

# **Interprofessional education**

*An analysis of the introduction of a common core in curricula for  
selected health professions*

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Dissertation for the degree doctor rerum politicarum (dr.polit)  
at the University of Bergen

December 2007

## Abbreviations

CAIPE	Centre for the Advancement of Interprofessional Education
HiAls	Ålesund University College
HiB	Bergen University College
HiO	Oslo University College
IPE	Interprofessional education
KI	The Karolinska Institutet
MLS (Med. lab. scient.)	Medical laboratory scientist <sup>1</sup>
NOKUT	Norwegian Agency for Quality Assurance in Education
NHS	National Health Service (UK)
PBL	Problem-based
RHHS	The Council of Higher Education within Health and Social Care
UK	United Kingdom
WHO	World Health Organisation

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<sup>1</sup> Recently the profession has changed name into biomedical laboratory scientist.

## **Abstract**

**Title:** Interprofessional education: an analysis of the introduction of a common core in curricula for selected health professions

**Keywords:** perceptions, identity, habitus, capability, cultural capital, interprofessional education

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### **The aim of the study:**

- to identify cultural differences between various professions and educational institutions
- to explore how the implementation of the common core in curricula influenced students' professional habitus (identities)
  - when taught separately
  - when taught interprofessionally with longer or shorter duration
- to identify whether, and if so how, differences in the dimensions of interprofessional education affect students' perception of their own and of another health care profession's cultural capital (competence)

### **Context:**

The Norwegian government introduced a common core into the curricula (modified curricula) for all health and social educational programmes in the conviction that this would result in more collaboratively and thereby more effective and efficient health care. It called upon profession-oriented studies to introduce interprofessional education across the health and social disciplines with opportunities for interaction in the expectation that this would reinforce students' perceptions of their interprofessionalism and their habitus as health workers.

### **Theoretical framework:**

Bourdieu's theory of the educational system was chosen to shed light on the implementation process of the common core and to interpret interprofessional education in health care.

### **Methodological approach:**

A comparative, explorative design was chosen to study health care students' perceptions of interprofessionalism and of their own and of other professions' cultural capital. Different health care students at Oslo University College and Ålesund University College participated in 'StudData', a national database for studies of recruitment and qualifications in professions. The students were asked to respond to statements in a questionnaire about interprofessionalism. Students at Bergen University College and the Karolinska Institutet,

Stockholm, with different duration and modes of interprofessional education were also selected in order to get an insight into the students' socialisation process concerning interprofessional cultural capital. All data were analysed using SPSS; comprising cross-tables, one-way analysis of variance, while STATlab was applied to carry out correspondence analysis and analysis of hierarchical classification.

### **Results:**

#### **Part I Students' perceptions of interprofessionalism**

Students from five professions valued interprofessionalism differently. The occupational therapy (OT) and nursing students were more positive towards interprofessional education and collaborative practice than were the radiography and medical laboratory science students. Nursing students from four educational institutions understood interprofessionalism differently, those at Bjerregaardsgt. and Ullevål being more positive than those at Aker and Ålesund. Students with a modified curriculum appreciated interprofessionalism more highly than did those with an unmodified curriculum (before the revising of the curricula). The results showed that students having the common core implemented as interprofessional education valued interprofessional studies and work more highly than those with the common core implemented as unprofessional education. Students with longer interprofessional education appreciated interprofessional practice more highly than those with shorter interprofessional education.

#### **Part II Students' perceptions of own and the other profession's capability**

The mature OT and physiotherapy (PT) students at the Karolinska Institutet, with longer experience in health care before starting the study than corresponding students at Bergen University College had a broader view of their own and of other professions' cultural capital. The younger OT and PT students at Bergen University College, with less experience in health care, expressed a narrower perception of an OT's and a PT's cultural capital.

### **Discussion:**

The implementation process of the common core in the curricula and the results from empirical data of the student groups' perceptions are discussed in relation to theory, biosocial variables (as part of students' habitus), and result of previous research in the field. Finally, findings are seen in relation to how to improve students' habitus as health workers and their interprofessional cultural capital.

## Acknowledgement

I am grateful to Ålesund University College for financial support. Thanks go to Karl Johan Skårbrevik for his supervision during the initial phase and to Anne-Lise Høstmark Tarrou, Hugh Barr and Astrid-Mette Husøy subsequently for their inspiration, patience, advice and support.

I thank Eva Bohlin and Malin Piegsa for translating the questionnaire from Norwegian to Swedish, librarian Anne Hauso at Ålesund University College, and occupational and physiotherapy teachers and students in Ålesund, Bergen and Oslo who helped with the construction of one of the questionnaires. I am very grateful to the respondents completing the questionnaires. I am also thankful to Ingrid Heyman and Judith Clare for especially useful and worthy comments in the final phase of my work.

My thanks go to fellow students and staff at Bergen University College and Ålesund University College. I wish to express my gratitude to the ‘Glimpse’ group, i.e. Elisabeth Willumsen, Atle Ødegård and Susanne Kværnstrøm for their comments on various chapters of the thesis.

I am very grateful to the support from my family, Andrew, Anette and especially Silje for her English language vetting.



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# 1. Introduction

Professions, all having different scientific and practical approaches, have new problems in relation to specialisation within health care. Boundaries between professions, due to developing and maintaining claims of jurisdiction, have brought conflicts and struggle in the field of health care. The situation, also confirmed by my own experiences as a professional working in hospital as a teacher in health care programme and mentoring students in their placements, has led to a specific motivation for focusing on interprofessional education. The need to bring together separate professional skills has increased in response to the growth in the complexity of patients' needs, and in health and welfare services.

## 1.1 The context of the study

One major challenge for the modernisation of health care has been to take steps towards an improvement of future health workers by the means of collaborating interprofessionally. Another main challenge is the demand for rationalisation of resources, for lessening duplication and to provide a more effective, integrated and supportive health care in response to the growth in the complexity of patients' needs (Barr et al. 2005:7, Leathard 1994:7, Horder 1992:95).

Professional groups who may share much in common, or have complementary skills and knowledge, are educated separately rather than together (Hugman 1994:32). This, say Owens and Petch (1995:38), has had an adverse impact on the development of tribal attitudes after qualifications are gained. To improve the quality of health service, Mackay et al. (1995:6) emphasise the need for changes in the educational system.

To the emerging need for health service reforms, the public governing authorities in Norway have introduced a common core into a modified curriculum<sup>2</sup> for all health and social educational programmes. The intention has been to facilitate an initiation of interprofessional education across health and social disciplines. In this thesis interprofessional education is *occasions when two or more professions learn with, from and about each other to improve*

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<sup>2</sup> Beattie (1995:17) argues that an integrated curriculum might provide opportunities to resolve the fights in health care.

*collaboration and the quality of care* (CAIPE 1997, revised) with possibilities for interaction among students in order to improve their ability to work interprofessionally.

Interprofessional education should generate a new form of interprofessional self-awareness, Carrier & Kendall (1995:30) assert. All those involved should feel that they have equal status (Funnell 1995:168). Maybe development of a professional identity as a health worker could be such a form of interprofessional self-consciousness. This can be seen in accordance with Askjem (1996:45), who asks whether or not the students will develop a profession specific identity or a broader professional identity as general health worker.

Professional identity as health worker in this thesis is seen as the conception of what it means to be and act as a health worker, constructed in interaction with various reference groups with contrasting identities. Bunkholt (1996:53) emphasises that students in health care education in Norway should be socialised into a professional identity primarily as health workers, having a common identity with other groups and, secondly, as nurses, medical laboratory scientists etc.

As argued in this thesis, professional identity is embodied in students' habitus. Habitus is a *system of durable and transposable dispositions* (Bourdieu 1973:67) and functions as a matrix of perceptions, for example for students' perception of interprofessionalism and of their own and of other professions' capability. Capability is the ability *..to adapt to change, generate new knowledge, and continuously improve performance* (Fraser & Greenhalgh 2001:799) and is integrated as students' cultural capital. Cultural capital can be seen, in addition to titles and capability, as products (Petersen 1999:48) and includes a set of prevailing values and traditions. Viewed thus, students' perceptions of interprofessionalism may indicate students' professional identity and habitus e.g. as health worker.

According to Bourdieu (1986b:244), the embodied cultural capital becomes an integral part of a person as habitus. In this perspective, interprofessional cultural capital and capability is connected to the students' habitus. Therefore, in this thesis, interprofessional capability, as part of students' cultural capital, is seen in parallel with their perceptions of their own and of the other professions' cultural capital.

## **1.2 The purpose of the study**

The purpose of this study is to illuminate results of the political decision in Norway to introduce a common core in the health and social care<sup>3</sup> education and to describe and analyse the implementation of a modified curricula for health care programme. However, the common core in the curricula has sometimes been delivered as profession-specific (uniprofessional), not interprofessional. One aim of this study is to show how educational culture varies between different educational programmes or institutions. Another issue is the variation in the dimensions of interprofessional activities, such as in duration and mode. One might assume that such differences will influence the students' formation of a professional habitus and their development of cultural capital to work across boundaries. Individual factors will probably also contribute to an understanding of how the students perform as health workers and manage to cope with professions with various ways to think and act.

### ***Superior research questions***

- To what extent will professional cultural capital in educational institutions be important as guidance for development of students' interprofessional cultural capital and habitus?
- To what extent will interaction facilitate students' habitus as health workers?
- To what extent will the mode and duration of interprofessional education affect students' interprofessional cultural capital and habitus?

## **1.3 Structure of the thesis**

The focus of this thesis is on interprofessional education within health care. Chapter 2 describes the field of health care and discusses central concepts developed and used in the field, with particular reference to the development of interprofessional education. Governmental publications and a description of the field of interprofessional education will be presented. Professional and interprofessional identity and capability, often seen in the literature about interprofessional education, is discussed in chapter 2. As these concepts cannot be separated from the context in which they are created and constructed, cultural connection has been taken into account, when trying to obtain an increased understanding of the professional and interprofessional education.

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<sup>3</sup> Focus in this thesis is mainly on health care.

In chapter 3 a presentation of the main traits of Bourdieu and Passeron's thesis about the educational system is presented. Some key concepts on which the theory rests are described and married to some of concepts presented in chapter 2. This is followed by a discussion about professional and interprofessional education, in accordance with Bourdieu's concepts. The theoretical discussion concludes with some assumptions about professional and interprofessional health care education. By applying Bourdieu's theory about the educational system, my intention is to focus on which mechanism might influence the implementation process when introducing a common core in a modified curriculum and to what extent interprofessional education influences the students' socialisation process.

Chapter 4 presents the research methods chosen in the empirical part of the study, made among selected health care students and educational institutions. The theoretically founded assumptions, seen in the light of the empirical findings are presented in chapter 5.

The first part of chapter 5 describes characteristics of selected student groups from different professional educations, institutions and organisations, concerning age, and gender. To show students' habitus as health worker, a comparison between perceptions of interprofessionalism among students in different professional and institutional cultures, with unmodified and modified curricula, and whether the common core was implemented as unprofessional or interprofessional education is revealed, taking into account to different durations of interprofessional education.

In the second part of chapter 5, distributions of biosocial variables (as part of habitus) and cultural distinctions between OT and PT students and between educational organisations are presented. In order to give an indication of the students' interprofessional cultural capital, the students' perceptions and knowledge about their own and of other health professions' cultural capital are studied.

In chapter 6 the implementation of the modified curricula and the results of the empirical data of the students' perception of interprofessionalism and of cultural capital of their own and of other professions are discussed from various theoretical perspectives and assumptions. The influence of different biosocial variables and earlier research findings are also discussed when examining the results. Finally, the results in this study are seen in relation to educational



activities in order to reveal the improvement of students' professional habitus as health workers and to understand how to foster their interprofessional cultural capital.

