reciprocity. These discourses, and the interplay between them, reflected individually and contextually embedded frameworks about how students learned and doctors supervised, the meaning of socio-emotional support, the cultural and hierarchical frameworks that defined rules for interaction, and the desired and practiced supervisory relationships herein. During a ten week clerkship, characterized by many supervisory relationships, this entailed that both doctors and students had to continuously redefine the affordances of their interaction. We conceptualized the affordances of doctor-student interaction in two categories: Developmental Space and Developmental Vacuum. These concepts captured whether or not moments of interaction – and the related development of relationships – created momentum for doctors and students. Momentum was created by the provision of space for the exchange of authentic professional or personal experiences. This exchange could then be followed by a (at times, reciprocal) contribution to meaningful medical practice or education. Hereby, each moment of interaction laid a foundation for the professional identity development of doctors and, particularly, of medical students. Together, these moments of interaction formed chains of events, leaving a trail of affordances for both doctors and students.

From a critical perspective, these affordances were largely grounded in cultural and hierarchical frameworks. This was apparent in how doctors predominantly employed the Currency and Power Game discourse, and how the tensions with students' use of the Basic Need and the Care and Attention discourse were reflected in the Distance discourse. These tensions enabled both positive and negative affordances of social interaction, enacted in, for example, a first acquaintance, during grand rounds, a night on call, or a week on a ward. Lyon presented an interpretative model of teaching and learning in the operating theatre that aligns with our findings.¹⁷ This model focuses on

how both students and doctors critically “size up” each other’s behavior, affording a relationship of (mutual) trust and legitimacy, or not. Although Lyon does not explicitly focus on issues of power, the explanation and illustrations of this model strongly resonate with the Currency, Power Game, and Distance discourses we have described. On a more macro level, the organization and performance of social interaction between doctors and students was strongly embedded in “cultural mores that were transmitted, but not openly acknowledged”.⁸ Our six discourses, and particularly the relations between them, illustrate a power laden structure in which these cultural mores are reflected and enacted; the hierarchical culture was reified in the Question and Answer dynamic. Similar power structures were found in clinical teachers’ discourses of ‘curriculum-in-action’.¹⁸ Students were positioned at the bottom of power hierarchy, partly as a result of their reliance on doctors to teach them and lead in setting the boundaries for interaction. One explanation might be that students may struggle to adjust to the pro-active learning style that medical workplaces require.¹⁹ Doctors positioned themselves in a powerful position, constructing their identity predominantly through being busy with large number of patients rather than taking responsibility for students’ learning. In a study by Rees, parallel power structures were identified in both the medical and educational triadic relationships (thus, including patients).²⁰ For example, doctors could actively hold both patients and students at the periphery of medical practice, and from an educational perspective, they positioned students as ‘developing children’, without taking up the (responsible) position as parents – basically leaving students orphaned. However, parallel to our findings, doctors do not often consciously express, or reflect on these power structures. One of the surgeons who was interviewed in Lyon’s study even located the critical impact of the Question and Answer dynamic as something that derives from “surgeons being human”.¹⁷ Thus, there seems to be a discrepancy between the way culturally defined hierarchical frameworks affect workplace learning and teaching, and the way they are not consciously described or acknowledged by doctors who co-construct these frameworks. This discrepancy can be explained by the way doctors’ professional identity is constructed predominantly in a community of *medical practice*, rather than *educational practice*. Doctors are trained to be *doctors*, with their identity being constructed in relationships with patients and other doctors. In doctor-patient relationships, doctors are often used to being the ones who have ‘the’ knowledge and control, leaving little tolerance for uncertainty, ambiguity, doubt, and error.^{8,21,22} When doctors are used to this role, it might be a challenge for them to engage in a more egalitarian relationship with students.

Strengths and limitations

As illustrated in the methodological orientation and in the discussion above, the analysis and results are both theoretically and empirically grounded. We have triangulated data from both students and doctors, collected through audio diaries as

well as interviews. The use of audio diaries allowed participants to speak freely, which provided us with rich and authentic narratives.^{3,23} Authenticity was further attained by collecting data in different activities and contexts of a clerkship, and by including narratives about varying doctor-student dyads. A limitation herein was the relatively low response among doctors, which decreased the variability in these dyads. This low response can be seen as part of our findings, illustrating how doctors' identities are constructed mainly through medical practice and patient care. Being a clinical teacher and participating in research within this theme might not fit their priorities. In light of transferability, the fact that this study took place in one type of clerkship (internal medicine) and in one particular hospital can be seen as a limitation as well. However, by describing the context of our study we have enabled readers to judge to what degree our findings are transferable to their setting. Moreover, considering this study as part of a line of research^{15,24}, relying on how our findings aligned with existing literature, and taking into account our description of the specific context of this study, we think it is appropriate for researchers to be inspired and to build on our interpretation.

Implications for practice and research

First and foremost, our findings could help in making stakeholders aware of both the opportunities and challenges in the supervisory relationships between doctors and students during clerkships. Challenges are partly embedded in the length and intensity of these relationships. Clerkships that have little continuity in supervision, like the clerkship in which our study took place, are known to leave less room for the development of supervisory relationships and related opportunities for students' progressive authentic clinical participation¹¹, and "serving in doctor-like roles in managing patient care".²⁵ Moreover, as we discussed earlier, little continuity may hamper doctors' identity development as clinical teachers.¹¹ Despite the extensive discussions related to the recommendation of more continuity in clerkships^{26,27}, many clerkships will still be situated in places with little continuity. Therefore, another challenge is to foster meaningful educational relationships under any circumstances, acknowledging the impact of a hierarchical culture as well. We encourage research and practice that uses this challenge as an opportunity. Both doctors and students could be invited to reflect critically on how they contribute to these relationships, for example through something as ostensibly simple, but actually as powerful as the Question and Answer dynamic. Doctors could be encouraged to actively create less of a power difference by departing from a position of not knowing, treating students as experts regarding their learning processes, and by getting students talking.⁶ Although so far we focused on the doctor-student dyad, expanding further research to the triadic relationships between doctors, students, and patients, might offer opportunities as well. Particularly in those characterized by a patient-centred approach, in which

“patients are at the heart of the clinical encounter”²⁰, power structures might change, and improve doctor-student relationships. In such relationships, students and patients would jointly work towards knowledge production in light of patient care, where doctors would “explicitly register their intent to provide a resource, supporting student learning, not shaping it”.²¹ Hereby, doctors will not only foster students’ contribution to and participation in medical practice^{11,15}, they will also start to identify themselves as clinical teachers, which is known to increase their enjoyment of supervising students, and prevents them from withdrawing from this task.¹¹ From an overarching perspective, and to address the complexity of changing a culture, we agree with Graham and Dornan (2013) that future research and practice should focus on thorough but careful examination of clinical teachers’ and students’ discourses in different settings, exploring whether and how their discursive models are fixed or can be changed at all.¹⁸ Such research might involve observation of doctors, students and patients as they interact, followed by critical debriefing sessions, in which critical situations regarding their interaction are made explicit and discussed.

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Appendix 5.1 Willig's six stages approach

Stage 1: Discursive constructions	<p>How do people talk about a discursive object? (for example "social interaction", "asking questions")</p> <p>Select different ways in which the discursive object is implicitly and explicitly constructed.</p>
Stage 2: Discourses	<p>What are the differences between the constructions?</p> <p>Locate various discursive constructions of the object within wider discourses.</p>
Stage 3: Action orientation	<p>Closer examination of the discursive contexts within which the different constructions of the object are being deployed:</p> <p>What is gained from constructing the object in this particular way at this particular point within the text?</p> <p>What is its function and how does it relate to other construction produced in the surrounding text?</p>
Stage 4: Positioning	<p>What are the subject positions that the various constructions of the discursive objects offer?</p> <p>A subject position within a discourse identifies 'a location for persons within the structure of rights and duties for those who use that repertoire'.</p> <p>Subject positions are different from roles in that they offer discursive locations from which to speak and act rather than prescribing a particular part to be acted out.</p>
Stage 5: Practice	<p>What is the relationship between discourse and practice?</p> <p>Mapping the possibilities for action contained within the discursive constructions identified in the text; ways in which discursive constructions and subject positions open up or close down opportunities for action.</p>
Stage 6: Subjectivity	<p>What is the relationship between discourse and subjectivity?</p> <p>Tracing the consequences of taking up various subject positions for the participants' subjective experience; what can be felt, thought and experienced from within various subject positions?</p> <p>Most speculative stage.</p>

Chapter 6

Discussion

Background

During their clerkships, medical students grow into young doctors. Health care facilities provide an authentic environment in which students engage in medical practice and develop their professional identity as they learn to contribute to patient care, as they practice their skills, build on and apply knowledge, and as they interact with the many others that populate this community. Both the opportunities and challenges for learners to learn and for teachers to teach are embedded in these health care facilities. To warrant and improve this breeding ground for future doctors, undergraduate work-based medical education has been debated for many decades.¹⁻³

Current conversations take place in light of the shift from learning-as-acquisition-of-knowledge towards learning-as-participation-in-practice, and draw on socio-cultural theories of learning.^{4,5} This shift has transformed the view on a medical student from a repository of knowledge, skills, attitudes and competencies, to a young adult who is in personal and professional development towards becoming a doctor.⁶⁻⁹

As outlined in the introduction, research on identity development and consideration of longitudinally integrated clerkships (as opposed to traditional sequentially organized clerkships) reflect how this shift is apparent in the landscape of medical education. The conversations about identity development and longitudinal integration relate to each other in the critical examination of the role of supervisory relationships, which are shaped by how students and physicians interact with each other in the context of medical and educational practice.⁹⁻¹²

The studies within this thesis aim to contribute to these conversations by unraveling today's practice of undergraduate work-based medical education from a socio-cultural perspective, and to clarify the affordances of student-doctor interaction during clerkships.

In this chapter, the results and conclusions of the studies presented in the previous chapters are summarized and discussed in light of these aims. We discuss the methodological strengths and limitations of this thesis, after which the chapter ends with suggestions for further research and implications for practice. Participants' quotations are presented in *"italic"*.

Main findings in relation to literature

The doctor-student dyad: a point of departure

Historically, learning to be become a doctor has been strongly embedded in doctor-student dyads. In traditional apprenticeships, the master taught his apprentice 'how to heal'. Today, the instructional quality of clerkships is determined by at least as many factors as there are people and priorities that constitute the work-based learning

environments in the many health care facilities that currently exist. Acknowledging the increasing prominence of primary care settings in medical education and the relative paucity of research into primary care as a learning environment^{13,14}, we studied the components that were central to the quality of undergraduate training in general practice settings in **chapter 2**. We analyzed medical students' evaluation questionnaires to reveal the factors that had the strongest impact on the perceived instructional quality of a general practice clerkship. Both the quality of supervision provided by the general practitioner (GP) and the patient mix (number, diversity, and quality of the patient encounters) directly affected the instructional quality, which is in line with other studies in varying learning settings.¹⁵⁻²⁰ Opportunities and facilities for students to perform clinical activities independently did not affect the perceived instructional quality. This was an unexpected finding, since being able to take independent responsibility and being actively involved in clinical work has shown to affect students' learning in other studies.^{19,21} Particularly when supervision is close enough to provide informative feedback, while allowing sufficient independence to challenge a learner's abilities, learners can be engaged in valuable activities.²² This relationship between supervision and independence was reflected in our findings: the quality of supervision directly influenced the extent to which independent activities were facilitated to students, as well as the quality of the patient mix they encountered.