## 2. Presentation of the field of health care

To understand the field of health care and interprofessional education, it is important to interpret earlier researchers' definition of the field. Therefore, this chapter begins with a discussion of the concept and characteristics of 'professional' in health care in general terms, before considering the concept 'interprofessional education'. An outline of the development of interprofessional education in Norway and Sweden will be presented. A typology of this educational initiative is described, followed by a presentation of different aspects of knowledge, competence and capability. Further, the development of professional identity, interprofessional socialisation, and interprofessional capability is discussed. At the end of the chapter, earlier research findings of interprofessional education linked to this study and theoretical approaches towards interprofessional education will be described.

### 2.1 Characteristics of professions in health care

A profession<sup>4</sup> can be considered as an occupational group with certain characteristics. Most definitions contain some of the following:

- having character or be in the nature of 'calling'
- based on certain knowledge and specific techniques of obtaining knowledge
- free or autonomous occupational practice (Hellberg 1978:4)

This classic understanding of a profession is static and non-historic where, according to Fosse (1995), characteristics are taken as isolated phenomena. Abbott (1988), on the other hand from a relativistic perspective, does not consider these characteristics important. His starting-point is that professions depend on each other and enter a system of professions. By a profession Abbott means: ... *an exclusive group applying somewhat abstract knowledge to particular cases* (1988:8)<sup>5</sup>.

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<sup>4</sup> Researchers studying professions and professionalisation have ascribed the concept a specific meaning within a theoretical work. This means one shapes a concept with a special content. Because of different traditions and perspectives within sciences, what is in the frames will differ (Selander 1993:14). Torgersen (1972) claims that it is not a special combination of occupational motivation and educational monopoly that constitutes a profession, but a *relation*, between occupations and a special education. An occupation is connected to a curriculum, to a syllabus, to a range of educational routines (Torgersen, 1994:27). He argues further on .. *we have a profession where a specific, long-lasting, formal education acquired for people who mostly are oriented against attainment of some specific occupations that according to social norm cannot be filled with other people than the one with this specific education* (Torgersen 1972:10, the authors translation).

<sup>5</sup> In the following, the concept profession supports Abbott's definition.

The essential property of a profession is how it controls knowledge and skills, argues Abbott (1988:8). He points to two rather different ways of accomplishing this. One emphasises control over techniques with personnel using it commonly called craftsmen. The other involves abstract knowledge. Here, practical skill grows out of an abstract system of knowledge and control of the occupation lies in control of the abstractions that create the practical. According to Abbott, the evolution of professions is a result of their interrelations; development within a profession will involve development in other, similar professions. The boundaries for the professions' integrity are not static and in Abbot's book on '*The System of Professions*' (1988), the concept 'jurisdiction' are central. Professions fight for jurisdiction or control over their respective fields.

Professions<sup>6</sup> and their educational systems have been constructed for different purposes, asserts Torgersen (1994:57). To show how a profession arises, Torgersen (1994:27) draws from different aspects: basis of knowledge, field of science, and experience of 'handbook' knowledge. All three can be employed to construct a profession, meaning regulated and certificated. Often disciplines can be combined, in different ways, to constitute education for a profession. The education in health care is often associated with a right to hold the title conferring entry into the profession. When professions are connected to certain work, often through extensive requirements of education, it is not only knowledge that is acquired, but also explicit values. As professions fulfil different tasks in society, the knowledge and values that the professions rests, varies.

Therefore the health care professions<sup>7</sup> embrace a wide range of knowledge and skills relevant to their roles and responsibilities. Some like physiotherapy, radiography, medical laboratory science and some parts of nursing have a longstanding emphasise in the natural sciences. Others are oriented towards humanism and qualitative scientific traditions, e.g. much of nursing and occupational therapy (Nortvedt & Grimen 2004:34). In reality, the health care professions are part of a social culture. This means that health care professions are a component of and influenced by social and cultural norms.

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<sup>6</sup> Interchangeable applied with discipline and occupation.

<sup>7</sup> In this thesis, the professions of occupational therapy and physiotherapy are central and therefore a somewhat more supplementary introduction of occupational therapy and physiotherapy has been given.

The role of the professionals, when it refers to features of the professional culture, is characterised by the time in history when the professions were established, and how long the professions have practiced (Drange 1995:15). Professional cultures reflect *historic factors, as well as social class and gender issues* (Hall 2005:188). In addition to politics and economy structures, ideas, thoughts and values have influenced the formation of the health professions (Nortvedt & Grimen 2004:20).

The nursing profession has a therapeutic orientation (Nortvedt & Grimen 2004:14), associated with care, helping the patient to be independent or to live with their illness and disease or prepare for a peaceful death (Molven 1996:234). Nurses also have a role as organisers within the field of health care, coordinating the participation of other professional groups, as well as collaborating with the patients and their relatives.

Physiotherapy focuses on therapy and diagnosis with traditions dating back to antiquity. Their profession has contributed to the development of knowledge about rehabilitation, exercise after diseases and competence connected to treatment of bodily and psychosomatic disturbances (Nortvedt & Grimen 2004:34). Today, the role of a physiotherapist, as Richardson et al. (2002:625) suggest, may be to act as a coach in preference to a ‘hands-on’ practitioner, and to manage care of chronic disease rather than to cure. The PT emphasises the use of physical approaches in the prophylactic and preventive work, and maintenance of an individual’s physical, psychological and social wellbeing. Seen in this perspective, a PT has a holistic view of patients and health care.

The occupational therapy speciality appeared later, emphasising stimulation of activities, self-care and rehabilitation. The occupational therapist (OT)<sup>8</sup> is concerned with enhancing the daily life skills of individuals with physical or mental health problems, or social needs (Quality Assurance Agency for Higher Education 2001:6). Their profession seeks to achieve health and wellbeing through engagement in meaningful occupations of daily living (Rogers 2005:70). The profession’s function is to enable people to seize, take possession of, or occupy the spaces, time and roles of their lives (Fisher 1998:509), in other words, to help the patient to be self-reliant.

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<sup>8</sup> In Norway an OT is defined as a health worker.

Physiotherapy is, according to Berg (1987:52), in Norway historically medically directed, while occupational therapy has changed<sup>9</sup> its character away from care towards treatment or rehabilitation, i.e. towards a more medical technical orientation. Compared with OTs, PTs often have a more independent position, having their own clinics, while most of the OTs are working in health care agencies (Taranrød 2001:7), and in home nursing care.

The profession of radiography emanates from the nurse of radiography and has today a special function connected with diagnostics and therapeutics. Radiography is an example of the formation of a new profession in response to political and economical wishes and demands. Similarly, medical laboratory science has its origin in nursing, working in the laboratory at the intersection between engineering and health care.

Table 1: Health professions and relation to patients and professions

<i>Profession</i>	<i>Patient-related</i>	<i>Profession-related</i>
OT	+	+
Nurse	+	+
PT	+	+/-
Radiographer	+	-
Medical laboratory scientist	+/-	-

Based on the above discussion, table 1 summarises these professions' relationships with patients and other professions. Therefore, in this thesis, students' perceptions of interprofessionalism may express their prospective profession's network of relationships in health care.

The underlying need for interprofessional activities and education in the welfare state, at any stages of the professional career, springs from struggle<sup>10</sup> among the professions in health care. To comply with the need to improve students' ability to collaborate beyond professional boundaries, interprofessional education may be an incentive. For an understanding of the concept of interprofessional education, the next chapter will present the concept in relation to health care.

<sup>9</sup> Such a change or development of occupational therapy may have involved modification of physiotherapy, being a related profession.

<sup>10</sup> There have been a number of cases when there have been failures in communication between different professions where the patients have suffered unnecessarily (Mackay et al. 1995:6).

## **2.2 Interprofessional education in the field of health care**

A classic argument for interprofessional education rests on the conviction that the educational work taking place during the study programme fosters students' ability to collaborate beyond professional boundaries which leads to a better provision of integrated care and treatment. In order to learn this, so the argument runs interaction and contact between students from different health professions has to take place. In this chapter, different understandings of interprofessional education will be explored. An outline follows of the development of professional education.

### **2.2.1 Learning across boundaries**

Various terms are used to describe occasions where students or professionals learn and work together. Leathard (1994:5) lists some of these, like inter-disciplinary, multi-disciplinary, multi-professional, trans-professional and trans-disciplinary. The problem is that 'inter' for some can mean between two groups only, while 'multiprofessional' can mean a wider group of professionals. Latinists translate 'inter' as between, 'multi' as many and 'trans' as across (Leathard 1994:6). Academics, however, use the prefix 'multi' to refer to coming together and the contribution of different professions.

Multiprofessional and interprofessional are often used interchangeably along with other terms, like shared learning. The WHO treats the adjectives 'multiprofessional' and 'interprofessional' as equivalents and defines 'multiprofessional education' as:

*The process by which a group of students (or workers) from the health-related occupations with different educational backgrounds learn together during certain periods of their education, with interaction as an important goal, to collaborate in providing promotive, preventive, curative, rehabilitative and other health-related services (WHO 1988:6).*

The distinction Barr (1994b:105) suggests is that interprofessional relies on interaction<sup>11</sup>, while 'multiprofessional' education refers to when two or more professions learn side by side. In this thesis multiprofessional education is defined as: occasions when *two or more professions learn side by side for whatever reason (CAIPE 1997 revised)*. Viewed thus,

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<sup>11</sup> As Shaw (1995:5) asserts, only courses which include interactive learning, should properly be termed interprofessional.

interprofessional education<sup>12</sup> is about learning from and about each other, not only just sitting alongside each other learning about the same topics. Trans or ‘pan’-professional, on the other, implies a willingness to surrender work-roles or jurisdiction.

### **2.2.2 Progression of professional education**

Since the 1950’s, specialist educational institutions have reinforced the discrete identities and values of the professions whom they trained (Beattie 1995:13). From 1960 to 1970, according to Beattie, the mutual understanding between professions was highlighted and interprofessional education emerged as a concept. One motive could have been rationalisation to achieve economies, when introducing a common core in the curricula (Gill & Ling 1995:175). On the other hand, changing curricula in this way can be seen to be important as a preparation for interprofessional practice.

Progression in professional education is shown in figure 1, each stage adding to the others. The figure shows different models for professional education, applicable for various purposes and dependent upon support from stakeholders. The first step is uniprofessional, i.e. a traditional model, where professions learn separately, focusing on profession-specific competence or capability. Profession-specific training schools shape students’ consciousness, language, values and sense of identity (Beattie 1995:16). At this stage, students’ identities tend to be discrete as nurse, doctor etc. Positive aspects of uniprofessional education are that the students may be prepared to fulfil the tasks society expects of them in their respective professions. The downside may be less motivation and ability to collaborate. Professional isolation is neither acceptable, nor appropriate according to Cole and Perdides (1995:62). Furthermore, they emphasise that this stage will not meet the challenges and changes in health and social care.

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<sup>12</sup> The definitions can be interpreted as referring to professions already educated. Zwarenstein et al. (1999:424) make it clear that interprofessional education can occur at any stage from pre-qualifying to advanced studies.

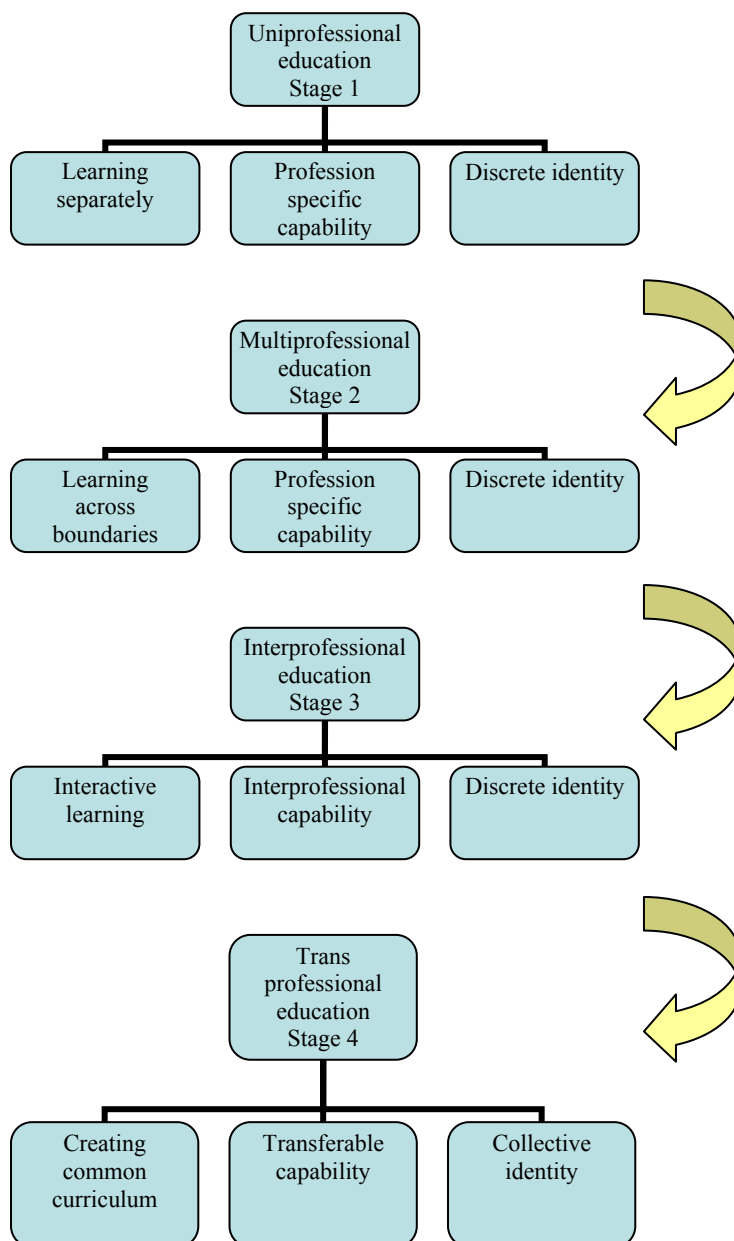


Figure 1: Illustration of the progression of professional education

The second stage in the progression is multiprofessional education, where students from different professions come together for all or part of their studies, sitting together but having no interaction with each other. The roles are separate and everyone concentrates on his or her own task (Thylefors et al. 2005:106). Curiosity about students from other professions and their work may result in a willingness to cooperate with them, but is neither planned nor assessed. Nor is there an expectation that they will share knowledge from their respective professions.



The third stage in the progression is interprofessional education, characterised by interaction between students from different profession-specific programmes. Students are still encouraged to develop discrete identities, but also to develop a broader and complementary identity as health workers. Identities are specialised, but everyone is expected to interact in the expectation that this may improve their ability to collaborate across boundaries (Thylefors et al. 2005:106).

The fourth stage in the progression is to cultivate trans-education where the professional identity is collective and the competence is transferable<sup>13</sup>. Thylefors et al. (2005:106) go further: *the roles are specialised, but everyone must be prepared not only to complement, but also to replace each other when necessary*. This stage, Rawson (1994:43) says, may be seen as a melting pot where *differences are reduced, ignored or realigned and melded into a new common purpose where the interprofessional work assimilates the older occupational groupings*. It is as yet unclear whether traditional professional identity will remain or whether new occupational groups will emerge. New roles, stresses Horder (1995:148), could be both more appropriate than the existing ones and relate to lower levels of remuneration.

Politicians and service managers consider flexibility and common competence as important for prospective health workers. Political initiative, Carrier and Kendall (1995:19) argue, is to introduce bureaucratic control over collaboration. On the other hand, Meads and Ashcroft (2005:31) construe this as the meaning of reform in health care delivery. Having a common core in the curriculum may give the same standard for all health workers and open up possibilities for role substitution and may reinforce the workforce strategy.

Another possibility is accelerating career progression by switching training pathways. A nurse has some credits to build on if he/she wants to be educated as a physician. These developments, Barr et al. (2005:89) point out, can raise controversial ethical, political and professional issues. They ask *how common must common learning be to ensure that one profession can substitute for another to the required standard or convincingly claim credit for prior learning*. Norman (2005:122) also fears the moves towards developing generic workers and suspects that the primary motive is economic rather than enhancing health care.

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<sup>13</sup> In some literature people are going beyond transferable and are using transformative capability (Barr, H. pers. comm.).

According to Jantsch (1980:305), trans-professional is *the recognition of the interconnectedness of all aspects of reality...It is an ideal that will always be beyond the complete reach of science, but which may guide in important ways the direction of its evolution*. On the other hand, Lauvås and Lauvås (2004:50) question if trans or pan-professional education should be regarded as an ideal.

Given that competence to work interprofessionally cannot be separated from the context within which they are created, some conditions must be fulfilled, e.g. through national and international political decisions as well as local educational initiatives. Such processes can be seen within health care studies in Norway and Sweden and are presented in the following chapter.

## **2.3 Development of interprofessional education**

Overlapping health and social care services imply professions which are able to share their skills (Wilson and Dockrell 1995:108). This can, however, only be done when different professions do not feel threatened by one another. An individual's willingness to disclose his or her role to other professions may be influenced by personal motivation, belief system and feelings of role security<sup>14</sup>.

To accomplish the good intention that all health workers should be able to work interprofessionally, some political movements have begun resulting in developments beyond uniprofessional education towards learning beyond boundaries. In this chapter international political guidance to initiate interprofessional education is presented, followed by a description of development and initiative of interprofessional education in Norway and Sweden.

### **2.3.1 Education for ability to collaborate**

In 1973, an Expert Committee of the World Health Organization (WHO 1973) reviewing medical education saw interprofessional and traditional programmes as complementary. The

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<sup>14</sup> A psychodynamic perspective sees the insecurity between professions, barriers of fear, even distrust, as reasons for defensive behaviour preventing interprofessionalism (Hinshelwood & Skogstad 2000). Individual professions must, Engel (1994:66) says, feel secure about their own competence before they can, for example, accept advice from a member of another profession. It takes time for members of a group to develop mutual trust and confidence. From this perspective, the key to improving collaboration is to reduce professional insecurity.

committee thought that interprofessional education would improve job satisfaction, increase public appreciation of health care and encourage a holistic response to patients' needs. The European *Health for All* policy adopted by member states of the WHO in 1984 identified interprofessional education as one of the activities to be given priority in order to reach the policy goals.

An Expert Group on *Learning Together to Work Together for Health* (WHO 1988) advocated shared learning to complement profession specific programmes. Health care students should learn the skills necessary for solving the priority health problems. Learning together had an important place in strategies for achieving the goal *Health for All by Year 2000*. To work together effectively and efficiently, the health workers need to learn and understand how other professions think on health issues and to value one another's skills and contributions (WHO 1988:14). By learning this at the pre-qualification education, students, or professionals, from health related professions will be better able to interact and work together to provide co-ordinated health care towards commonly agreed goals. An integrated approach, as Davidson and Lucas (1995:163) consider, helps the students to understand and respect each other's professional knowledge and skills. This point of view has been adopted by public entity in Norway.

In Norway<sup>15</sup>, interprofessional collaboration features in governmental publications (summarised by Willumsen & Breivik 2003). Bjørke (2000:10-11) divides the last 40 years of the changing process in health and social care education into four phases: establishing, consolidating, reorienting and implementing.

During the 1970's, the establishing phase, most of the health and social studies emerged. The Ministry of Education presented a proposal to establish a common curriculum for all health and social studies in the first year. The various educational institutions got together, not to start cooperation about occupational goal, but to prevent the Ministry from continuing with the plan. At first, the professional educations won and the university colleges remained partly autonomous.

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<sup>15</sup> The main focus in this project is conditions for interprofessional education in Norway. The emphasis is therefore on the Norwegian developments in interprofessional education.

In the 80's, the government introduced a secretariat to coordinate common rules for entrance requirements, exams and qualifications standards for teachers. An important work in the consolidation phase was to revise existing curricula to match common guidelines. This revealed that the health and social care educational programme had more in common than they had wanted to admit.

During the 1990's some of the health and social educational programmes were located in the same building, and simultaneously the National Council for Health and Social Studies was established. The task for the Council was to build strong connections between the different educational institutions. Interprofessional education and collaboration were highlighted. In 1998, the Council of Health and Social Studies changed into the Network Norway Council and this phase is characterised by reorientation of the education of health and social workers<sup>16</sup>. Yet by the end of 1990's, health and social educations in reality were still unfamiliar with each other.

In the first decade of 2000, the phase of implementation took place (Willumsen & Breivik 2003:300). In 1994 the Ministry of Education decided to put forward a proposal regarding a common core consisting of 30 credits in the curricula for most of the health and social educational programme.

### **2.3.2 Interprofessional education in Norway - in the melting pot**

In 1972 a Norwegian report (NOU 1972:23) suggested two ways to improve interprofessional collaboration within and between health and social care. One opportunity to strengthen this collaboration could be through systematic interprofessional post-qualification educations<sup>17</sup>. Another possibility, recommended also in the White Paper # 13 (1976) *The organisation of educations of health and social worker*, was that the health and social workers should develop a common frame of reference during pre-qualification educations. Thus the students may

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<sup>16</sup> The Norwegian Agency for Quality Assurance in Education (NOKUT), was established by the Norwegian Parliament in 2002 and commenced its activities on 2003. NOKUT is an independent government body. Through evaluation, accreditation and recognition of quality systems, institutions and course provisions, the purpose of NOKUT is to supervise and help to develop the quality of higher education in Norway.

<sup>17</sup> Norman (2005:120) points out that conventional wisdom has been that interprofessional education is best introduced post-qualification, when professionals have found their identities. He, however, notes that the trend now towards interprofessional education is starting at the pre-registration stage. Horder (1995:61) argues that positive attitudes are best engendered during pre-qualification education, before the recruits become set in traditional ways of working. Today's focus on 'life long learning' would rather indicate that interprofessional learning should be sustained throughout career-long continuing interprofessional development in post-qualification programmes (Freeth et al. 2005:13) and in informal learning situations.

develop interprofessional competence, enhance a feeling of belongingness to the field of health and social care and develop an identity as a health or social worker. On the basis of another report (NOU 1986:4), initiatives to improve the health and social students' ability to collaborate with other professions were considered.

Viewed in the light of the 'Hernes Committee' recommendations (NOU 1988:28) in *With knowledge and will* a comprehensive reform of the educations within health and social field was initiated. According to the White paper # 41(1987-88: 106) *Health politics towards year 2000 National Health Plan*:

*Health care is working in groups. If the goal is not in common, and if the occupational groups do not understand each others language, it is limited possibilities to work together. Working in group requires training and it ought to start already during education* (The author's translation).

The White Paper # 37 (1992-93) *Health promotion and preventive work* emphasised health enhancing work as a superior perspective to improve collaboration within health and social care and that this has to be reflected in the curricula of educational programmes. As Skirbekk (2002:25) points out, it is necessary to introduce an education and a learning process that develops an open and political culture. The White Paper # 40 (1990-1991) *From vision to work* sets out the vision for the reform of the university colleges, recommending that more emphasis should be given to developing a common culture. Professional collaboration should be strengthened across the existing boundaries between disciplines and educational institutions.