Hereby, our findings in chapter 2 underline the influence supervising doctors have in the quality of medical students' learning experiences. Clinical supervision is recognized for its vital role in medical education. In a review by Kilminster and Jolly (2000), the quality of the supervisor-learner relationship was regarded as the probably single most important factor for effective supervision.²³ For the context of a general practice clerkship, this can be further illustrated by how students labeled a successful attachment simply a 'good GP', in which a 'good GP' not only embodied the GP as a good teacher and role model but also referred to a positive learning climate.²⁴ Furthermore, O'Sullivan et al. (2000) reported an increase in students' feelings of competence and confidence as a result of a high level of one-to-one supervision and feedback.²⁵ Two studies which used students' learning experiences to identify general concepts of (enhancement of) teaching and learning processes in a general practice setting also underlined the importance of the role of the supervisor and of active and collaborative teaching and learning based on a trusting relationship.^{26,27}

The findings in chapter 2 reveal similarities in the underlying factors that influence the instructiveness of clerkships in different settings. However, due to the significance of the supervisor's role we expected a clerkship characterized by ten week one-to-one supervisory relationships to offer different opportunities for both doctors and students to learn and to teach than clerkships that are characterized by little supervisory continuity. How are such, supposedly valuable, high levels of one-to-one supervision and trusting relationships enacted in different clinical learning environments?

Chapter 3, 4 and 5 follow up on the outcomes of chapter 2 and combine to form a line of research aimed to reveal the affordances that are embedded in the doctor-student dyad in two different learning environments. We have first used the context of a general practice clerkship to clarify how students and doctors learn and teach, when taking a socio-cultural perspective (**chapter 3 and chapter 4**). This setting was characterized by a 10 week one-to-one supervisory relationship. Second, in **chapter 5**, we used the context of a hospital based clerkship, which was, in comparison to the general practice clerkship, characterized by less continuity in supervisory relationships. In this chapter we studied how both students and doctors gave shape to their interaction with each other and its implications for learning and teaching opportunities.

Learning and teaching with supervisory continuity

Chapter 3 and 4 reveal how both students' and doctors' learning and teaching experiences were embedded in the way they interacted with each other, taking into account the physical, social, and cultural structure of the environment.

First, **Chapter 3** presents a conceptual framework in which we explained how students learned during the general practice clerkship (GPC). This conceptual framework was based on seven group interviews with a total of 44 students who were near the end of their 10-week GPC. We used three types of critical participatory activities students had often referred to, to describe their experiences. These activities were: holding independent consultations, having conversations about patient consultations, and observing the general practitioner. We elucidated how "*learning by doing*" could result in "*finally feeling what it is like to be a doctor*" (chapter 3). We introduced the term developmental space to describe the available space students needed to experience personal growth that transcended the acquisition and application of knowledge, skills, and attitudes as required for a specific clerkship or a specific doctor and related to the development of their professional identity. Developmental space denoted the explicit and implicit opportunities for identity development as they were afforded to and created by students. This space is embedded in the interaction between students and their physical, educational, and organizational environment (contextual space), in which social interaction with GPs and resulting emotions such as feeling respected and self-confident (socio-emotional space) played a central role. The nature of the important relationship between students and supervising GPs was partly influenced by local working climate and habits, partly by their connectedness with the supervisor, and was further developed by participation in patient care. Figure 6.1 displays the conceptual framework graphically. It shows how students develop their professional identity as they participate in different activities (represented by hexagons) and interact with the supervising doctor. The interplay between contextual and socio-emotional space determined the available space for their identity development.

Figure 6.1 Graphic display of findings in chapter 3

The findings in this chapter acknowledge and further clarify how participation in workplace activities in their specific socio-cultural context contributes to effective learning.²⁸ They resonate with the factors that were found to encourage participation and learning among interns (novice doctors), such as being able to take responsibility, getting to know and fit in the team, building a relationships with supervisors, and having professional, personal, and educational conversations with more senior members of the team.²⁸ They further align with Sheehan et al.'s model about how these interns experienced increased confidence and development of their professional identity through ongoing participation based on involvement in the tasks of patient care and engagement with the team. Hereby, we have touched upon how learning is shaped through engagement in activities that are constituted by the micro-social processes of the workplace.²⁹

Acknowledging the important role of the supervising GP in this micro-social process, we studied this phenomenon from a different angle in **chapter 4**. We asked seven GPs to record audio diaries in which they described meaningful moments of interaction they had experienced with their students throughout the ten weeks they supervised them. Using discourse analysis, we illuminated how GPs constructed their interaction with medical students as longitudinally evolving relationships. These relationships were constructed through four discursive stages: establishing a point of departure, developing dialogue, enacting good medical practice, and turning towards closure (see Figure 6.2).

Figure 6.2 Graphic display of findings in chapter 3 and 4

Verbal and non-verbal interaction served as a platform through which GPs gradually shaped students' identities and roles in the context of daily practice and the degree in which this process affected GPs personally and professionally as well. They positioned students relative to themselves based on what they found appropriate behaviour (for example when they first met) and in light of how they conceptualized good medical practice. Based on their biographical development and current preferences regarding practical, social and professional activities and values, they defined how students could, should, or did (not) change. Depending on how students developed, GPs' discourse showed discursive turns which signaled the final shape and affordances of their relationship. For example, a student could be positioned by a supervisor as *"a wonderful and easy person to interact with"*, but *"very difficult to supervise"*. The same supervisor's statement that *"it is his learning process, not mine"* and *"I wouldn't want to supervise him if he was a resident"* further signals his withdrawal from the supervisory relationship. In contrast, in another supervisor-student dyad, earlier constructed differences were, in time, reconstructed as areas of mutual interest, which were reflected in how the supervisor started to discursively include the student in clinical decisions she made in daily practice. Hereby, the findings in this chapter reveal how teaching or supervision is embedded in an evolving trajectory of moments of doctor-student interaction (the curved arrows in Figure 6.2). They illustrate how doctors both influenced and depended on students' development herein, as they discursively created the pillars and boundaries for this relationship and the division of roles in their daily medical practice as it developed over time. Supervisory continuity enabled this relationship and its affordances to develop, for the good and for the bad. Comparable maturation of doctor-student relationships was seen in a study by Walters

et al.. GPs' motivation to teach was embedded in how their professional identity developed as their relationship with students matured.³⁰ In these longitudinal integrated placements, this maturation was enacted in, for example, students' development, mentorship, and progressive authentic clinical participation, in which the latter was enabled through doctors' changes in the way they managed the three-way relationship among doctor, patient and student ('the division of roles in their daily medical practice').³⁰ A study among doctors from different specialties who supervised students in longitudinal integrated clerkships revealed that these supervisors experienced a substantial burden, a profound sense of responsibility, and a deeply gratifying reward. Particularly their collegial relationships with students, shared patient care responsibilities, insight into students' development, and a sense of meaningful impact on students' growth, were deeply rewarding and most often exceeded the logistical and time challenges.³¹

In **chapter 3**, we have described how students depended on the support and opportunities their supervising GPs offered them in the context of the activities they participated in. In **chapter 4** it became clear how, even though GPs held power in the supervisory relationships (for example by relying strongly on their own framework of good medical practice), the way they interacted with students was influenced as well by what students afforded them personally and professionally. This affected GPs' engagement in the supervisory relationships and their ability to allow the student to contribute to their practice in a positive and negative sense, respectively. Together, chapters 3 and 4 bring to surface the reciprocity in work-based learning as it takes place in social interaction and underlines how engagement and participation is a two-way process in which both parties have a responsibility to participate.²⁸

Learning and teaching with little supervisory continuity

In **chapter 5** we aimed to make explicit the affordances of this 'two-way process' in a 10-week hospital based clerkship characterized by multiple supervisory relationships that varied from half a day to two weeks. We performed critical discourse analysis on a total of 184 audio diaries from both doctors and students and 7 student debriefing interviews. This analytical approach focused on the availability of specific discursive resources within a culture, and its implications for those who live in it. Hereby, it unveiled how discourses could limit, enable and constrain what could be said and done, by whom, where and when.³²

We found that the way doctors and students posed and answered questions was a recurrent and influential feature in the narratives. This is in line with how questions are known to be powerful means in institutional dialogue³³, and to enact and reflect an institution's social world, goals and values, and the professional and lay identities of key parties.³⁴ In this Question & Answer (Q&A) dynamic, participants constructed their

interaction in the tension field of six discourses: Basic Need, Care and Attention, Power Game, Currency, Distance, and Equality and Reciprocity.

Figure 5.3 demonstrates the relationships between these discourses by zooming in on the Question&Answer dynamic between a doctor (D) and a student (S). The infinite arrow loops represent the ongoing character of the Q&A dynamic between doctors and students. The Q&A dynamic is embedded in layers of power (the circles). The inner circle represents the Basic Need and the Care and Attention discourses. The Basic Need discourse constructed asking questions as a student's learning need. The Care and Attention discourse constructed the Q&A dynamic as means through which doctors could give students attention and care from them. The outer circle in Figure 5.3 addresses a stronger layer of power in the Q&A dynamic: the Power Game discourse. Together with the Currency discourse (represented by the coins), the Power Game discourse influenced the Q&A dynamic by constructing a straightjacket of culturally defined game rules and hereby strongly influenced doctors' interaction with students. This was apparent in how doctors' frameworks of norms, values and related hierarchical positions manifested in the way they decided whether students' answers, for example to the question of what was clerkship learning about, "*sounded adequately*" (chapter 5). The Currency discourse constructed asking questions as a currency for student to demonstrate interest, motivation and enthusiasm. Tensions between the inner and outer circle related to both doctors' and students' utterances employing the Distance discourse on one hand, and the Equality and Reciprocity discourse on the other hand. The distance discourse constructed asking questions as creating distance between doctors and students, often in light of arising conflicts between participants' needs or expectations, and reality. In contrast, the Equality and Reciprocity (E&R) discourse was employed in light of a Q&A dynamic that was stripped of power and hierarchy. It related to doctors "*appreciating a very pleasant conversation*" with students, and to students characterizing conversations as "*smooth*" and "*casual*", in which "*wrong answers*" were accepted (chapter 5).

As these discourses were in play, different layers of power were addressed, which led to different positions and affordances for doctors and students as enacted in, for example, a first acquaintance, during grand rounds, a night on call, or a week on a ward.