This is why a revision of the curricula<sup>18</sup>, within the health and social field has recently been undertaken in Norway, and 30 credits for nearly all health and social care study programmes

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<sup>18</sup> In the 1980's and 1990's the health and health educational political documents expressed that the professions have had too much power within health care. During recent years, Erichsen (1995:734) points out; the Government has in an increasing degree, a wish or demand to control the professions. In the 1990's, the interests of the professions were reduced in the national curricula of health and social educations, and the political power was the dominant agents when developing the new curricula of health and social educations. Through the new reforms, Erichsen (1995:733) argue, the health professions may loose their influence. The reforms in the educational system have contributed to development of new procedures, and new agents being responsible for the development of the curricula of health and social educations has occurred (Kvangarsnes 2005:248). The Council of Higher Education within Health and Social Care (RHHS) was responsible for the revision of the curricula of the health and social education from 1991 to 1997. The introduction of the common core in the curricula for all health and social care professions could be interpreted as a step to have more flexible health workers, with less focus on profession's specific subjects, and a tool to de-professionalisation.

have been included as a common core<sup>19</sup>. The aims are that the health and social educations should enter a pattern that promotes interprofessional collaboration, where different professions actively work towards a common goal – having the patient<sup>20</sup> at the centre. The objectives would give guidance for a user's perspective, a practice rooted in values, responsibility for organisations and ability to collaborate (Bjørke 2000:14). The aims are comprehensive, and a challenge for the health and social programmes.

A common core in the curriculum may enable the students to acquire a shared basis of knowledge and understanding, and a common point of reference as health workers. This could be the foundation, throughout their study, for developing a basis for practice and ability to work interprofessionally. The subjects are scientific theory, ethics, communication and collaboration, scientific methods and knowledge about the welfare state. The educational institutions were encouraged, with no demands, through various initiatives, to train the students' interprofessional capability (for further reading, see chapter 2.5) during their studies.

Even though the Ministry of Education has tried to put pressure on health and social studies in order to promote interprofessional education, only a few university colleges have included such activities in their syllabi. Interprofessional units have been developed in health and social care study programmes<sup>21</sup> at the university college of Tromsø<sup>22</sup>, Bergen, Sør-Trøndelag, Nord-Trøndelag, Oslo and Østfold<sup>23</sup>.

### **2.3.3 Interprofessional education programme in Oslo, Bergen and Stockholm**

Oslo University College (HiO) is offering studies within health and social studies. HiO's vision has been expressed as an aim to develop a university college culture emphasising educational perspectives (Bjørke 2000:13). Strategic Plan for HiO for 1998-2001 aimed at developing a learning culture, involving changes, new ways and exploring new ideas. The

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<sup>19</sup> Beattie (1995:20) argues that establishing a common ground should be defined in terms of shared definitions of priority needs and tasks, including care, and shared definitions of client and targets. Roles and standards of good practice should be defined and agreed on the bases of who do what best in a particular health project or programme.

<sup>20</sup> Patient is preferred although client and user are applied in some fields of health care.

<sup>21</sup> A brief interprofessional education initiative was carried out at the University of Stavanger.

<sup>22</sup> The central government decided that interprofessional education should be piloted in Tromsø for students from medicine, pharmaceuticals and psychology at Tromsø University and allied health and nursing at Tromsø University College. The pilot project started in 1992.

<sup>23</sup> Norwegian University of Science and Technology (NTNU) in Trondheim has established a course (7.5 credits) Expert in Teams (EiT) for all the engineer students with objectives to improve a professional as well as a personal development, and develop knowledge, attitude and skills related to interprofessional collaboration.

Faculty of Health Science at HiO<sup>24</sup> implemented the common core as an interprofessional module, named VEKS<sup>25</sup>, after the initials in Norwegian of the main topics:

- V:** scientific theories and research method
- E:** ethics
- K:** communications, cooperation and conflict solving
- S:** health and social policy

The objectives are to educate reflective health professionals, having the patient at the centre, being able to plan and organise initiatives in collaboration with them and with other health professions. The module is organised into three units: 1) ‘health care student today’, 2) ‘user and provider – reflection on practice’ and 3) ‘soon being a professional health worker’ (Bjørke and Haavie 2006:645).

The aims of these college-based interprofessional modules are for the students to gain a common understanding of health care with regards to basic values, the connection between providers and users, acquiring knowledge about careers and contribute to the strengthening of collaboration between the different professional groups (OT, PT, nursing, radiography, medical laboratory science). The teaching and learning strategies consist of lecturing and a variety of interactive learning methods, like problem-based learning, project-based learning, reflection-in-action, case studies, discussions and role play.

Corresponding interprofessional activities have been developed at Bergen University College (HiB). Nursing, OT, PT, social work, social education, radiography and medical laboratory science students at HiB participated in interprofessional courses in the first year (two weeks) and second year (one week), all college-based. Student groups, except the medical laboratory science students, also attended a two day course in the third year. The themes in the first year are communication and ethics with the focus on theories about communication, skills to communicate, theory about relations and empowerment, personal competence, intercultural communications, collaboration and communication skills connected to management, handling conflicts and strategy for negotiations. In the second year, the topics are ethics and user’s involvement, emphasising theories about ethics, models, perspectives and dilemmas, human

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<sup>24</sup> Education of social workers and nurse are not a part of the Faculty of Health Science and not involved in the interprofessional educational programme. Even if the structures between the different departments set boundaries for the collaboration between the departments, the intention was to find new organisational solutions to involve all health and social students in interprofessional activities.

<sup>25</sup> Allied health students at HiO participated in VEKS I and II: scientific theories and research method, ethics, and communications, cooperation and conflict solving (15 credits). OT, PT, and radiography students attended VEKS III: health and social politics (15 credits).

rights, medical ethics and ethical problems, the users' perspectives, ethical challenges within the intercultural aspects. Pedagogical methods applied are lecturing, and different interactive learning methods, like case studies, discussions and working groups.

At the Karolinska Institute (KI) in Stockholm<sup>26</sup>, an interprofessional concept of medical and health care was introduced in 1998 (Mogensen et al. 2002:10). Centres of Clinical Education are built up to promote meeting places during clinical education for medical, nursing, OT, and PT students. The centres consist of:

- Clinical Training Ward - a ward without patients
- Clinical Educational Ward as a student-driven ward
- Multidisciplinary Group with teachers planning and providing interprofessional learning

The objectives for the centres are:

- to bridge professional boundaries – aiming at an interprofessional view for teachers and students
- to coordinate undergraduate studies and clinical reality – exploring the frontier between new knowledge and reliable experience
- to combine education for in-patient and out-patient care and to foster better understanding of the interplay between them
- to integrate theoretical and practical knowledge – developing the ability to transform theory into practice and explaining clinical findings in terms of pre-clinical knowledge

At the Clinical Education Ward the OT, PT and nursing students participate in their last term (sixth term), and medical students attend in their surgical term (eight term of total eleven) for two weeks courses (3 credits) (Ponzer et al. 2004:729). The students work in the prospective professional role with patients at a hospital with focus on the patient's need of medical treatment (physician), care (nurse) and rehabilitation (OT/PT). Themes are to '*work in multiple organisation and have insight into each professions' contribution – development of their own professional competence and to have perspectives on group work*', '*see the patient as a partner – developing an understanding of other professions' competence and roles*', '*the understanding of the patient as a resource*', '*health ethical aspects*' and '*talk and understand other providers from different health professions*'.

The goals for placements at the student-driven ward are, according to Ponzer et al. (2004:727), to provide the patients with good medical care, nursing and rehabilitation. The

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<sup>26</sup> Sweden does not have comparable interprofessional policies to Norway.



purpose for the students is to develop their own professional roles, to enhance their level of understanding of the other professions, to stress the importance of good communication for collaboration and for patient care, to enhance understanding of the role of the patient and to become aware of ethical aspects within health care. The PT students participate at the Clinical Training Ward<sup>27</sup> for two weeks during the second year. The pedagogic methods at KI are received and interactive; simulation-based, action-based and practice-based learning are applied. The course is assessed as passed or failed.

Different dimensions of interprofessional education, like mode and duration, may influence students' perceptions of interprofessionalism and the capability of their own and of other professions. Therefore, the next chapter will discuss various aspects of interprofessional education.

## ***2.4 Dimensions of interprofessional education***

One may assume that the success of the interprofessional activities depends on how the interprofessional initiatives are implemented or the dimensions of interprofessional education. Learning to work interprofessionally has many facets, ranging from understanding other professionals' value systems and roles, to practising interprofessional communication in the field of health care. To study various aspects of interprofessional education, this chapter outlines different dimensions of interprofessional education, followed by a typology of such educational activities.

### **2.4.1 Aspects of interprofessional education**

Interprofessional education, Gill and Ling (1995:189) suggest, has at least the following components:

- mutual experience and learning with different significant others
- knowledge about the work, roles and responsibilities of different significant others
- knowledge focused on the skills and strategies for collaboration

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<sup>27</sup>A simulated ward environment is established, where the students practice several procedures, either unprofessionally or as interprofessionally. The students' experience at the centre does not give any credits. The whole department is arranged for training for practising with video monitoring, where the supervisors can look after the collaboration on the screen (Vestergaard 2005:26). The rooms can be arranged as a delivery room, where the supervisors can make the child's, in reality a doll, lips blue during the process and evaluate the reactions of the groups. Simulated patients show the symptoms of a variety of medical conditions. In this room the students can watch their own performance on video, listen when they take the anamnesis or insight with the actors, or be sensitive to the group's handling of a complex patient progress. Another room is arranged giving possibilities for reflections in student groups.

Both process and content in their model will directly enhance possibilities for students to work together across boundaries. They stress that the interprofessional education process, not only increases knowledge, but also prepares the students to work effectively together with individuals from other professions in the future.

In the process, Barr (1994b:105) emphasises, the individuals get to know, respect and like members of other professions, in spite of differences, to set aside prejudice and stereotypes and, with luck, to transfer positive attitudes and feelings to interprofessional collaboration in the workplace. He underlines that lumping students together across professions is one thing; enabling them to learn from and about each other is another. Thus, if students from different professions are brought together, they have the opportunity to learn about each other and dispel negative stereotypes<sup>28</sup> (Dickinson & Carpenter 2005:23).

Three overlapping foci emerged, Barr et al. (2005) found, when analysing a review of 107 robust evaluations of interprofessional education (for further reading, see chapter 2.7). The first focus is on preparation of the student with knowledge, skills and attitudes for collaborative practice (figure 2). This focus emphasises acquiring common and comparative knowledge, for instance reciprocal understanding of roles, responsibilities and relationship. It employs interactive learning, mainly college-based, to facilitate comparison of differences in values, attitudes and perceptions among professional groups. By being brought into a field of interprofessional education, the stereotyping and attitude towards each other are made accessible to change.

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<sup>28</sup> To avoid stereotypes, however, it is not enough to bring the students together, as Allport (1954) demonstrated. He looked at the origins of intergroup prejudice and recommended that their members should have equal status in their contact with each other; they should work towards common goals, have institutional support and cooperate with each other. These conditions have since been refined and are collectively known as the 'contact hypothesis'. This social psychological perspective recognises that negative stereotypes are barriers to effective interprofessional working relationship (Gordon 2006:25). The basic tenet of this hypothesis is that contact reduces prejudice. However, as Dickinson and Carpenter (2005:23) stress, most prejudiced people would avoid contact with people they do not like. Therefore, participants will usually be those who are least prejudiced and it is therefore difficult to establish that intergroup contact reduces prejudice.

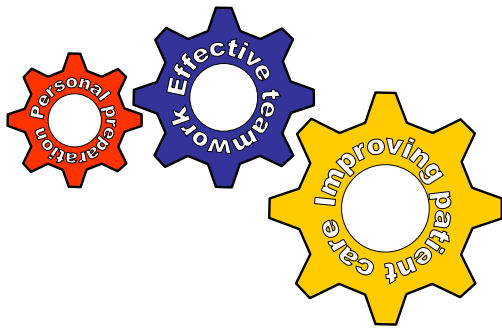


Figure 2: Illustrating the interlinking relationship of the three foci of interprofessional education (Barr, E-mail message to author, December 15, 2005, based on Barr et al. 2005)

The second focus is on cultivating collaborative group practice. This includes collaboration within and between groups, within and between organisations, with patients and with the communities.

The third focus is on developing services and improving care. Promoting collaboration is not sufficient, interprofessional education is expected to *engage directly in service developments, reinforcing workforce strategies, facilitating implementation of policies and improving the quality of services* (Barr et al. 2005:89).

Figure 2 represents the three foci as a cycle driven when all is proceeding. As each cycle reinforces the other, Barr et al. (2005:93) say:

*failure to achieve one or more foci in a cycle adversely affects the others, retarding momentum... failure to activate positively any one of the cycles retards the others, and consequently undermines the achievement of a range of possible positive outcomes related to interprofessional education.*

In other words, to obtain a maximum advantage of interprofessional education, all foci must be included and may be built into a continuum over time. Each focus has different implications for the content, learning methods and location.

However, benefits from working interprofessionally come not, as Øvretveit (1995:42) points out, just from co-ordinating of separate profession's activities, but from melding them in new and creative ways, hence producing a sum which is greater than the parts. Experience shows

that it is not easy to introduce interprofessional education. Professions' autonomy in decision-making varies. So too do lines of accountability (Beattie 1995:118). As health care requires clear accountability, agreement has to be obtained about responsibility for different areas. Unwillingness of students and teachers to experiment with different pedagogical methods and different learning and teaching resources are some other difficulties, according to WHO (1988:50-51). Also insufficient opportunities for work-based training can result from lack of role models for interprofessional work and a fear among teachers and other members of health professions of loss of their identity.

#### **2.4.2 A typology of interprofessional education**

Interprofessional education can be constructed in innumerable ways. Barr (1996) took the following dimensions into account when he formulated a typology of interprofessional education: implicit or explicit, discrete or integrated, all or part, general or particular, positive or negative, individual or collective, work-based or college-based, shorter or longer, sooner or later, common or comparative and interactive or didactic. He distinguishes further between different types of interprofessional education with regard to objectives, curriculum content and learning methods (see figure 3 based upon preceding discussion). Further, he highlights the stage that participants had reached in their professional education, when interprofessional education was introduced, the length and the location, and validation of the interprofessional education (Barr 2002:32).

Objectives<sup>29</sup> (for further reading, see chapter 2.7) can, according to Barr (1996:342, 2005), be grouped under three headings: modifying attitudes and perceptions, enhancing motivation for collaboration and acquiring collaborative competence. The goal by sharing knowledge, Areskog (1994:127) emphasises, is that the students will gain insight into similarities and differences<sup>30</sup> between various health professions. In a comparative learning situation with comparison reference groups present, the students may achieve increasingly respect and mutual understanding.

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<sup>29</sup> One can question whether the objectives for learning across boundaries may result in a dilution of specialist skills, reducing the power of traditional professions and deconstruction and reconstruction of the professions, in other words, fewer and/or newer professions with greater flexibility and adaptability. Webb (1992:223) asserts that interprofessionalism could be seen as an attack on the professions, that is, deregulation disguised as promotion of cooperation. He points out that interprofessionalism effectively deconstructs the established order of occupations, and removes the closure of old boundaries.

<sup>30</sup> An interprofessional course at the University of Adelaide did not focusing on harmony within health care but wanted the students to be able to understand the origin of conflict and difference and the limitations as well as the strengths of a working in groups and was a very effective environment for each professions to learn to understand and respect each others' professional roles and responsibilities (Davidson & Lucas 1995:173).

To remove negative stereotypes held by professions about one another is the most common objective for interprofessional education. This, as a distinction to multiprofessional education, as Dickinson (2003:53) emphasises, has less focus on changing attitudes or perceptions of participating professions to work together. On the other hand, enhancing motivation is not often explicit. Collaborative competence and interprofessional capability is discussed in chapter 2.5.2 and 2.6.3.

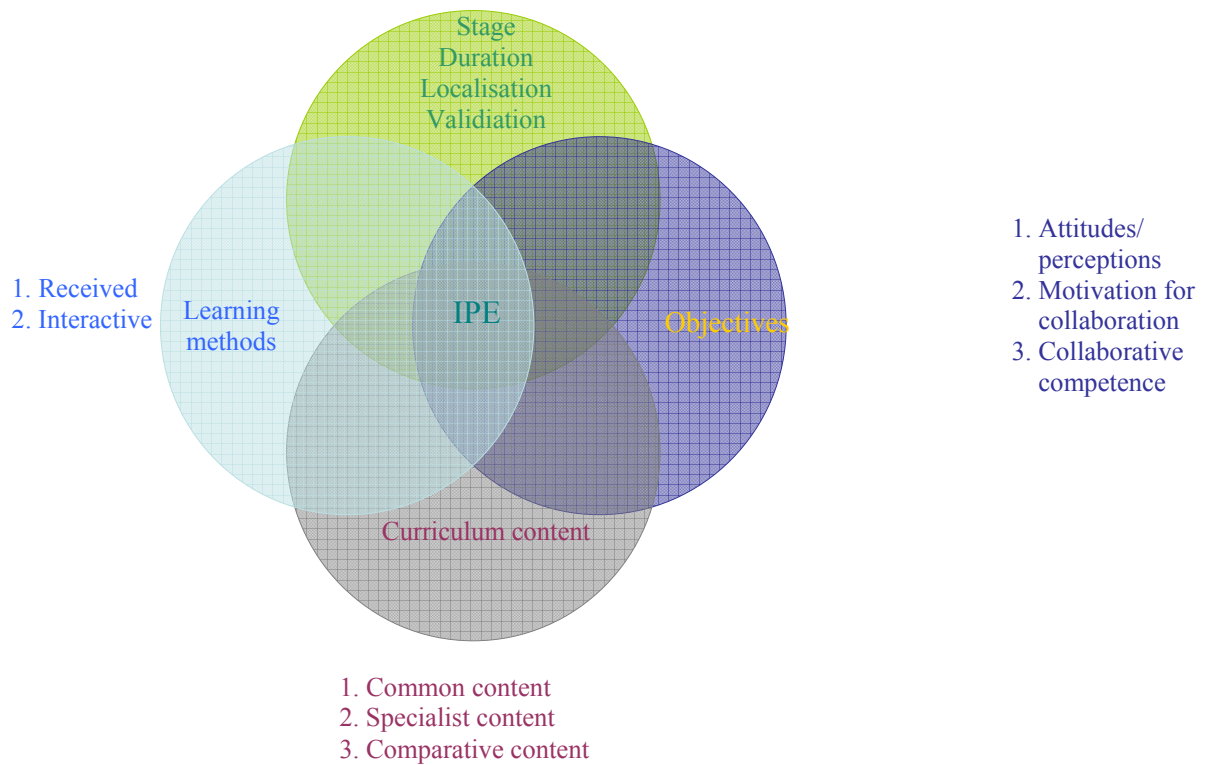


Figure 3: Illustrating dimensions of interprofessional education

In the classification of curricula<sup>31</sup>, Barr distinguishes between: common content, specialist content and comparative content. Common content can be seen by the educational institutions as an economic gain and by agencies as a way to have a more broad-based and flexible

<sup>31</sup> Bernstein (1971:47) separates between two fundamental types of curricula, the collection curriculum, emphasising autonomy and separation of subjects, and the integrated curriculum with active connection between the subjects. In the collection curriculum, subjects are taught separately and reproduce a message about power and hierarchy, and have a powerful control, influencing consciousness, language, values and sense of identity of the students. The integrated curriculum the purity rule is rejected and the principle here is that things shall be put together.

workforce, connected to stage four in figure 1. Specialist content describes the qualifications necessary to fulfil the task that the society expects of the professionals and is recognised as uniprofessional education. As Barr (1996:343) emphasises, *interprofessional education can only fulfil its purpose when it is complemented by specialist content*. Comparative content generates ability to collaborate grounded in mutual understanding between the professions. Such curricula are seen as a bridge between common and specialist content and give opportunities for professions to learn about one another, in other words, a curriculum characterising interprofessional education (stage 3 in figure 1).

Barr's typology also distinguishes between two types of learning: received and interactive<sup>32</sup>. The former includes lectures<sup>33</sup> and written material, while the latter distinguishes between five different learning methods which are not mutually exclusive. These are exchange-based, action-based, observation-based, simulation-based and practice-based learning. Exchange-based learning includes approaches that encourage participants to express views, exchange experience and expose prejudice, debates about ethical issues, role-plays and games to loosen up relationship and case-studies to compare respective roles (McMichael et al.1984:250).

Action-based learning includes problem based learning (PBL)<sup>34</sup>, methods of investigation and co-working. Joint visit to a patient or client by students from different professions is an observation-based learning approach, giving opportunities to compare perspectives and perceptions. 'Shadowing' is another form of observation-based learning, where for example part-time students concurrently in employment visit each other at their place of work. Role-play, skills labs and experimental groups are simulation-based learning where students take different parts in imagined situations that enable relationship to be explored. Students attending training wards and placement with others from different health care study programmes are an example of practice-based learning method.

College-based and work-based interprofessional education offer different but complementary opportunities for interprofessional learning. Each can reinforce the other (Barr et al. 2005:35).

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<sup>32</sup> Without interactive learning tools, practicing interprofessional work would be difficult (Hall & Weaver 2001:870). In their research, Funnell et al. (1992:6) found that the majority of participants preferred styles that were participative and interactive in nature.

<sup>33</sup> Changing attitudes and views requires forms of education other than lectures (Richardson 2002:625).

<sup>34</sup> PBL is a structured educational activity, often using case presentations as the stimulus to learning (Hall & Weaver 2001:869). PBL is not just a method, but a way of learning (Engel 1991). For further reading see for example Kjellgren et al. (1993).

Interprofessional education in college may lead to more rounded understanding of collaborative practice, Barr (1996:34) says, while work-based initiatives integrate both the process and outcome of interprofessional education. This type of learning arrangement offers more opportunities for interprofessional interaction and collaboration than college-based interprofessional learning (Reeves & Freeth 2002:45). The wards offer excellent opportunities to practice clinical skills as well as collaboration, according to Mogensen et al. (2002:12). They believe that students will gain valuable experience when facing real-life situations in their prospective professions.

To impart different sorts of knowledge it is best to give examples, especially from the practical reality, Molander (1993:192) underlines. As Gill and Ling (1995:187) stress, it is central that the students experience the learning situation as being as real as possible in relation to their future working situations. Accordingly, Mackay et al. (1995:168) assert that curriculum designers need to produce contexts in which learners perceive the content and mode of learning as relevant.

As Wilmot (1995:259) points out, interprofessional education must create conditions where there is *authentic interprofessional dialogue* in which students are clear about their own and others' professional values and communicate, empathetically, their respect for each other. According to Dickinson (2003:59), this requires changes to the traditional environment and the creation of the opportunity for students to interact with each other, e.g. 'in the real life'. Thus the outcome of interprofessional education may reduce professional isolation and problems of role ambiguity and insecurity.

The discussion about stage prompts questions about when interprofessional education should start; from the first day or later. There is no clear consensus on the ideal timing of an interprofessional education (Hall and Weaver 2001:867). Hilton (1995:39) suggests that interprofessional should start early and start simply. Accordingly, Areskog (1995:126) argues that interprofessional education from the first day will influence students' attitudes in a positive direction towards future co-operation and increase the students' development of a conventional professional identity.

Having a common professional identity, Gill and Ling (1995:186) suggest, in the beginning of a course, would assist the process of shared learning. Nevertheless, they consider that the

students should have an understanding of their own particularity in their prospective profession. This is a precondition for the students so they can be able to give each other insight about their future profession, something that is required for having a successful interprofessional programme. By concentrating the interprofessional education at the end of the education, when the students know their own profession, Jensen (1996:45) asserts, will make interprofessional collaboration easier. I support Walsh et al. (2005:232), who conclude that interprofessional learning has to be sustained within and throughout the students' learning experience.