Figure 6.3 Graphic display of findings in chapter 5

We synthesized these affordances of social interaction in two conceptual categories: the creation of developmental space and the creation of developmental vacuum. We explained Developmental Space in **chapter 3** as the explicit and implicit opportunities for identity development that are afforded to and created by students, which related to meaningful participation. In **chapter 5**, we adapted this concept by highlighting how the Q&A Dynamic could create momentum and give space for doctors, students, or both, to exchange authentic personal and professional experiences, a sense of activation and moving forward, enacted in, for example, contribution to medical or educational practice. In the following situation, developmental space was created in which a medical student describes being on call with a specialist and a resident: “I’ve... they’ve been asking me questions, they involved me with each patient we saw, saying: “Alright, Tess, what is your treatment plan, what are you going to do with this patient?” (...) She elaborates a little further, saying: “Erm, and that, the fact that you think along as a medical student, the fact that it is all being appreciated... And sometimes it is wrong, my answer was wrong, but then it wasn’t a problem, because then they would simply, very calmly, explain why it was wrong or why it was right.”

Developmental Vacuum denoted the absence of momentum in the Q&A Dynamic. It relates to stagnation, disengagement, inactivation or frustration, and thereby blocks any authentic development or contribution to fruitful medical practice or education. In the following example, developmental vacuum was enacted in how a resident struggled to get into meaningful dialogue with the student she supervised: *“I tried very much to get him to ask questions, so “hey, are there things that happened to you? Are there any questions?” And nothing much came back from his end. So I thought that was difficult, because at a certain moment I think, well, if you don’t have any questions, then well, whatever. Right, so I started asking him questions to see if he knew the answers and it turned out he didn’t know the answers that well, but yeah, I thought it was very difficult to.., eh, yeah..., to have a real conversation with him.”*

The findings in **chapter 5** made explicit how the affordances of doctor-student interaction in a clerkship with little continuity were embedded in mostly unequal relationships. Reflecting and reifying medicine’s rich cultural history, these unequal power relationships surfaced in clinical teachers’ dominant discourses of a clerkship curriculum-in-action as well.³⁵ Whether or not these supervisory relationships flourished and supported students’ identity development depended on how impressions of each other were formed, how differing needs and expectations were met in varying contextual circumstances and activities, and how this resulted in authentic, meaningful dialogue, or not. Our findings hereby reflect the process of ‘sizing up’ as it appeared to lie at the centre of teaching and learning in surgery clerkships.³⁶ Surgeons and students were engaged in a reciprocal dynamic of observing and interpreting each other’s behavior, i.e. sizing up, in light of motivation and commitment to teach or to learn. Parallel to our concept of developmental space, this process of sizing up could result in positive learning experiences through the development of trust and legitimacy, and the positioning of the surgeon as an advocate for the medical student as a peripheral participant, which resonates with the discourse of Equality and Reciprocity.³⁶

Understanding the affordances of social interaction during clerkships

The studies as outlined above aimed to unravel today’s practice of teaching and learning in undergraduate work-based medical education as processes embedded in context-bound social interaction. In this paragraph we synthesize these findings in order to further understanding of the affordances of doctor-student interaction during clerkships. We will do so by explaining how the affordances are embedded and enacted in (the interplay between) identity, power, continuity and context.

Identity

Although the learner's identity may be the one who is transformed the most^{30,37}, important challenges of work-based learning are embedded in how doctors balance their identity (and thus time, motivation, and rewards) in two institutional worlds that do not always fit: those of medical care versus medical education. Thus, both for doctors and students, each moment of interaction afforded a platform on which their personal and professional identity was crystallized in that particular context or activity – and in that particular power structure. Resulting from this, each moment of interaction provided both doctors and students with verbal and non-verbal cues that determined their position (in that particular task, activity, or context), and the possible actions and emotions that ensued from these positions. From these moments of interaction, situations emerged that were characterized by whether or not the doctors and students who were involved experienced momentum that fostered room for meaningful and authentic dialogue, which we found to be a prerequisite for identity development. We conceptualized the presence of momentum as developmental space, and the absence of momentum as developmental vacuum.

Power

Whether or not there is momentum and, thus, room for meaningful and authentic dialogue depended on the particular power structure in which doctors and students interacted with each other. This power structure was embedded in personally and locally defined cultural and hierarchical frameworks. Although doctor-student relationships are and always will be somewhat unequal, whether doctors exerted their power strongly or allowed a more egalitarian relationship characterized by reciprocity, determined the affordances for students to participate meaningfully, to reveal weaknesses, and to develop their identity. This can be illustrated by the difference between *“being on your toes all the time”* versus *“starting to feel that you are not afraid to ask questions”* (chapter 3). In a different manner, doctors depend on students' personal frameworks relating to their conceptualizations of supervisory relationships, clerkship learning in general, and (good) medical practice as well. The way students engaged in dialogue provided doctors with leads for further action. However, from a critical perspective, the way doctors exerted their power impacted the opportunities for students to develop their identity more than vice versa. On a more macro level, the interplay between power and affordances reify the “cultural mores that are transmitted, but not openly acknowledged”³⁸, underlining the discrepancy between the way culturally defined hierarchical frameworks appear to affect learning and teaching, and the way they were not consciously described or acknowledged by doctors, who co-constructed these frameworks.

Continuity

The affordances of doctor-student interaction were further embedded in the length of the supervisory relationships. Continuity provided opportunities for both students and doctors to get to know each other, to reconsider first impressions, to allow their personal frameworks to be stretched, and to practice or enact their identity-in-development. The platform on which doctors' and students' personal and professional identity and related positions and actions are crystallized, is then basically elongated. Hereby time may empower doctors to have students become part of their practice or not, and the degree to which they allow students to bring about change, for example through the development of trust.³⁹ Discontinuity in supervisory relationships made it more difficult for both doctors and students to experience meaningful and authentic dialogue, particularly when they did not experience immediate personal connection. When students have to engage in multiple supervisory relationships in a relatively short time slot, and when doctors have to do the same, it is a challenge to make the most out of learning through social interaction as going beyond the stage of 'establishing a point of departure' may be critically hampered. However, relatively short supervisory relationships could flourish, depending on the context in which they took place. For example, during a week on call, students were usually supervised by one resident. Even though this was only for one week, the nature of the activities enabled both doctors and students to establish a mutually beneficial relationship characterized by collaboration.

Context

The particular context that surrounded doctor-student interaction influenced the ensuing affordances as well. With context, we refer to the physical, social and cultural structure of the environment. For students, for example, the physical availability of a room and computer for their own could make the difference between feeling *"much more at home, at ease, and respected"* and *"being looked at, like, 'what are you doing here?'"* after knocking on the residents' office door when looking for their supervisor (chapter 5). Conversations that took place in a car (when doing home visits or carpooling after a night shift) or in a coffee room, afforded opportunities for more equal and personal dialogue as they were literally stripped of hierarchy and power. In contrast, a general practitioner who takes her student to a hospitalized patient is encouraged by the hospital setting to appreciate the student's identity development in describing her *"radiating care to these people, (...) standing there in a very different manner than she would have, wearing a white coat"* (chapter 4). This also relates to how the socio-professional discourses of general practice and internal medicine each afforded different values and practices. For example, general practitioners' discourse was characterized by addressing relationships from a social and holistic perspective and acknowledged *"the insecurities one has to cope with as a GP"* (chapter 4). In the

internal medicine setting, doctors' discourse was characterized by being busy solving patients' somatic problems and the related daily tasks this involved. Thus, the context in which doctors and students interacted co-constructed the resulting affordances in many ways.

Methodological considerations

The studies that give shape to this thesis reflect a paradigm trajectory, which departed from the main researcher's post-positivist medical roots (chapter 1), developed towards constructivism (chapter 3) and acknowledged the influence of power relations in chapter 4 and 5. One assumption that has influenced this thesis strongly is one that denies the existence of one truth (for example about learning). Multiple truths or realities are constructed by and between people, which includes the role of power within or among these relationships. Parallel to this paradigm trajectory, the four studies form a line of research that revolved around understanding the affordances of social interaction during clerkships. Each study was informed by the outcomes of the previous one(s), which allowed us to formulate research questions and designs that formed a logical and coherent entity. The strengths and limitations of the individual studies have been addressed in the chapters in question. Here, we would like to discuss the following topics: relevance, innovation, and rigour, after which we will shed light on the limitations of this thesis.

Relevance

Nearly twenty years ago, Hekelman and Blasé referred to dialogue between physician teachers and their students and residents as the core of clinical education.⁴⁰ They underlined the value of having "teachers to examine the language they use in clinical teaching, so that they can understand the different impacts that different kinds of language can have on learning", such as inspiring confidence and useful reflection versus evoking fear and preventing learning and teaching. The common sense confidence in knowing how to talk was considered misplaced.⁴⁰ Since then, however, medical students' identity formation still is not a self-evident by-product of students' participation and learning through talk in the context of authentic medical practice.¹² The strength of this thesis lies in how it contributes to this ongoing conversation by bringing to surface processes that influence medical students' identity development, and elements of talk that critically influenced the usefulness of student-doctor dialogue in two different learning environments. Hereby, we contributed to current debates on the role of continuity in supervision^{11,41} in the process of medical students' identity development^{4,9}, by substantive rethinking of the relationships between students, doctors, and their environment.¹¹

Innovation

The innovative character of this thesis lies in how it has addressed relatively unexplored fields through methodologies that add new perspectives to the body of literature in the domain of medical education research. First, this was achieved by departing from socio-cultural theories as a conceptual framework.^{4,42} Second, we responded to the appeal to perform more clarification research.⁴³ Third, we have used audio diaries as a tool to collect data from participants. Audio diaries reveal important personal reflective moments of participants' identity formation and aspects of their in-the-moment sense making.^{9,44} Fourth and finally, we conducted critical discourse analysis to reveal phenomena that often are taken for granted. These characteristics have positively contributed to the authenticity and novelty of our findings.

Rigour

Rigour refers to how quality "is a product of the soundness of the theory, the transparency of the research assumptions and the integrity of the research processes for data gathering and analysis".⁴⁵ This entails, for example, that a researcher should be conscious of the interplay between ontology (what is the nature of physical and social reality), epistemology (what are the origin, nature, and limits of knowledge about reality), methodology (strategic approach to answer the research question), method, and the interpretation of findings.^{46,47} Both the importance and difficulty of such broad understanding of qualitative design and data analysis⁴⁸ are embedded in the complexity of the medical education research domain. Medical education finds itself at the interface of the culture and tradition of evidence based medicine on one hand, and the principles and beliefs of the social sciences on the other hand. This may lead to the use of standardized assessment criteria and checklists in the appraisal of qualitative research, and the resulting concern of qualitative researchers that inappropriate measures will be used to evaluate their work.⁴⁷ Reducing qualitative research to a list of technical procedures, however extensive, is warned to be overly prescriptive and resulting in "the tail wagging the dog"⁴⁸, while at the same time, attempts are made to reconcile these tensions by developing flexible⁴⁹ or methodologically specific⁵⁰ criteria to help researchers to perform excellent qualitative research.

This thesis aimed for meaning-based outcomes, rather than truth-based outcomes. This entails that we tried to understand the conditions under which differing accounts and meaning were produced.⁵⁰ As the main researcher, I have tried to warrant quality in this process, by broadening my understanding of the rationale and assumptions behind qualitative research⁴⁸, for example in interaction with fellow researchers. Parallel to the qualitative studies in this thesis, we regularly discussed theoretical underpinnings and our own work in a Qualitative Research Group.