The duration of pedagogic work is another question to consider when planning interprofessional activities. When designing a short interprofessional course, the content and methods must be selective and the objectives specific, Barr (1996:347) stresses. The longer the duration, the more diverse the content, learning methods and objectives can be. This gives reason to wonder if a longer duration of interprofessional initiatives may increase students' outcome of interprofessional activities, compared with students having a shortage of interprofessional education.

Higher education plays its part by educating health care professionals with the expected qualification to practise professionally with the patient at the centre. Being able to communicate and collaborate with colleagues from other professions is therefore essential to achieve better health care and presupposes appropriate knowledge, competence and capability. Such properties will be outlined in the next chapter.

## ***2.5 Knowledge, competence and capability in an older and a modern perspective***

To understand the variation of students' perception of interprofessionalism and competence of their own and of other professions, the concepts of knowledge or 'gnosis', competence and capability will be discussed in this chapter in the light of role that prospective health workers are expected to fill.

### **2.5.1 Knowledge in an Aristotelian's perspective**

The growing body of knowledge in modern society, Skirbekk (2002:24) describes as driving differentiation within professions, resulting in the need for vision, integration and



collaboration. As a health worker one has to be able to take different perspectives to regard the world and health care. This involves knowledge beyond the instrumental, towards knowledge as information, as reflection and hermeneutic insight. The question is whether the contemporary view of knowledge involves the dimensions being described.

We have roots in our views of knowledge which go back to the old Greeks like Plato, Socrates and Aristotle. In this chapter I will look at Aristotle's view of knowledge, or rather gnosis, to obtain insight into what health care students should acquire to improve their ability to collaborate across boundaries.

Eikeland (2002, 2006a) has presented an overview of Aristotle's gnosis and distinguishes between three basic sorts of gnosis<sup>35</sup>:

- 'aisthesis', i.e. perception
- 'empeiria', i.e. practised experience
- 'energeia', i.e. self-realisation, practical development<sup>36</sup>

These three are differentiated along various dimensions, for example, whether the gnosis is articulated intellectually i.e. as 'logos', or not articulated, i.e. as 'alogos' (as practised, bodily habit or skill ('hexis'/'habitus'<sup>37</sup>)), the known in relation to the knower and the purpose of knowledge and applied methods (Eikeland 2006b:10).

'Theoresis' in Greek links to the articulated aisthesis and is connected to an outer condition; knowledge one acquire as a spectator. As a tacit sort of aisthesis is, 'doxa' is an unreflected meaning of, or perception of, something, e.g. prejudice.

Empeiria is performance of good actions, judgements of the situation and well considered choices. 'Phronesis' is intellectual and ethical virtues connected to the body of empeiria (Eikeland 2006a:20). It consists of a special sort of management of logos and has reference to practising. As Carr (2000:75) expresses:

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<sup>35</sup> Sort of gnosis is, emphasises Eikeland, not reduced to each other, it means that one sort is a complicated version of the other, even if they can be implicated to each other, presuppose each other and merge into each other. The different sorts of gnosis are therefore not mutual exclusively, but rather overlapping. Also Josefson (2001) underlines that Aristotle means that the different form of knowledge could merge into each other.

<sup>36</sup> Nortvedt and Grimen (2004:170) on the other hand, distinguish Aristotle's gnosis between 'episteme', 'techne' and phronesis.

<sup>37</sup> Hexis/habitus are trained habit-skills-ability (Eikeland 2002:16). Habitus is the Latin version of hexis. The formation of disposition/character or 'etics' is, according to Aristotle, something to do with formation of habit as hexis/habitus rather than an intellectual understanding.

*Aristotle regards reasoning about actions which is mainly focused upon establishing effective means to chosen goals (techne) as technical or productive reasoning, but refers to reasoning which is primarily directed towards the discernment of right ends – what value as such – as moral wisdom (phronesis).*

Phronesis is the rational ability to both argue and consider the right goal as well as the meaning of the situation or, as Schön (1983, 1987) describes it; ‘reflection-in-action’<sup>38</sup>. In groups where different professions participate, there can be conflicts about what kind of comprehension is legitimate, that is, alternatives for action dependent upon which methodological assumptions dominate. Students have their understanding of their own and of others’ future professions. To reflect on one’s situation and understand it, or improve the phronesis seems to be central in today’s health care educational studies.

The experience one acquires as a student will guide how well one will face the world in one’s future career. Such ‘pragmata’ are not systems of words in the form of distinct theories. They are structures of competence and skills in form of individual or collective pragma-topography or bodily practised and incorporated models (Eikeland 2002:30).

Energieia is self-realisation, practical development and learning. It is to create a collaborative understanding; making allowances for the various professions with their own perspective of relation from different conceptual and methodological assumptions, acquired through practice and dialogue. Eikeland regards ‘theoria’, connected to logos or articulated part of energieia, as primarily about true, objective insight in the condition (2002:58) and common rules which include competent ways to act connected to a certain field.

‘Praxis’ is connected both to the tacit form of the gnosis energieia as ‘praxis<sub>1</sub>’ and empeiria<sup>39</sup> as ‘praxis<sub>2</sub>’<sup>40</sup>. The object for praxis<sub>1</sub> is acting and performance, and the perfection of these skills. Praxis<sub>2</sub> can be seen as politic of every day life and the rhetoric’s changing activity – a kind of fellow citizen’s behaviour and concerns primary outer objectives and purpose or

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<sup>38</sup> Schön (1983) identifies two kinds of reflection – ‘reflection-in-action’ and ‘reflection-about-action’, the first, in the middle of the action and the last, after the action.

<sup>39</sup> Empeiria is an accumulation of experience; as a practised preparedness of action or habitus (Eikeland 2006b:11).

<sup>40</sup> Also Michael Polanyi (1966) dichotomises practical knowledge; as elementary and qualified knowledge. The purpose of elementary practical knowledge is to solve routinised tasks in a foresight and stable community, while qualified practical knowledge provides rethinking, that in its turn must depend on others rethinking. For example, praxis is often used for ‘practice learning’ in social work.

‘skopos’. Praxis<sub>2</sub> includes both a functional established ‘loyal’ unanimity and procedures for the choices of the group’s skopos. Unanimity is about a common understanding of habit, routine and skill. However it is not about having an equal knowledge about substantial themes, but rather about condition that can give agreement and collaboration; about agreement on rules of the game between health workers, within health care. Praxis<sub>1</sub> happens, according to Eikeland (2006b:31) behind the stage, while praxis<sub>2</sub> occurs on the stage. In other words, praxis<sub>1</sub> is linked to students’ preparation to perform, while praxis<sub>2</sub> is the performance as future professional health and social workers.

Praxis is not the medical knowledge about the patient as an object, which is more like knowledge of statement or propositional knowledge<sup>41</sup>, but it is the collaborative competence that is a condition for good treatment and it is assumed different professions to be able to collaborate. Praxis can be regarded as a kind of ‘organisational’ collaborative competence or skill. It concerns matters one has in common, and must have in common, to function together in practice, in other words, for correct professional performance within the field of health care.

Thus praxis is related to collaboration and what human being has in common and share with each other. It is also connected to development, understanding and managing the tasks within the field of health care and should be task-oriented and task-solving collaboration, informed by social conventions. Eikeland (2002:51) emphasises areas of activity related to a task in common - a common subject - with a high level of multiprofessionalism. In health care, it is, or ought to be, the patient who is the subject in focus. Skirbekk (2002:11) refers to a collaborative understanding; making allowances for the various disciplines with their own perspective of relation from different conceptual and methodological assumptions or paradigms.

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<sup>41</sup> Molander (1992:13) identifies three kinds of knowledge: *propositional*, *practical*, and *familiarity*. Propositional knowledge he defines as knowledge which can be codified and articulated, e.g. theories, concepts, generalised principles, rules and procedures. Practical knowledge is about knowledge which is linked to specific skills or competencies, i.e. how to do things. Familiarity the author defines as performance and practice. Like Molander, Eraut (1994) identifies practical knowledge as a key category of knowledge, alongside propositional knowledge. Eraut underlines that practical knowledge is often resistant to precise analysis or articulation. He identifies two subsets of propositional knowledge: *public knowledge* which is the kind of knowledge available in libraries and *personal knowledge* as a kind of knowledge an individual brings to a job. The author offers a further general category, *process knowledge*, which he characterises as knowing how to do things that are linked to professional action e.g. planning, decision making and skilled behaviour.

Aristotle's view of gnosis is wider than today's compartmentalisation of knowledge. Therefore, in this thesis, the gnosis *energeia*, as *praxis*<sub>1</sub> and *theoria*, in addition to *empeiria*, connected to *phronesis* and *praxis*<sub>2</sub>, are central for the students' development of ability to collaborate across boundaries.

## 2.5.2 Capability and competence

WHO defines competence as:

*the ability to carry out a certain professional function, which is made up of a repertoire of professional practice. Competence requires knowledge, appropriate attitudes and observable mechanical or intellectual skills, which together account for ability to deliver a specified professional service (WHO 1988:68).*

For Gulbrandsen (1994:70), competence constitutes both a condition for action and an inner reference system, or background knowledge of perception or comprehension of the surroundings. Viewed thus, competence involves knowledge of statement, knowledge of skills and knowledge of confidentiality. It is, or includes, knowledge in action. Competence is partly explicit knowledge<sup>42</sup> of statements and partly implicit or tacit as knowledge of skills and of confidentiality<sup>43</sup>. However, competence, Walsh et al. (2005:232) underline, can be seen as components of reality that are divided up and taught in order to assist students to master a particular skill or function. They say that competence alone is restrictive to understand the learning requirements of interprofessional workers.

Research within professions emphasise that competence includes knowledge, skills and attitude, necessary for the practice of the profession, but also ability and disposition to reflect on what one is doing (Lycke 1996:9). This extended concept of competence is nearer the concept of capability. It includes ability to change and to generate new knowledge and to improve performance. In the following discussion the term capability is preferred to competence, to signal the need to respond to change.

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<sup>42</sup> Knowledge of statement concerns how an objective reality; 'some place out' (Aadland 1997:90).

<sup>43</sup> Knowledge of confidential is not knowledge without purpose (Josefson 2001) and can be silent skills, moral, aesthetic and religious knowledge (Aadland 1997:90).

In the complex world, within which the students exist, the students must acquire capability<sup>44</sup> to work across boundaries. This will emerge through challenges, generally in unusual contexts, for example in groups where students perform with different concepts, methods and paradigms, based in the jurisdiction of their professions. I argue that students, during an interprofessional socialisation, may acquire such capability. The socialisation process may also influence the construction of students' identity as health workers.

## **2.6 Interprofessional socialisation, identity and capability**

In this chapter, the impact of the socialisation process on students' professional identity will be discussed, before considering how other fellow students may influence this process. Then an outline of the development of professional identity as health worker will be presented, followed by a description of the capability that enables students and health workers to collaborate interprofessionally.

### **2.6.1 Professional socialisation and interaction in reference groups**

Socialisation is, according to Hoëm (1978:13), a requirement for the implementation of the phenomenon called culture. At the same time, the existence of this becomes the content of the socialisation. According to both traditional and modern comprehension, socialisation involves transfer of cultures from one generation to another (Bourdieu in Callewaert 1992:116). This presupposes that professional educational can inculcate<sup>45</sup> significance<sup>46</sup>, which is legitimate<sup>47</sup>.

Professional socialisation refers to the process whereby a person acquires knowledge, skills, values and norms necessary for competent practice in a chosen profession (Lum 1988:264). During their professional education students are socialised into the values and attitudes on which their professions rest, embodied in the educational programme, its content and design

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<sup>44</sup> Cheetham & Chivers (2005:47) emphasise that capability is indicated by academic achievement, while competence is indicated by work based performance.