Considering the rigour of this thesis as a complete whole, and taking into account what we already discussed in the previous sections, the following topics will be reviewed: reflexivity, transparency, credibility & resonance, ethics, and coherence.

Reflexivity: Throughout all research phases we reflected on our subjective values, biases, and inclinations.⁴⁹ This related to, for example, our professional background and interests, any related pre-existing assumptions or expectations we had, and how we responded to the data and the inferences we drew from it.⁴⁵ Each study was conducted by a team composed of a different set of researchers, which enriched the analyses and further prevented us from “finding what we expected to find”.

Transparency: We have demonstrated transparency in the analytical processes and the contribution of theory herein. This is apparent in our methodology sections, and in how our findings often illustrate how we balanced in the aim to let data to speak for itself and employing a socio-cultural and critical discourse lens.

Credibility and Resonance: Our answer to the overarching research question is embedded in the analysis and synthesis of different stakeholders’ voices from different authentic contexts, including thick descriptions of their narratives. We aimed to present our findings in an aesthetic and evocative way, to the extent that this resonated with our research aims.⁴⁹ Furthermore, we embedded our findings in theoretical and empirical research to explore their external validity, with attention for differences in educational context and training level.

Coherence: We feel safe to conclude that this thesis achieves what it purports to be about by using methodologies that fitted the stated research questions. Moreover we have meaningfully interconnected research questions, findings and literature in our synthesis.⁴⁹

Limitations

One limitation of this thesis is that it was impossible within its scope to translate our findings into practice, for example by conducting an interventional study. Moreover, our focus on the doctor-student dyad has excluded important others such as peers, patients, and other co-workers, which might reduce the authenticity and transferability of our findings. In light of ecological validity, readers should also carefully take into account the curricular context of this thesis as described in the introduction chapter. Moreover, we cannot specifically pronounce upon how cultural differences might impact our findings; particular regarding non-Western cultures.⁵¹

A downside of the innovative character of this thesis, for example by performing discourse analysis, is that it is a challenge to present these findings in a way that is useful for those who have to supervise a student or have a meeting on curriculum design tomorrow.

Implications for research

Further research could focus on both the opportunities and challenges of doctor-student interaction in work-based learning environments, particularly to find ways to foster and support meaningful dialogue.

On a micro level, this can be addressed in further examination of day-to-day work-based moments of interactions. For example, we would consider it interesting to involve both students and doctors in a participatory observational study, in which they are actively invited and supported to reflect on the way they interact with each other, how it affects them in their teaching and learning practices, and how they would like to make changes. At this point, it could be useful to extend the focus on the dyadic relationship to a triadic relationship, including the patient. This has been considered beneficial for both teaching doctors and developing students³⁰, for example in how it may “promote a knowledge-generating dialogue between patients and medical students, where educators explicitly (...) provide a resource, supporting student learning, not shaping it”.⁵²

On a meso level, the opportunities and challenges of doctor-student interaction could be studied on curriculum level. It might be valuable to examine what combinations of supervisory continuity, patient continuity, and the different contexts and activities that shape students’ learning environment (see implications for practice) would offer a healthy breeding ground for teaching and learning.

On a macro level, we encourage further research in how cultural and hierarchical practices are maintained and possibly changed in work-based medical education. In light of a focus on the relational aspect of learning, and its ties with debates on continuity and identity development, medical educationalists might endeavour curricular (and therefore cultural!) change. Then, they would “need to understand the intricate and nuanced ways in which historical practices are replicated, subtly changes, and even challenged”.⁹ Curriculum leaders will therefore need to further explore clinical teachers’ (and other stakeholders’) discourses thoroughly, but sensitively.³⁵

Implications for practice

Doctors who supervise students, particularly those who are engaged with students for a mere afternoon, have to be aware of how they critically contribute to the opportunities for students to develop their identity. They can do so by reflecting on the way they talk with (or to) students, and consequently, how they position them and themselves. For example, when they ask or answer questions, they should consider how this dynamic entails more than the transmission of information or a strategy to assess learners’ competencies.⁵³ Staff development activities could offer support for these supervisors. Understanding the basic principles of discourse analysis or rhetoric could be helpful in decreasing the elements in social interaction that interfere with learning.⁴⁰ At the same time, students should be encouraged and supported to engage in dialogue with

doctors, taking into account the local rules while not being afraid to take a lead and present themselves, for example through patient care related conversations. Regular tutorial or mentor meetings should pay explicit attention to students' experiences in their interaction with doctors. Students might benefit from learning how to put the need to show enthusiasm and motivation in a perspective that focuses on dialogue instead of performance. Moreover, learners' crisis moments can then be used as an opportunity to reflect on and develop their professional identity.⁸

Based on our findings, we encourage the organization of continuity in supervision. Due to large numbers of students, financial and organizational difficulties, it might be a challenge to offer such continuity on large scale. Congruent with our findings and supported by a recent review⁴¹ we want to emphasize that the affordances of doctor-student interaction are also embedded in continuity of patient care, activity or location. The mere presence of a well-equipped room for students to see patients can offer physical continuity. When students participate on wards where some supervisory continuity is guaranteed, meaningful dialogue and participation can be supported by creating continuity in patient care as students take up responsibility for a few patients. If then, supervision is taken over by another resident, continuity in patient care might be able to bridge this gap. However, when students' activities are scattered over outpatient clinics, continuity of supervision might provide essential support in these teaching and learning activities.

With respect to our findings relating to power structures and hierarchy, we re-emphasize the importance of doctors' awareness (and training) concerning the impact of their language-in-use, particularly during hierarchical sensitive settings such as grand rounds. Students could be supported by preparing such activities by having peer discussions first, which can create a safe environment in which mistakes are accepted and confidence can be gained.

Conclusion

In this thesis, we aimed to unravel today's practice of undergraduate work-based medical education from a socio-cultural perspective, and clarify the affordances of student-doctor interaction during clerkships.

We have illustrated and theorized how learning and teaching is embedded in social interaction. We have revealed how doctor-student interaction can flourish and positively influence both doctors' and students' in the context of authentic medical and educational practices. Moreover, by making explicit the cultural and hierarchical structures in which supervisory relationships were embedded, we have addressed important challenges in this dyadic relationship as well. We hope that this thesis will empower doctors, students and educationalists to make the most out of clerkships by providing and enacting a healthy breeding ground.

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Summary

The aim of this thesis is to critically reveal the opportunities and challenges of work-based learning and teaching in undergraduate medical education, and the way these affordances are embedded in doctor-student interaction. In light of this aim, we conducted four empirical studies in two different undergraduate work-based learning environments, involving both doctors and students.

Chapter 1

Health care facilities provide authentic contexts in which students learn from their interaction with patients and health care professionals. They learn to form links between theory and practice and develop their professional identity in a complex environment that is similar to the one in which they will work after graduation. Doctors support student learning by facilitating student-patient encounters and providing students with adequate support and feedback. However, the quality of medical students' learning experiences varies substantively.

Concerns have been raised relating to the number and diversity of patients students encounter, the availability and quality of supervision, observation and feedback, students' attitudes and motivation, the attitudes of staff towards students and teaching in general and, related to this, the safety of the learning environment. For doctors, there are some specific challenges in teaching as well. A lack of time, the local (educational) culture, level of educational training, personal and financial rewards, work output, and management of patient safety all play a role in how doctors are able or willing to supervise students.

There are ample reasons for **warranting and improving the quality of work-based undergraduate medical education**. Its relevance is obvious when considering the quality of care for the patients these students will encounter later in their career. However, its relevance is also apparent when considering the new and potentially strong emotional experiences students have – inherent to authentic medical practice – at a critical time of young adult development. They need safe and constructive learning environments, for example to deal with and learn in the role of a novice, the pressure to fit into medical culture, and the physical, intellectual and emotional labour required. Both for students and doctors, high levels of stress can lead to mental illness and professional misconduct.

Taking the above into account, it is not surprising that the landscape of work-based medical education and practice is characterized by many debates. Different theoretical orientations provide underlying frameworks to inform and structure these debates by locating learning in different grounds and highlighting different aspects of the same learning environment. In this chapter, we briefly described the basic tenets of some prevailing theoretical orientations. In particular, we have explained how this thesis is conceptually orientated towards **social-cultural theories; learning and teaching are then embedded in social interaction**, where learners develop their professional

identity as they participate in the complex and dynamic nature of medical (educational) practice.

Two ongoing conversations in the domain of undergraduate work-based learning that resonate with this conceptual orientation and expand current theory and practice are those relating to 'identity development' and to 'longitudinally integrated clinical clerkships'. Both these debates continue to stretch the boundaries of contemporary medical education. They seem to merge, however, in the turn towards (longitudinal) participation and the potential value of teacher-student relationships in both students' and doctors' identity development. Therefore, the aim of this thesis was to reveal the affordances of doctor-student interaction, and the way they are embedded in two work-based learning environments that differ in supervisory continuity.

Chapter 2

Chapter 2 presents a framework consisting of the instructional components that were central to the quality of a general practice clerkship, as perceived by students. This ten week clerkship is characterized by ample continuity in supervision. After completing their general practice attachment, 155 fifth-year medical students filled out an evaluation questionnaire. Such questionnaires are filled out after each clerkship. We analyzed the questionnaires to bring to surface what factors influenced the perceived instructiveness.

Exploratory factor analysis and reliability analysis identified clusters of correlated independent variables. Subsequent regression analysis revealed the relations between the reduced set of independent variables and the dependent variable 'Instructional quality'.

Three components correlated with the perceived instructional quality:

- 1) **Supervision:** the quality of supervision provided by supervising general practitioners.
- 2) **Patient mix:** the number, diversity and quality of patient encounters.
- 3) **Independence:** opportunities and facilities to perform clinical activities independently.

Multiple regression analysis revealed the following:

- a) Both supervision and patient mix affected instructional quality directly, with supervision being most influential.
- b) Independence did not directly affect instructional quality.
- c) Only in urban health care facilities, independence indirectly affected instructional quality via the patient mix.

Compared with hospital based clerkships, similar components appeared to relate to the perceived instructiveness of the general practice clerkship. However, medical students' ability to practice independently did not affect the instructional quality as much as we had expected. This finding, together with supervising general practitioners' key influence on the perceived learning outcome, called for further elaboration. What meaning do students give to these determinants of learning? How do they actually learn? Chapter 3 presents the study that ensued.

Chapter 3

In our second study we focus on how students learn by participating in general practice and the role of the socio-cultural context herein. A total of 44 students who were in week 8 or 9 of the ten-week general practice clerkship participated in 7 group interviews. Students were invited to talk about what they had learned so far, how they learned, and what contributed to or hindered their learning experiences.

Students spoke of learning as revolving around **“doing”**. The actual fruitful effect of “doing” related to how it involved students' personal and professional development. Opportunities for such development were located in the productive tension between being allowed to be a learner and having the freedom to “really be a doctor”. Students' continuing interaction with supervising general practitioners (GPs), patients and co-workers strongly influenced this tension, and the degree to which it afforded students to develop their professional identity constructively.

We introduced the term **developmental space** to denote the explicit and implicit opportunities for identity development that were afforded to and created by students when they participated in clerkship activities. By observing the GP, by holding patient consultations relatively independently, or by having conversation with the GP about patient consultations, such opportunities for identity development could ensue. Opportunities within these activities were embedded in the interplay between the context (material, organization and educational elements) and students' emotional state of mind, which was often mediated by social interaction with their supervisor.

Thus, the contextually defined nature of personal and professional interaction with the GP impacted how students experienced their role, identity, and transition therein. Moreover, it influenced how students came to feel motivated, respected and self-

confident, which were emotional prerequisites for the creation of developmental space and the resulting possibilities for personal growth.

Particularly the duration of the one-to-one relationship in this clerkship allowed for the development of trusting relationships, increased independence in activities, and enabled students to revise first impressions and judgments relating to GPs' behaviour.

As in our first study, supervisors appeared to play an important role in students' learning experiences. They substantially influenced students' developmental space through personal and professional interaction. This conceptualization of learning-through-social interaction prompted questions about the conceptualization of teaching-through-social interaction. When work-based learning takes place in social interaction, how do clinical teachers give shape to their interaction with students?

Chapter 4

In chapter 4 we try to answer the question of how doctors give shape to their interaction with students. We performed discourse analysis on a total of 61 audio diary entries from seven general practitioners (GPs) throughout a ten week general practice clerkship, supported by two interviews with each participant. Discourse analysis illuminates how talk and text construct social practice and how language-in-use enables people to think, say, and act in a certain way. In our analysis, we focused on how doctors discursively constructed their interaction with students. We found that GPs constructed their interaction with students as **trajectories of longitudinally evolving relationships**. These trajectories were characterized by four stages, in which GPs both influenced and depended on students' development by creating the pillars and boundaries for this relationship and the division of roles in their daily medical practice.

First, they established a **point of departure**, drawing on first impressions of students. This point of departure was characterized by how GPs positioned the students relative to themselves. This was based on how the interaction with the student related to what the GPs found appropriate.

Second, their relationship evolved through **dialogue** with the students. Verbal and non-verbal interaction served as a platform on which GPs gradually gave shape to students' identities and roles in the context of daily practice. This also involved the degree in which this process affected the participants as well, for example in revealing weaknesses or in making decisions about patient management.

Third, the interaction with students was shaped by GPs' conceptualizations of **good medical practice**. Based on their biographical development and current preferences regarding practical, social, and professional activities and values, GPs defined for example, how students could, should, or did (not) change.

Fourth, towards the end of the clerkship, GPs **turned towards closure** of the relationship. Their discourse changed, often related to (lack of) changes in their relationships with students. Hereby, they defined the final shape and affordances of

their relationships, and, at times, were pleased about the relationship, or positioned students and/or themselves as being guilty of failure therein.

Although GPs held power, for example by relying strongly on their own framework of good medical practice, their interaction with students was influenced by what students afforded them as well. This affected GPs' engagement and ability to allow the student to contribute to their practice.

Chapters 3 and 4 explain the role of social interaction in learning and teaching experiences in the context of a general practice clerkship. This clerkship is characterized by a 10 week, one-to-one supervisory relationship. However, many clerkships that are hospital based involve less continuity in supervision. Doctors and students often interact with each other over shorter time episodes, involving many doctor-student dyads. Moreover, hospital based clerkships provide organizational and cultural contexts that differ from the context of a primary care setting such as a general practice. For these reasons, we studied the role of social interaction in the context of a socially dynamic and hospital based clerkship as well.

Chapter 5

In chapter 5, we answer the question of how both students and doctors discursively construct the interaction with each other, revealing the affordances of doctor-student interaction in a clerkship with little supervisory continuity. This study took place in a 10 week internal medicine clerkship characterized by multiple supervisory relationships varying from half a day to two weeks. Nine students were instructed to record at least three audio diaries per week in which they described meaningful moments of interaction with the doctors they were allocated to. The doctors they worked with received similar instructions. Ten doctors agreed to participate. The dataset comprised 184 audio diaries (lasting 6 hours and 45 minutes) and seven short student debriefing interviews (7-22 minutes). We analyzed the transcripts using critical discourse analysis, a methodology that illuminates and critiques structures of power in language-in-use. This approach allowed us to study participants' narratives to understand how they discursively shaped the way they could think, speak, and conduct themselves (affordances).

The ways in which doctors and students posed and answered questions were a recurrent and influential feature in the diaries. In this **question-and-answer-dynamic**, doctors and students constructed their interaction in the tension field of **six discourses: Basic Need, Care and Attention, Power Game, Currency, Distance, and Equality and Reciprocity**. These discourses, and the interplay between them, reflected both doctors' and students' expectations regarding how students learned and doctors supervised, the role of socio-emotional support herein, and the cultural and hierarchical frameworks that appeared to define basic rules for interaction. Doctors and students often employed these discourses differently. In a clerkship characterized by many supervisory

relationships, this entailed that both doctors and students had to continuously redefine the outline and affordances of their interaction in essentially unequal relationships. We conceptualized the affordances of doctor-student interaction in two categories: **developmental space** and **developmental vacuum**. These concepts captured whether or not moments of interaction created momentum for doctors and students. Developmental space denotes how momentum is created by the provision of space for the exchange of authentic professional or personal experiences. This exchange could then be followed by a, at times reciprocal, contribution to meaningful medical practice or education. Developmental vacuum denotes the absence of momentum in the question-and-answer-dynamic. It relates to stagnation, disengagement, inactivation or frustration, and thereby blocks any authentic development or contribution to meaningful medical practice or education. To conclude, by purposefully bringing to surface power structures, we have addressed the complexity of learning and teaching as it takes place in day-to-day moments of interaction in a clerkship with little continuity in supervision. Hereby, we shone new light on existing practice, revealing both its opportunities and challenges.

Chapter 6

Chapters 2-5 present the empirical studies that, together, should clarify the affordances of doctor-student interaction during clerkships. Chapter 6 forms the discussion chapter of this thesis, in which we present and discuss our main findings.

The affordances of doctor-student interaction were embedded in the interplay between identity, power, continuity, and context. Both doctors' and students' professional **identity** was shaped by their interaction with each other in varying contexts and activities. Verbal and non-verbal cues determined their position and possible ensuing actions and emotions. Then, situations emerged that were characterized by whether or not both parties experienced momentum that fostered room for meaningful and authentic dialogue, which we found to be a prerequisite for identity development. We conceptualized the presence of momentum as developmental space, and the absence of momentum as developmental vacuum.

The development of students' professional identity is usually more noticeable and central in undergraduate work-based learning, as they negotiate their learning trajectory as a student and a future doctor. However, when doctors interact with students, they have to balance their identity in two institutional worlds that do not automatically fit: the world of medical care versus the world of medical education.

The exertion of **power** by doctors in their relationship with students strongly determined how students were able to participate meaningfully, to reveal their weaknesses, to develop their identity, or how students were distracted by trying to cope with a hierarchical structure. The way students engaged in dialogue provided

doctors with leads for further action as well, but the ways doctors exerted their power impacted the opportunities for students to develop their identity more than vice versa. On a macro level, such unequal doctor-student interaction reifies culturally defined social and professional identities and, hereby, continues to affect both learning and teaching practices.

Continuity in supervision provided opportunities for doctors and students to get to know each other, to reconsider first impressions and allow personal (and at times hierarchical) backgrounds to be stretched, and to enact identities-in-development. Time empowered doctors to have students become part of their practice, or not, and the degree to which they allowed students to bring about change, for example through the development of trust. In case of little continuity, it can be a challenge to make the most out of learning and teaching through social interaction as it becomes difficult to go beyond the stage of ‘establishing a point of departure’ (see chapter 4).

The role of continuity depended on the particular physical, social, and cultural **context** as well. For example, during a week on call, students were usually supervised by one resident. Even though this was only for one week, the nature of the activities enabled both doctors and students to establish a mutually beneficial relationship characterized by collaboration. The role of context was also apparent in how the socio-professional discourses of general practice and internal medicine each afforded different values and practices. General practitioners’ discourse was characterized by addressing relationships from social and holistic perspectives and acknowledged insecurities, while in internal medicine, doctors’ discourse was characterized by being busy solving patients’ somatic problems and the related daily tasks this involved.

Taking into account these findings, what are the implications for research and practice? The implications for practice are embedded in creating awareness among doctors and students and offering adequate support. **Doctors should become aware of how they critically contribute to the opportunities for students to develop their identity.** They can do so by reflecting on the way they talk with (or to) students, and consequently, how they position them *and* themselves, for example when they ask or answer questions. Staff development activities could offer support for these supervisors.

Regular tutorial or mentor meetings should pay **explicit attention to students’ experiences in their interaction with doctors.** Students might benefit from, for example, learning how to put the need to show enthusiasm and motivation in a perspective that focuses on dialogue instead of performance.

In line with these recommendations, further research could focus on **finding ways to foster and support meaningful dialogue between doctors and students.** It would be interesting to involve both students and doctors in a participatory observational study, in which they are actively invited and supported to reflect on the way they interact with each other, how it affects them in their teaching and learning practices, and how they would like to make changes. At this point, it could also be useful to extend the focus on the dyadic relationship to a triadic relationship, including the patient.

On curriculum level, it might be valuable to examine **what combinations of supervisory continuity, patient continuity, and different contexts and activities would offer a healthy breeding ground** for teaching and learning. Based on our findings, we encourage the organization of continuity in supervision, particularly when students' activities are scattered, for example when they participate in outpatient clinics. However, the mere presence of a well-equipped room for students to see patients can offer useful physical continuity as well. When students participate on wards where some supervisory continuity is guaranteed, meaningful dialogue and participation can be supported by creating continuity in patient care.

On a more macro level, we encourage further research in how **cultural and hierarchical practices** are preserved, maintained, and possibly changed in work-based medical education. In light of a focus on the relational aspect of learning, and its ties with debates on continuity and identity development, medical educationalists might endeavour curricular change. To successfully implement any cultural changes, clinical teachers' (and other stakeholders') discourses need to be further explored.

Samenvatting

Identiteit, Interactie en Macht

Een uitleg van de mogelijkheden van arts-student interactie tijdens coschappen

Het doel van dit proefschrift is om zowel de mogelijkheden als de uitdagingen van het leren op de werkplek in de opleiding tot basisarts - de coschappen - op een kritische manier bloot te leggen. Hiertoe hebben we de manier waarop leren mogelijk wordt gemaakt in de interactie tussen arts, student en hun omgeving, bestudeerd. Vier studies zijn verricht in de context van twee verschillende coschappen, waarbij we zowel artsen als studenten hebben betrokken.