<sup>45</sup> Inculcate is a concept normally not been applied in the North European language and could appear provoking because educating is normally seen as an activity for pupils/students, with adaptation for learning and not communication/transfer of knowledge. Bourdieu's intention by using the concept inculcation is to include both education and learning. He is not concerned of how learning occurs among the pupils and students. However, the author is engaged on which cultural impact learning has for the one who is subjected to the process of learning (Bourdieu in Tarrou 1995:155 ff).

<sup>46</sup> The meaning of this is what is significant as a case or a case relation to those who experience it, evaluate it and act practical with it (Callewaert 1992:118).

<sup>47</sup> This can be interpreted as imposition of importance, or more exactly, imposition of importance being legitimately (Bourdieu in Callewaert 1992:116).

(Waugaman 1994:27). The student's professional identity<sup>48</sup> develops in face-to-face interaction with co-students and teachers. To make the students conscious of the differences between their own group and other student groups, derived from comparisons with other groups, which are present in the social environment, is important, accordingly to Tajfel (1981:331). Therefore, interacting with students with contrasting identities during the socialisation process may be vital for the students to develop their professional identity.

Self-categorisation refers to the process by which people define their self-concept in terms of their memberships of various social groups (Chatman et al. 1998:750). The basis for such a categorisation, Dickerson (2000:381) asserts, is one's perceptions of similarities and differences with others. However, this can be determined by the situation, because the individual's understanding will depend on who is being present and the feedback the actor receives from others present. So, as argued in this thesis, students categorise themselves in relation to persons present and their identities develop in interaction with those others.

Because one's position in the society is defined in relation to others, the person's view of their own identity will depend on with which groups they are comparing themselves with. Different sorts of reference groups are identified in the literature. A *normative* group provides an individual with a guide to action by explicitly setting norms and values. The group makes its expectations known, and assumes that the person will comply with these norm and values (Lum 1988:259). The group's function is based upon the degree of the member's conformity to certain standards of behaviour or attitude. A feeling of similarity will characterise this kind of reference group. The group can consist of people with corresponding or identical views of cultural legitimacy, for example students from the same profession. In this way, group belonging promotes the construction of identity even within the individual.

A *comparison* group is a reference group that provides a person with standards or comparison points that one can use to make judgements and evaluations. Such a group gives insight into different patterns of action in situations characterised by either collaboration or competition.

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<sup>48</sup> As Fagermoen (1995:25) expresses, professional identity serves as a basic frame of reference for deliberation and enactment.

### **2.6.2 Practising interprofessionally as prospective health workers**

Interprofessional socialisation, says Waugaman (1994:28), holds the promises to improve students' capability to collaborate. This implies interaction with close face-to-face relations between students from several comparison reference groups with different jurisdiction. Therefore, students may be introduced to various approaches to problems in health care and are given alternative ways to act. In such situations, the students' interprofessional praxis and capability to collaborate may be improved. However, according to Wackerhausen (2002:77), this is not something to be learned like anatomy or physiology, but something to be *absorbed* within one self. Therefore, to let the students practice interprofessionally in relation to the coming occupational role requires both a theoretical and a practical approach<sup>49</sup> with focus on skills and strategy for collaborate interprofessional, including *theoria*, *praxis* and *phronesis*.

A community of practice has a common domain of capability which contributes to identity development, Just (2005:46) argues. When Wackerhausen (2002:75) emphasises that the professional identity is formed and stabilised through the individuals' situated participation in practice, raises the question whether practising in hospital wards gives students a better insight into their own and of others' professional capability.

### **2.6.3 Capability to collaborate across boundaries**

Ability to collaborate is emphasised by the WHO as a foundation for interprofessional capability. Characteristics of the learning processes when developing interprofessional capability among students are:

- adaptability, the ability of the team<sup>50</sup> as a whole to solve problem and to react flexibly to changing environmental demands and to incorporate different professions;
- a sense of identity, based on knowledge and insight of what the team is and what it is there to do, and on a personal commitment by each member to the common goal;
- the ability to discover, perceive accurately and interpret correctly those properties of the environment that are relevant to the purposeful functioning of the team (WHO 1988:8)

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<sup>49</sup> Bourdieu emphasis the condition between theory and practice and has made the foundation to cross the sharp lines that can be seen between theory and practice based understanding of learning (Bourdieu in Tarrou 1997:78). Theory of practice can be seen as both theory about practice and as theory about knowledge, about how one is developing theory in this practice (Petersen 1999:34).

<sup>50</sup> All teamwork is collaboration, but all collaboration is not teamwork (Barr et al. 2005:4-5). Collaboration may involve a wider range of practitioners and includes also collaboration between organisations, between practice settings and between sectors. Collaboration is about relationships, and implies normally some conscious interaction between participants to achieve a common goal (Mead & Ashcroft 2005:16).

Collaborative competencies<sup>51</sup>, Barr (1998:185) points out, need to be formulated for each dimension and may include describing one's role and responsibilities clearly to other professions. Ambiguity and uncertainty<sup>52</sup> characterise working groups in general, but perhaps especially in interprofessional relations. Interaction is the domain in which meanings is produced. Understanding and knowledge arise from the mutual involvement of participants in particular situations and their negotiations (Layder 1994:174). By interaction and dialogue, one has a sort of understanding of the situation of which one is part, i.e. phronesis and theoria, and how one and other participants should act. This includes how to handle uncertainty and ambiguity and could be the basis for development of qualified, practical capability, which is founded on rules that are vague and ambiguous.

Gordon and Walsh (2005:29) and Walsh et al. (2005:234) distinguish between four domains of capability connected to interprofessionalism<sup>53</sup>:

- *Knowledge in practice* which focuses on awareness of professional regulations of other professions in the interprofessional group, the structures, functions and processes of the group. It is an integrated understanding or insight in the legal frameworks and statutory and regulatory requirements of the professions that make up a practice team. Knowledge in practice includes an integrated understanding of the professional roles of all group members.
- *Ethical practice* draws attention to the promotion of patient participation in decision-making processes of the interprofessional group; the need for professionals to be sensitive both to the demands made in law and underpinning 'ethos' of different professions.

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<sup>51</sup> Collaborative skills, competence or capability are not peculiar to interprofessional work. Barr et al. (2005:84-85) identified competence needed to collaborative interprofessionally practice (not exhaustive): Cooperating and communication between professions, recognising and observing the constraints of one's roles, responsibilities and competence, and yet perceiving needs in a wider context, managing confidentiality between professions and between agencies, negotiating working agreements with other professions and agencies, contribution to the development and knowledge of other professions, describing one's roles and responsibilities clearly to other professions, recognising and respect the roles, responsibilities and competence of other professions in relation to one's own, knowing when, where and how to involve these others through agreed channels, and tolerating differences, misunderstandings, ambiguities, shortcoming and unilateral change in another profession

<sup>52</sup> Elementary practical knowledge can be ruled of strict rules and this kind of knowledge is passed on as directions and in formations that will cover the situations arising. Qualified practical knowledge, on the other hand, are built on rules being vague, almost not formulated, and ambiguous and must be adapted to the situation, something that can be characterised as interprofessional capability.

<sup>53</sup> In addition to the described domains, health workers must have the ability to express themselves verbally. Communication, Engel stresses (1994:71), underpins and permeates the entire construction of capability for the collaboration in a group. Students need to have knowledge of group dynamics and how interaction happens in a group (and changes over time). This includes insight into how the individual behaves in interaction with other members of the group, with reference to Aristotle, through praxis. Rules for collaboration might be expressed as theoria. Energeia concerns the development of performance ability, an improvement through practice. Members of interprofessional groups are assumed to have ability to reflect and analyse alternative courses of action. At the same time, they are expected to be able to make reasonable judgments of the situation, a sort of phronesis.



- *Interprofessional working* captures participation, patient-centred assessment and communication strategies. It also identifies co-mentoring activities across professions and the importance of this aspect of work to successful interprofessional collaboration.
- *Reflection* focuses on its importance as an aspect of contemporary practice and identifies the developments of reciprocity across professions, the utilisation of evidence based practice and an integration of continuous professional development. This domain captures reflection in relation to the development of one's own role.

Knowledge in practice is understanding and insight, and maybe linked to Aristotle's *theoria*, while interprofessional working presupposes active participation in the community of practice and improves *praxis*<sub>1</sub>; i.e. practising and training. Through reflection in an interprofessional learning process, students have possibilities to create *phronesis*. According to Aristotle (Eikeland 2006b:23), the ethical virtue is concerned with the formation of *ethos* through becoming habituated. On the other hand, he underlines that it is not about external theory, but a preparedness of action, a disposition to act ethical correct, based on experience, attitudes, insight, understanding and competence. The ethical virtue requires the perfection, through practice and habituation, and therefore ethical practice improves both *praxis*<sub>2</sub> and *phronesis*. *Empeiria* and *energeia* can in his way express the capability that the coming health worker is expected to master – for the good of the patient.

So, in this study, interprofessional capability is considered to be developed and internalised in the students themselves and includes *theoria*, *phronesis* and *praxis*. I presume that students' interprofessional capability may have an impact on students' perceptions of characteristics of their own and of other professions. Accordingly, I assume that to the degree which students comprehend their future professional identity as health workers may influence their perception of interprofessionalism.

In order to complement the description of interprofessional education, in the next chapter I present earlier research findings linked to the foci in this study.

## **2.7 Interprofessional education and research**

Competing 'agendas' about the aims of interprofessional education can be seen (Barr 1994a:4). For some stakeholders, this effects economies of scale with large classes with

common curricula<sup>54</sup> and can be seen as multiprofessional education (as a second stage of the development of professional education, see figure 1). Another agenda is the improvement of collaboration in practice, leading toward better care and treatment; objectives that can be seen associated with interprofessional education. For others it calls for permeability between professions, with one substitution for another, or being the agenda for trans or pan-professional education.

Research shows that interprofessional education at undergraduate level can change attitudes and increase understanding about the roles of other health care professions (Barr et al. 2005). Freeth et al. (2002), however, reveal that there are many weaknesses in the knowledge of the outcomes of interprofessional education, due to for example a lack of good quality study designs for evaluating the outcomes<sup>55</sup>.

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<sup>54</sup> As Horder (1995:148) argues, the attraction to government and the managers to have interprofessional education or pan-professional education, concerning economy is obvious. However, educationalists and professional practitioners must ensure that it does not become a sacred cow slaughtered at the altar of political expediency.

<sup>55</sup> Examining a Cochran review of 10495 evaluations of interprofessional education, Barr et al. (2005) found 353 studies from 1966 to 2003 that offered insight into the outcome of interprofessional education. With an inclusion criteria that the interprofessional activities being defined as *members (or students) of two or more professions associated with health or social care engaged in learning with, from and about each other* (Barr et al. 2005:43), 107 studies were characterised to be of a higher quality. A diversity of outcomes from interprofessional education is expected. To understand the outcomes of interprofessional education, Barr et al. (2005:45) adopt a six-point typology derived from Kirkpatrick (1967):

- Level 1. Reaction (learner's view on the learning experience and its interprofessional nature)
- Level 2a. Modification of attitudes/perceptions (changes between participant groups, changes towards the value and/or use of group approaches to caring for a specific client group)
- Level 2b. Acquisition of knowledge/skills (linked to interprofessional collaboration)
- Level 3. Behaviour change (transfer of interprofessional learning to practice)
- Level 4a. Change in organisational practice (organisation and delivery of care)
- Level 4b. Benefits to patients/clients (improvement in health or wellbeing)

Examples at level 1, Barr et al. (2005) found, after analysing 107 studies about interprofessional education, the following reactions towards interprofessional education: enjoying interprofessional experience, e.g. Thompson et al. (2000); Doyle et al. (2003), learning satisfaction e.g. Milne et al. (2000) and Taylor et al. (2001), and rating the educational experience e.g. Jones & Salmon (2001). Outcomes at level 2a show: changes in attitudes or perceptions towards other professional groups, e.g. Carpenter 1995b, Reeves 2000, Mires et al., 2001, about working in groups, e.g. Barber et al. 1997, Lacey 1998, and towards working with other professions, e.g. Mohr et al. 2002. At level 2b, it was reported changes in knowledge or skills and included: enhanced understanding of roles and responsibility of other health and social care professionals, e.g. Fallsberg & Wijma 1999, Farrell et al. 2001, Alderson et al. 2002, improved knowledge of the nature of multidisciplinary teamwork, e.g. Roberts et al. 2000, Reeves & Freeth 2002, and development of collaborative skills, e.g. Schreiber et al. 2002. Studies that reported level 3 behaviour changes, focused on assessments of interprofessional cooperation and communication, or development of closer links between professions, e.g. Milne et al. 2000, Taylor et al. 2001, Morey et al. 2002, Way et al. 2002, Cornish et al. 2003. The outcomes at level 4a reported changes in organisational practice that included: referral practice, e.g. Walsh et al. 1995, Taylor et al., 2001, inter-organisational working patterns e.g. Baker et al. 1995, Roberts et al. 2000, documentation of patients record e.g. Brown 2000, Dalton et al. 2001, and reduced costs e.g. Pilon et al. 1997, Overdyk et al. 1998. Studies that reported changes to patient/client care (level 4b) found changes around clinical outcomes, such as: infection rates, Horbar et al. 2001, clinical error rates, Heckman et al. 1998, Morey et al. 2002, patient satisfaction, e.g.