Hoofdstuk 1

In het eerste hoofdstuk introduceren we het thema van dit proefschrift. We leggen vervolgens aan de hand van literatuur uit waarom het relevant is om de kwaliteit van het werkplekleren tijdens de coschappen te bewaken. We introduceren sociaal-culturele leertheorie als een richtinggevend kader in dit proefschrift. Tot slot beschrijven we twee actuele discussies in het domein van medisch werkplekleren, waar we door middel van dit proefschrift aan trachten bij te dragen.

Gezondheidszorginstellingen vormen voor studenten een authentieke omgeving waarin zij kunnen leren door de interactie aan te gaan met patiënten, artsen en andere professionals. Studenten leren op deze manier theorie aan praktijk te verbinden. Ook biedt deze interactie gelegenheden om een professionele identiteit te ontwikkelen in een complexe omgeving die vergelijkbaar is met die waarin studenten zullen gaan werken na het afronden van hun opleiding. Het huidige cohort artsen ondersteunt dit leerproces door student-patiënt contacten te faciliteren en studenten van ondersteuning en feedback te voorzien.

De leerervaringen van geneeskundestudenten tijdens hun coschappen blijken echter van zeer wisselende kwaliteit te zijn. Punten van aandacht hierbij zijn het aantal en de diversiteit van de patiënten die door studenten gezien worden, de kwaliteit van begeleiding, observatie en feedback én de houding en motivatie van studenten zelf. Ook de houding van artsen ten opzichte van het begeleiden en doceren van studenten beïnvloedt de mate waarin artsen zorgen voor een veilige leeromgeving.

Verschillende factoren beïnvloeden de mate waarin artsen bereid en bekwaam zijn (of zich zo voelen) om studenten te begeleiden. Zo kunnen de plaatselijke (onderwijs) cultuur, de mate van onderwijskundige training, persoonlijke en financiële beloningen en een tekort aan tijd in de context van zowel productie als patiëntveiligheid kansen of belemmeringen vormen voor artsen in het uitvoeren van hun onderwijsrol.

Het **waarborgen en verbeteren van de kwaliteit van het werkplekleren** tijdens de coschappen is van belang voor de kwaliteit van zorg voor de patiënten die later behandeld gaan worden door de huidige studenten. Daarnaast is het belangrijk te onderkennen dat coschappen nieuwe en mogelijke sterke emotionele ervaringen zijn voor studenten, juist in een periode waarin zij zich tot jongvolwassenen ontwikkelen. Zij hebben een veilige en constructieve leeromgeving nodig om te kunnen leren vanuit hun positie als beginnening, terwijl ze zich aanpassen aan de medische cultuur en de lichamelijke, intellectuele en emotionele inspanningen die hiermee gepaard gaan.

Dit in ogenschouw nemend is het niet verrassend dat er veel discussies plaatsvinden over de kwaliteit van het medisch onderwijs in het algemeen en het werkplekleren in het bijzonder. Verschillende leertheorieën vormen kaders waarbinnen deze discussies plaatsvinden. Leertheorieën conceptualiseren de aard van het leren op verschillende manieren en belichten derhalve verschillende aspecten van de leeromgeving die hierbij een rol spelen. In hoofdstuk 1 beschrijven we kort de uitgangspunten van een aantal veel voorkomende theorieën. Vervolgens lichten we toe hoe dit proefschrift gevormd is door uit te gaan van concepten horende bij **sociaal-culturele leertheorieën**. Deze theorieën gaan ervan uit dat het **leren én doceren (begeleiden) van studenten ingebed is in sociale interactie**; studenten ontwikkelen hun professionele identiteit terwijl ze participeren in de complexe en dynamische medische praktijk. De manier waarop studenten en artsen met elkaar omgaan vormt dan een belangrijk uitgangspunt voor het leer- en begeleidingsproces.

We belichten twee thema's die in de huidige literatuur over het leren tijdens de coschappen worden bediscussieerd: identiteitsontwikkeling en longitudinaal georiënteerde coschappen. Deze thema's passen bij de theoretische uitgangspunten van sociaal-culturele leertheorieën en rekken de grenzen van de theorie en praktijk van het huidige medisch onderwijs op. Ze vertonen overlap in hun focus op langdurige participatie en de bijbehorende waarde van arts-student relaties. Het doel van dit proefschrift sluit aan bij deze thema's. We wilden de mogelijkheden van arts-student interactie tijdens de coschappen aan het licht brengen en verhelderen op welke wijze deze mogelijkheden ingebed zijn in twee leeromgevingen die verschillen in continuïteit van begeleiding.

Hoofdstuk 2

In hoofdstuk 2 onderzoeken we de factoren die het meest van invloed zijn op de ervaren leerzaamheid van studenten tijdens het coschap huisartsgeneeskunde. Dit coschap wordt gekenmerkt door sterke continuïteit in begeleiding. Na afronding van dit coschap hebben 155 vijfdejaars geneeskundestudenten een vragenlijst ingevuld over hun leerervaringen. Een dergelijke vragenlijst wordt standaard afgenomen na afloop van ieder coschap. We hebben de ingevulde lijsten geanalyseerd om te achterhalen welke factoren de ervaren leerzaamheid het meest beïnvloedden. Met behulp van

exploratieve factoranalyse en betrouwbaarheidsanalyse werden groepen van samenhangende onafhankelijke variabelen geïdentificeerd. De relaties tussen de afhankelijke variabele leerzaamheid en de gereduceerde verzameling van onafhankelijke variabelen werd door middel van regressie analyse bepaald.

De volgende drie elementen hingen samen met de ervaren leerzaamheid:

- 1) **Begeleiding:** de ervaren kwaliteit van de begeleiding door de huisarts.
- 2) **Patiëntencontacten:** het aantal, de diversiteit en kwaliteit van patiëntencontacten.
- 3) **Zelfstandigheid:** de ervaren mogelijkheden en faciliteiten om zelfstandig te werken.

Regressieanalyse leverde op dat:

- a) Zowel de kwaliteit van begeleiding als de patiëntencontacten een directe invloed hadden op de ervaren leerzaamheid, waarbij de kwaliteit van de begeleiding het meeste invloed had.
- b) De mate van zelfstandigheid geen directe invloed had op de ervaren leerzaamheid.
- c) Alleen in huisartspraktijken in stedelijke gebieden had zelfstandigheid indirect (via patiëntcontacten) invloed op de leerzaamheid.

Vergeleken met coschappen in het ziekenhuis bleken dezelfde factoren de ervaren leerzaamheid van het coschap huisartsgeneeskunde te beïnvloeden. Het was echter opvallend dat de mate waarin studenten relatief zelfstandig konden werken hun leerzaamheid niet zo sterk beïnvloedde als we hadden verwacht. Deze bevinding, evenals de bevinding dat de kwaliteit van de begeleiding door de huisarts wel sterke invloed had op de ervaren leerzaamheid, waren reden voor verder onderzoek. Welke betekenis geven studenten eigenlijk aan deze factoren? En *hoe* leren ze? Hoofdstuk 3 presenteert het onderzoek dat op deze vragen volgde.

Hoofdstuk 3

De tweede studie richt zich op de manier waarop studenten leren door te participeren in de context van een huisartsenpraktijk. In totaal namen 44 studenten deel aan 7 groepsinterviews die plaatsvonden aan het einde van een tien weken durend coschap huisartsgeneeskunde. Studenten werden uitgenodigd om te praten over wat ze hadden geleerd, hoe ze dat hadden geleerd en wat voor zaken deze leerervaringen positief en/of negatief beïnvloedden. De uitgeschreven verhalen van de studenten analyseerden we vervolgens met sociaal-culturele leertheorieën als theoretisch kader. De studenten spraken over leren als iets dat draaide om het “**doen**”, zoals het zien van patiënten. Het betekenisvolle (leerzame) effect van het “doen” werd bepaald door de manier waarop de persoonlijke en professionele ontwikkeling van de studenten hierbij betrokken werd. De mogelijkheden voor een dergelijke ontwikkeling lagen in het spanningsveld tussen het geaccepteerd worden als beginner en lerende enerzijds en

het krijgen van vrijheid om “echt een dokter te zijn” anderzijds. De voortdurende interactie tussen de studenten en de huisartsen die hen begeleidden (alsook andere medewerkers en de patiënten) hadden een grote invloed op dit spanningsveld. Ook speelden fysieke, organisatorische en onderwijskundige factoren hierbij een rol, zoals het hebben van een eigen kamer, het aantal coschappen dat de student al had doorlopen en de manier waarop de praktijk was afgestemd op de aanwezigheid van de student. De interactie tussen student, huisarts en hun context bepaalde of er ruimte was voor de coassistenten om zich verder te ontwikkelen als jonge dokter, óf dat ze op een nadelige manier afgeleid werden door bijvoorbeeld hun rol en positie als “co”. Deze interactie bepaalde in welke mate studenten zich gemotiveerd, gerespecteerd en zelfverzekerd voelden, hetgeen emotionele voorwaarden waren voor het ontstaan van ruimte voor persoonlijke groei.

De term **ontwikkelingsruimte** verwijst naar deze mogelijkheden voor persoonlijke groei en identiteitsontwikkeling, zoals deze konden worden gecreëerd vóór en dóór studenten wanneer zij participeerden in de huisartspraktijk. In de dagelijkse praktijk konden deze mogelijkheden bijvoorbeeld voortkomen uit momenten waarop studenten de huisartsen observeerden, wanneer ze relatief zelfstandig patiënten zagen of wanneer ze gesprekken voerden met de huisartsen die gerelateerd waren aan patiëntencontacten. Elk moment van sociale interactie dat gekoppeld was aan deze activiteiten, beïnvloedde de door de studenten ervaren ontwikkelingsruimte.

Met name de duur van de één-op-één relatie in dit coschap maakte het de studenten mogelijk om een eerste indruk van de begeleidende arts en eventuele (voor)oordelen te herzien, een vertrouwensband te ontwikkelen en in toenemende mate zelfstandig te functioneren. Dit bleken belangrijke processen te zijn rondom het ontstaan van ontwikkelingsruimte.

Net als in onze eerste studie speelden de artsen die de studenten begeleidden een belangrijke rol in de leerervaringen van de studenten. Zij beïnvloedden in sterke mate de ontwikkelingsruimte van studenten door de manier waarop zij (op persoonlijk en professioneel vlak) omgingen met de studenten. Deze conceptualisering van leren-door-sociale interactie in hoofdstuk 3 deed vragen rijzen over de conceptualisering van begeleiden-door-sociale interactie. Wanneer werkplekleren plaatsvindt in sociale interactie, hoe geven de begeleidende artsen dan vorm aan hun interactie met studenten?

Hoofdstuk 4

In hoofdstuk 4 hebben we bovenstaande vraag onderzocht. We hebben discoursanalyse uitgevoerd op 61 dagboekopnames die door zeven huisartsen gedurende een tien weken durend coschap waren gemaakt met behulp van een dictafoon. We hebben deze bevindingen geplaatst in de context van telkens twee interviews met de deelnemende huisartsen (halverwege en na afloop van het coschap).

Discoursanalyse is een kwalitatieve methodologie waarbij aan de hand van door betrokkenen gehanteerde taal en tekst geanalyseerd kan worden hoe zij vorm geven aan sociale praktijken (bijvoorbeeld bepaalde omgangsvormen) gedurende coschappen. Met deze methode kun je bijvoorbeeld laten zien hoe gesproken taal de manier waarop mensen zich kunnen gedragen zowel beïnvloedt als weergeeft.

In dit onderzoek hebben we bestudeerd hoe huisartsen hun interactie met studenten discursief vormgaven; welke sociale praktijken waren zichtbaar in de dagboekfragmenten waarin zij spraken over hun interactie met hun student? Uit de analyse bleek dat de huisartsen hun interactie met de studenten construeerden als een **traject waarlangs in de loop der tijd een relatie ontplooid**. Binnen dit traject beïnvloedden huisartsen de mogelijke ontwikkeling van de student sterk. Zij bepaalden de bouwstenen en grenzen van de relatie, de rolverdeling in de dagelijkse praktijk en hoe de student zich volgens hen zou moeten ontwikkelen. Echter, ze waren hierbij juist ook sterk afhankelijk van hoe de studenten zich daadwerkelijk gedroegen en ontwikkelden, alsmede de mate waarin dit binnen of buiten het verwachte of gewenste traject verliep.

In dit traject waren vier stadia te onderscheiden. Deze stadia werden in grove lijnen in de loop van de tien weken doorlopen. Allereerst creëerden huisartsen een **vertrekpunt** op basis van hun eerste indruk van de studenten. Deze indruk werd gemaakt aan de hand van het eerste contactmoment, zoals bijvoorbeeld een telefoongesprek of een persoonlijk kennismakingsgesprek. Hierbij positioneerden huisartsen de studenten op een bepaalde afstand ten opzichte van zichzelf. Deze afstand was gebaseerd op de mate waarin de daadwerkelijke interactie aansloot bij datgene wat de huisartsen zelf passend vonden.

Vervolgens ontwikkelden zij hun relatie met de student door te zoeken naar **dialog**. Wanneer arts en student verder de interactie met elkaar aangingen rondom het spreekuur, fungeerde dialoog (in de zin van zowel verbale en non-verbale communicatie) als een podium waarop huisartsen vorm konden geven aan de identiteit en de rol van de student. Hierbij werd ook de manier waarop de interactie met de student de huisartsen zelf beïnvloedde betrokken. Dit was bijvoorbeeld zichtbaar in hoe zij zich zelf kwetsbaar op gingen stellen ten opzichte van de studenten of in hoe zij de studenten betrokken bij het maken van beslissingen ten aanzien van het behandelplan van een patiënt.

Ten derde, en vaak parallel aan de andere drie stadia, speelden de ideeën die huisartsen hadden over wat '**goed medisch handelen**' was een belangrijke rol in hoe zij de interactie met de studenten aangingen. De artsen bakenden hiermee af hoe, in hun ogen, studenten zouden kunnen of zelfs zouden moeten veranderen en of dit al dan niet gebeurde. Het kader van 'goed medisch handelen' was gebaseerd op hun eigen biografische ontwikkelingen en huidige voorkeuren betreffende praktisch, sociaal en professioneel handelen.

Als laatste richtten de huisartsen zich tegen het einde van het coschap op het **afsluiten van de relatie** met de student. Hun discours (manier van spreken) veranderde, hetgeen gerelateerd was aan veranderingen binnen hun relatie met de student óf juist een gebrek hieraan. Zij schetsten de uiteindelijke vorm en mogelijkheden van de relatie, hetgeen soms betekende dat ze erg tevreden waren hierover, maar soms ook dat ze zichzelf en/of de student schuldig bevonden aan het falen ervan.

Alhoewel de huisartsen in principe de meeste macht hadden over de ontwikkeling van de relatie, bijvoorbeeld door sterk te leunen op hun eigen raamwerk van goed medisch handelen, waren ze ook afhankelijk van wat de studenten hén hierin aanboden. Dit tezamen bepaalde de betrokkenheid van de huisartsen en de manier waarop ze in staat waren om de studenten bij te laten dragen aan de dagelijkse praktijk.

In hoofdstuk 3 en hoofdstuk 4 hebben we de rol van sociale interactie bij het leren en begeleiden van studenten in de context van een coschap huisartsgeneeskunde toegelicht. Dit coschap wordt gekenmerkt door 10 weken één-op-één begeleiding. Bij coschappen die plaatsvinden in een ziekenhuis is er echter vaak sprake van minder continuïteit in de begeleiding van coassistenten. Artsen en studenten interacteren dan gedurende kortere periodes met elkaar, waarbij arts-student koppels frequent wisselen. Daarnaast biedt een coschap in een ziekenhuis een andere organisatorische en culturele omgeving dan die in een eerstelijns instelling zoals een huisartspraktijk. Daarom hebben we de rol van sociale interactie ook bestudeerd in de context van een sociaal dynamisch coschap in een ziekenhuis.

Hoofdstuk 5

In hoofdstuk 5 beantwoorden we de vraag hoe studenten en artsen discursief – dus door middel van hun manier van spreken – de interactie met elkaar vormgeven. Deze studie vond plaats binnen een coschap interne geneeskunde dat tien weken duurde en waarbij begeleidingsrelaties varieerden van een halve dag tot twee weken. Hiermee belichten we de mogelijkheden en uitdagingen van arts-student interactie binnen een coschap met minder continuïteit in begeleiding dan in het eerder bestudeerde coschap huisartsgeneeskunde.

Negen studenten werden geïnstrueerd om gedurende deze tien weken tenminste drie dagboekopnames per week te maken met behulp van een dictafoon, waarbij ze betekenisvolle momenten van interactie beschreven met de artsen aan wie ze op dat moment gekoppeld waren. De artsen met wie deze studenten samenwerkten ontvingen vergelijkbare instructies. Tien van hen besloten mee te doen aan het onderzoek.

De dataset bestond uit 184 opnames van zowel artsen als studenten en zeven korte interviews met studenten na afloop van het coschap. Alle opnames werden uitgeschreven en geanalyseerd door kritisch te kijken naar de wijze waarop taal gebruikt werd en hoe deze taal bijdroeg aan de interactie tussen studenten en hun

begeleiders. Deze methodologie wordt ‘*critical discourse analysis*’ genoemd. Deze vorm van kwalitatieve analyse maakte het bijvoorbeeld mogelijk te onderzoeken wat de invloed was van machtsstructuren op de manier waarop de betrokkenen konden denken, spreken en zich konden gedragen.

Een terugkerend thema in de dagboekopnames was de manier waarop artsen en studenten spraken over het stellen van vragen en het geven van antwoorden. Binnen deze **vraag-en-antwoord-dynamiek** werd de interactie tussen artsen en studenten vormgegeven in het spanningsveld tussen zes verschillende discourses (d.w.z. manieren van spreken). Het stellen van vragen en het geven van antwoorden werd geconstrueerd als: **Basisbehoefte, Zorg&Aandacht, Machtsspel, Betaalmiddel, Afstand en Gelijkwaardigheid&Wederkerigheid**. Deze discourses reflecteerden verwachtingen over hoe studenten leren, hoe artsen begeleiden en de rol van sociaal-emotionele steun hierbij. Daarbij vormden de discourses culturele en hiërarchische kaders die de basisregels voor de interactie tussen arts en student bepaalden. Artsen en studenten hanteerden de discourses veelal op een verschillende manier. Dit betekent dat, in de praktijk van alledag, ze beiden herhaaldelijk de uitgangspunten en de mogelijkheden van hun specifieke interactie moesten “uitvinden”. In de verhalen van zowel artsen als studenten werden studenten veelal gepositioneerd als ondergeschikten, waardoor deze interacties bovendien gekenmerkt werden door een bepaalde mate van ongelijkwaardigheid.

De mogelijkheden die deze arts-student interacties opleverden hebben we geduid in twee concepten: **ontwikkelingsruimte** en **ontwikkelingsvacuüm**. Deze concepten beschrijven hoe momenten van interactie al dan niet momentum creëerden voor artsen en/of studenten om hun relatie te ontwikkelen. Ontwikkelingsruimte duidt aan hoe momentum wordt gecreëerd door de uitwisseling van authentieke professionele of persoonlijke ervaringen. Deze uitwisseling kan dan gevolgd worden door een bijdrage aan betekenisvol medisch handelen of onderwijs. Ontwikkelingsvacuüm duidt op de afwezigheid van momentum in de interactie tussen arts en student, hetgeen gerelateerd is aan gevoelens van inactivatie, frustratie, stagnatie en verminderde betrokkenheid in de arts-student relatie. Hierdoor wordt authentieke persoonlijke ontwikkeling of een betekenisvolle bijdrage aan medisch handelen of onderwijs geblokkeerd.

In deze studie hebben we de complexiteit van het werkplekleren en –begeleiden in kaart gebracht zoals dit plaatsvindt in dagelijkse momenten van interactie tijdens een coschap met weinig continuïteit in begeleiding. Hierdoor hebben we nieuw licht doen schijnen op een bekend fenomeen (het stellen en beantwoorden van vragen), waarbij we zowel de daaraan gerelateerde mogelijkheden als uitdagingen hebben blootgelegd.

Hoofdstuk 6

In hoofdstuk 2 tot en met 5 hebben we de empirische studies gepresenteerd die gezamenlijk de mogelijkheden van arts-student interactie tijdens coschappen toelichten. Hoofdstuk 6 presenteert een overkoepelende discussie van de belangrijkste bevindingen uit deze studies.

De mogelijkheden en uitdagingen van arts-student interactie waren ingebed in de wisselwerking tussen identiteit, macht, continuïteit en context. De professionele **identiteit** van zowel artsen als studenten werd gevormd in interactie met elkaar en in de context van verschillende activiteiten. Verbale en non-verbale signalen bepaalden hun positie en de hieraan gerelateerde mogelijke acties en emoties. Hierdoor ontstonden situaties waarin beide partijen al dan niet momentum ervoeren voor het ontstaan van betekenisvolle en authentieke dialogen. Dit soort dialogen bleken een voorwaarde te zijn voor constructieve identiteitsontwikkeling. De aanwezigheid van momentum hebben we geduid als ontwikkelingsruimte. De afwezigheid van momentum hebben we geduid als ontwikkelingsvacuüm.

De ontwikkeling van de professionele identiteit van de student staat vaak het meest centraal tijdens de coschappen. Ook voor artsen gold echter dat, wanneer zij studenten begeleidden, zij hun identiteit moesten balanceren in twee werelden die niet altijd naadloos aansloten: de wereld van de medische zorg en de wereld van het medisch onderwijs.

Deze tweedeling positioneerde artsen in een positie van zowel **macht** als onmacht, hetgeen een belangrijke rol speelde in hun interactie met studenten. Vanuit hun machtspositie ten opzichte van studenten beïnvloedden ze de mate waarin studenten betekenisvol konden participeren, hun eventuele tekortkomingen durfden te laten zien en zich konden ontwikkelen, óf juist de mate waarin studenten afgeleid werden doordat zij om probeerden te gaan met een hiërarchische omgeving. De manier waarop studenten dialoog aangingen met artsen bepaalde ook welke aanknopingspunten er voor deze begeleiders waren om de arts-student relatie verder te ontwikkelen. Echter, de manier waarop artsen hun macht uitoefenden beïnvloedde de mogelijkheden voor de identiteitsontwikkeling van studenten in grotere mate dan vice versa. Deze ongelijkwaardigheid in arts-student interacties bevestigt en belichaamt de cultureel bepaalde sociale en professionele identiteiten van alle spelers in deze leersetting. Hierdoor blijven gewoontes rondom het leren en het begeleiden van coassistenten bestaan.

Continuïteit in begeleiding gaf artsen en studenten de mogelijkheid om elkaar te leren kennen, een eerste indruk te heroverwegen door persoonlijke of hiërarchische achtergronden te relativeren en om identiteiten-in-ontwikkeling “uit te proberen”. Tijd gaf artsen de ruimte om studenten onderdeel te laten worden van hun praktijk. Dit beïnvloedde de mate waarin zij studenten bij lieten dragen aan hun manier van handelen, bijvoorbeeld vanuit het ontstaan van wederzijds vertrouwen. In het geval van weinig continuïteit kan het een uitdaging zijn om het meeste uit het leren en het

begeleiden te halen, zoals dit ingebed is in sociale interactie. Het kan dan moeilijk worden om de mogelijkheden die gevormd worden vanuit eigen wensen en verwachtingen en vanuit de eerste indruk van de ander, te overstijgen.

De rol van continuïteit was ook afhankelijk van de specifieke fysieke, sociale en culturele **context**. Studenten werden bijvoorbeeld tijdens hun dienstweek op de spoedeisende hulp veelal begeleid door één arts-assistent. Ondanks het feit dat deze begeleidingsrelatie niet langer duurde dan een week, zorgde de aard van de activiteiten er voor dat zowel artsen als studenten een wederkerige relatie konden ontwikkelen die gekenmerkt werd door samenwerking. De rol van context werd verder ook duidelijk in hoe de sociaal-professionele discoursen van respectievelijk de huisartsgeneeskunde en de interne geneeskunde elk weer andere waarden en gebruiken voortbrachten. Het discours van huisartsen werd bijvoorbeeld gekenmerkt door het aangaan van relaties vanuit sociale en holistische perspectieven, waarbij onzekerheden werden erkend en juist onderdeel waren van de praktijk. Het discours van artsen binnen de interne geneeskunde werd gekenmerkt door het druk te hebben met het oplossen van somatische problemen en de dagelijkse activiteiten en taken die hier bij hoorden.

Wat zijn in het licht van deze bevindingen de implicaties voor de praktijk en verder onderzoek? Voor de dagelijkse praktijk is het belangrijk dat zowel studenten als artsen bewust worden gemaakt van de hierboven besproken processen en er steun wordt gecreëerd om hier op een zo constructief mogelijke manier mee om te gaan. **Artsen zouden zich bewust moeten worden van de krachtige manier waarop zij bijdragen aan de mogelijkheden voor de identiteitsontwikkeling van studenten.** Dit kunnen ze doen door kritisch te reflecteren op de manier waarop zij met (of tegen) studenten spreken en hoe zij zodoende de student én zichzelf positioneren. Hierbij kunnen artsen zich richten op het veel voorkomende fenomeen van vragen stellen en beantwoorden. Training op deze manier van reflecteren zou hen hierbij kunnen ondersteunen.

Voor studenten is het belangrijk dat er tijdens de coschappen expliciet aandacht wordt geschonken aan hun ervaringen gerelateerd aan momenten van interactie met arts-begeleiders. Studenten zouden er bijvoorbeeld profijt van kunnen hebben wanneer zij zouden leren hoe zij de bekende druk om enthousiast en gemotiveerd over te komen in een perspectief kunnen plaatsen waarbij zij focussen op het creëren van dialoog in plaats van het bewijzen van bepaalde motivaties of prestaties. Dit zou kunnen plaatsvinden wanneer studenten gedurende of rondom coschappen contacten hebben op de faculteit (bijvoorbeeld tijdens de zogenaamde terugkomdagen).

Parallel aan deze aanbevelingen zou verder onderzoek zich kunnen richten op het vinden van **manieren waarop betekenisvolle dialogen tussen artsen en studenten kunnen worden gestimuleerd en ondersteund.** Het zou interessant zijn om zowel studenten als artsen in een onderzoek te betrekken waarbij ze actief worden uitgenodigd en ondersteund om te reflecteren op de manier waarop ze met elkaar interacteren, hoe dit henzelf en elkaar beïnvloedt in hun leer- en begeleidings-ervaringen en hoe ze dit graag zouden willen veranderen.

Op curriculumniveau zou het waardevol zijn om te onderzoeken **welke combinatie van continuïteit in begeleiding, continuïteit in patiëntencontacten én verschillende contexten en activiteiten een gezonde voedingsbodem zou opleveren** voor zowel de studenten als de artsen die hen begeleiden. Op basis van onze bevindingen doen we de aanbeveling om continuïteit in begeleiding te waarborgen. Dit is vooral van belang wanneer de activiteiten van studenten erg verspreid zijn en er bijvoorbeeld weinig sprake is van continuïteit in patiëntencontacten, zoals gedurende stages in de polikliniek. Ook de aanwezigheid van een goed geoutilleerde kamer voor studenten om patiënten te zien kan een fysieke vorm van continuïteit bieden. Wanneer enige vorm van continuïteit in begeleiding gegarandeerd is kan continuïteit in patiëntenzorg verder bijdragen aan het creëren van betekenisvolle dialogen en activiteiten.

We moedigen verder onderzoek aan naar de manier waarop **culturele en hiërarchische praktijken** worden behouden of juist veranderd in de context van het werkplekgebonden medisch onderwijs. Dit is met name interessant in het kader van de omslag naar longitudinaal georganiseerde coschappen en de hieraan gekoppelde veranderingen in de rol van de arts-begeleiders. Om eventuele culturele veranderingen succesvol in gang te zetten, zullen de discourses van arts-begeleiders en andere betrokkenen verder onderzocht moeten worden.

Dankwoord

Een jaar of twaalf geleden had ik als eerstejaars geneeskundestudente een mentorgesprek met Mascha. Nadat ik net besloten had om het “leren presenteren” tot leerdoel te maken verscheen een donkere bos krullen in de deuropening. Of ik geneeskundestudent was? Jazeker. Of ik mijn portfolio digitaal maakte? Jazeker. Of ik hierover wilde vertellen tijdens zijn presentatie? Euhm... ja... dat leek me dan wel een logische stap na het maken van dat leerdoel. Zonder het te weten had Erik me op dat moment geïntroduceerd in de wereld van het medisch onderwijs, de vakgroep O&O, en later dus de wereld van het promoveren. Bedankt!

Toen dit laatste eenmaal zover was en ik aan mijn promotietraject begon, hebben Albert, Cees en Paul me op enthousiaste wijze wegwijs gemaakt in deze wereld terwijl ik met een carte blanche het onderzoeksveld verkende. Een spannende tijd volgde: het onderzoeken van thema’s die me aanspraken en waaraan ik hoopte op een zinvolle manier bij te dragen, het begin van de huisartsopleiding en de start van het aiotho-traject. Bas Maiburg en Joost Dormans: dank voor jullie ondersteuning in de tijd dat ik er zowel fulltime als parttime planningen op nahield en er gezocht moest worden naar stageplekken van waaruit ik snel naar de uni kon reizen om onderwijs te geven of aan mijn onderzoek te werken.

Dit onderzoek kwam langzaam maar zeker van de grond. Na elke studie was het weer een hele worsteling om te bepalen welke onderzoeksvraag nu het meest passend en relevant was (en haalbaar...). Paul: bedankt voor de bruisende gesprekken die we hierbij hebben gevoerd. Filosoferend over waartoe wij op aarde zijn, heb ik dankbaar gebruik gemaakt van je inzichten vanuit de praktijk en je eigen onderzoekservaringen, en de momenten waarop je de advocaat van de duivel speelde. Samen hebben we de eerste studies opgezet en uitgevoerd, zij aan zij de data doorgenomen en eindeloos gediscussieerd totdat we tevreden waren over de eindproducten.

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een enorm effectieve en kritische manier vraagstukken te bespreken en feedback te geven. En snel!! Wanneer het nodig was konden we zo samen bergen (schrijf)werk verzetten in een korte tijd. In de eindsprint deden we daarnaast ons voordeel met het tijdsverschil met Canada. Aan het eind van de dag stuurde ik je mijn vorderingen toe, waarna ik de volgende morgen al weer verder kon met jouw feedback daarop! Dank voor alle uren die je hier in hebt gestoken, de aanmoedigingen en het plezier. Dit heeft zeker bijgedragen aan het halen van de sprintplanning en de aanloop hiernaar toe.

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Laury. Onze reis begon digitaal in Zuid-Afrika. Wie had toen gedacht dat deze reis déze bestemming zou hebben? Als strenge (“de volgende keer kom je niet terug zonder behandelplan”) doch relaxte en inspirerende begeleider tijdens mijn GEZP was de basis voor een vriendschap al gauw daar. We hebben altijd contact gehouden, goed voor vele spar-momenten op bankjes in de zon. De laatste paar jaar kregen deze gesprekken een bijzondere wending doordat je nog meer geïnteresseerd raakte in het medisch onderwijs en – als vanzelf – mee ging werken aan mijn onderzoek. Gedurende de laatste twee studies was je een betrouwbare en kritische onderzoekspartner, waarbij er

ruimte genoeg overbleef voor meer en minder serieuze persoonlijke noten. Ondertussen hakte je zelf ook nog eens een belangrijke knoop door en besloot je de praktijk voor nu te verlaten om zelf een promotietraject op te gaan zetten. Ik hoop dat ik hier van dichtbij getuige van mag blijven. Ik heb er alle vertrouwen in dat dit je goed af zal gaan. De enige keer dat ik je uit het veld geslagen heb gezien is toen ik vroeg of je mijn paranimf wilde zijn – en dat gebeurt immers maar één keer.

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afgelopen paar jaar waren fantastisch en onze discussies hebben mijn promotietraject enorm verrijkt.

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Curriculum vitae

Curriculum vitae

Jonne van der Zwet was born on April 15th 1983 in Eindhoven. She attended VWO at Scholengemeenschap Were Di in Valkenswaard where she graduated in 2001. From 2001-2007 she studied Medicine at Maastricht University. During her studies she visited Birmingham (UK) to study an elective course on international health care systems, Salta (Argentina) to attend an elective clerkship in neonatology, and Pretoria (South Africa) to attend a Neurology clerkship. Additionally, she worked as a student-assistant at the Department of Educational Development and Research at the Faculty of Health, Medicine and Life Science at Maastricht University. After graduating from Medical School she started working as a PhD student at the same department. From 2008-2009 she combined her work as a PhD student with the first year of General Practice Vocational Training, after which she decided to focus on her PhD work. Parallel to these activities, she was a mentor, tutor, and teacher in communication skills for medical students. She is married to Robert Willemsen. They have two children and are expecting their third.

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