One aim of this study is to offer insight in the implementation process of a common core in the curricula for health programme and to compare perception of interprofessionalism among: 1) students from various professions, 2) students from one discipline and different institutions, 3) students with modified and unmodified curricula, 4) students attending uniprofessional or interprofessional education and 5) students participating in different duration of interprofessional education.

A pilot study of an ‘interprofessional ward’ at the Royal London Hospital showed that students, facilitators and patients were all positive about their involvement in the training ward (Reeves et al. 2002). Pollard et al. (2005) found, however, that even if most of the prequalification students were positive about their own interprofessional relationships, there was a negative shift in students’ attitude toward interprofessional learning and interprofessional interaction. On the other hand, Norman (2005:122) says, that there is little evidence about the lasting effects, if any, of undergraduate interprofessional education and little is known of the educational processes during interprofessional education *that affect learning outcomes*.

The other part of the empirical study describes students’ perceptions of their own and of the other professions’ capability, among students attending various dimensions of interprofessional education. Carpenter (1995b) in his study, reported the effects of a college-based interprofessional education programme for medical, nursing and social worker students. The inquiry measured positive changes in attitudes and self-reported knowledge about the roles of other health professions, before and after the intervention of interprofessional education. With a similar research design, Parsell et al. (1998) found evidence that after attending a two-day pilot interprofessional college-based workshop, students from various professions, increased their understanding of other health professions.

Correspondingly, among third-year medical students, Mires et al. (2001) reported an improved understanding of the professional roles of doctors and midwives. These attitude changes were maintained and enhanced when the students followed workplace-based interprofessional activities later in the educational programme. A follow-up research by

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Brown 2000, Treadwell et al. 2002 and length of patient stay, e.g. Adamowski et al. 1993, Price et al. 1999, Gazarian et al. 2001.

Reeves and Freeth (2002:50) showed that OT, PT, nursing and medical students, one year after their placement in hospital, the students expressed that their experience in the training ward provided an insight into other professions' role. Similarly, evidence found by Fallsberg and Wijma (1999) shows that participating in a two-week interprofessional course at a training ward, had given students from six professions an understanding of the skills of other health professions.

Interprofessional training in the context of clinical practice provided students with a good opportunity to develop their own professional roles and learn about the other professions, was found by Ponzer et al. (2004), and Gordon (2006). Evaluating an one-day post-qualifying workshop about breaking bad news, Farrell et al. (2001) found that the participants, mainly nurses and medical doctors, gained new insight providing clarity about the purpose and value of the role and contribution of other professionals. In contrast, Reeves (2000) found that during an evaluation of dental, medical and nursing students, attending a community-based placement, the interprofessional education did not 'dilute' the students' early stereotypical ideas.

This thesis focuses on the introduction of a common core in curricula for health care students and different dimensions of interprofessional education. One question is whether or not a common core was sufficient to improve students' awareness of interprofessionalism. Another focus is how different dimensions of interprofessional education influence students' knowledge of their own and of others' capability.

To underlie the interprofessional educational work when designing and delivering interprofessional initiative, an assessment of various theoretical approaches towards interprofessionalism is an assumption. Correspondingly, theoretical considerations have to be accomplished when doing research within the concept interprofessional education and the implication of such activities. In the next chapter, I will look upon some theoretical approaches found in the literature.

## **2.8 Theoretical perspectives on interprofessional education**

Varied and distinctive perspectives to illuminate interprofessional education have emerged.

Barr et al. (2005:122) distinguish between three theoretical perspectives, all connected to the different cogs in figure 2, focusing on:

- preparing individuals for collaborative practice
- cultivating collaboration in groups
- improving services and the quality of care

Within theories concerning preparing individuals for collaborative practice, perspectives from social psychology, as adult learning, contact hypothesis, social identity, self-categorisation, perspectives from dynamic psychology, like social defence theory, loss and change, and perspectives from sociology e.g. practice theory, self-presentation theory, negotiation theory are central. Theories concerning cultivating collaboration in groups include work-group mentality, group development and group learning, while theories that deal with improving services and the quality of care involve system theory, the learning organisation and activity theory. In a review of 107 studies, Barr et al. (2005:121) found that the underpinning theory included learning organisation, adult learning and contact theory.

My impression is that most of the described theories miss the outer contextual structures. For development of interprofessional capability and identity as health workers, some structural preconditions<sup>56</sup>, as well as individual and relational aspects, have to be considered. It seems to be more appropriate to interpret both the objective structures, i.e. the frame conditions, and the subjective process, e.g. the interactions, in order to reach an insight in and an overview of the field of interprofessionalism. In my explorative study I have been searching for a more comprehensive theory; a theory containing robust concepts which are precisely defined and include several dimensions, both structural and individual. I found that the French sociologist Pierre Bourdieu links the micro and the macro system. With different concepts he has attempted to connect objective and subjective<sup>57</sup> aspects of the social life. Bourdieu has a

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<sup>56</sup> In this connection, structural preconditions can have institutional and organisational dimensions.

<sup>57</sup> In his theory of practice, Bourdieu attempts to go beyond the dichotomy subjectivity/objectivity. Subjectivity refers to individual knowledge; it is personal, partly intuitive, affective, and may not have any direct relevance outside of the person who holds it, while objectivity refers to knowledge without a knowing subject. It transcends the individual and has general applicability (Bourdieu in Grenfell & James 1998:10). Objectivism Bourdieu alludes to can be seen in the terms of relations between individual (subjectivities) and object phenomena (Grenfell & James 1998:13). Bourdieu's intention is to find a theory which was robust to be objective and generalisable and that accounts for individual subjective thought and action. Not only should the theory explain the logic of social activities, including education, but also the practice of research into such activities. In Bourdieu's theory of practice, social agents are incorporated bodies who are possessed by structural schemes which operate by orientating social practice. There is a continual dialectic between objectivity and

holistic approach and his theory includes the socialisation process and an understanding of the process in the educational system.

In the Nordic countries, Bourdieu's theories have been adopted by, for example, Tarrou (1995), Heyman (1995) and Petersen (1999), doing research within the field of education and nursing. By calling upon Bourdieu's theory about the educational system, a theoretical insight into the implications of introducing a common core in health care education and how interprofessional education relates to the students' interprofessional identity and capability will be reviewed.

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subjectivity. Bourdieu is arguing that objectivity can only be revealed in the nature of individuals' practice. Objective structures are not simply inculcated as a reflection of material relations. Human sense activity as social products arises historically in time but is revealed in individual action.

### 3. Bourdieu's theory of education

In chapter 2 health care and interprofessional education were outlined. In this chapter interprofessional education will be approached and scrutinised armed with the conceptual frame work and methods found in Pierre Bourdieu's work<sup>58</sup>. I will present Bourdieu, and his theory of the educational system.

It is impossible to place Bourdieu in any of the various pigeonholes of traditions in sociology, according to Rosenlund (2000:27). Some claim Bourdieu to be a Marxist. Others feel that Weber has inspired some of his work. Yet others see clear parallels with Durkheim. Bourdieu (1989:14) refers to his method and approach as 'constructivist structuralism' or 'structural constructivism'. By structuralism, he sees, that there exist, within the social world itself and not only within symbolic system (language, myths, etc.), objective structures independent of the consciousness and will of the agents<sup>59</sup>, which are capable of guiding and constraining their practises. By constructivist, Bourdieu asserts that there is a twofold social genesis, on the one hand, of schemes of perceptions, thought and action (or habitus) and, on the other hand, of fields and of groups. However, according to Callewaert (2006), Bourdieu in the later years of his life was oriented towards critical realism<sup>60</sup>.

Bourdieu tries to bridge the gap between action and structure within social science. He has done this by introducing a set of concepts and methodological approximations that are able to dissolve this separation (Bourdieu & Wacquant 1992:3). Before the presentation of the main feature in Bourdieu's theory about the educational system in relation to interprofessional education, the central concepts on which this theory is based on will be reviewed. These concepts will be discussed in the light of earlier described concepts (gnosis, capability, identity and socialisation).

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<sup>58</sup> Anne-Lise Høstmark Tarrou's thesis *Comparative analyses of two occupational cultures within section of craft and industry in the Norwegian upper, secondary school* (the author's translation), has been a model when organising my own thesis. This is done because I found my own study analogous with Tarrou's research.

<sup>59</sup> A person or group of people acting.

<sup>60</sup> Grenfell & James (1998:162) emphasis Bourdieu's approach as grounded on a quasi-phenomenological understanding of the relationship between the subject and the object, methodologically expressed in terms of habitus and the field, in which objects are located or 'positioned' according to the identifiable principles.

### **3.1 Professional competence as cultural capital**

Bourdieu uses symbolic capital<sup>61</sup> as a superior concept and distinguishes between three fundamental aspects<sup>62</sup>; social capital<sup>63</sup>, cultural capital and economic capital<sup>64</sup> (Bourdieu & Wacquant 1992:119). Symbolic capital, as Broady (1989:2) argues, can in a compressed definition, have a reference to what can be recognised or what can be acknowledged. It is connected to culture and social action and is a result of our social experience. To own symbolic capital means to own symbolic values and behaviour as style, language and acting. It is something a group or a profession sees as valuable, as professional value, skills and attitudes being acknowledged as praiseworthy, respectability and truth worthy.

Cultural capital plays a central role in most of Bourdieu's analyses and is a sort of symbolic capital, which dominates society where the art of writing is valued (Broady 1990:173). This capital is the product of education, which Bourdieu often refers to as an 'academic market', and exists in three distinct forms connected to: 1) individuals (embodied) in their general educated character – accent, dispositions, learning etc., 2) objects (objectified) – books, qualifications, machines, dictionaries etc. and 3) institutions (institutionalised)<sup>65</sup> – place of learning, universities, libraries etc. (Bourdieu 1986b:243).

Incorporated cultural capital can be regarded as acquirement of capability and gnosis, embodied in the individual, and implies the ability to handle the dominating capital, to have the ability to talk and to move within the community, where the dominant culture is

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<sup>61</sup> Capital is *social relations, an energy which only exists and only produces its effects in a field where it is produced and reproduced and deriving its value and efficacy by the specific laws of each field* (Bourdieu 1986a:113). Capital takes time to accumulate and contains a tendency to persist in its being, and is a force inscribed in the objectivity of things so that everything is not equally possible or impossible (Bourdieu 1986b:241). As Halvorsen (1995:14) expresses, with Bourdieu's capital expression, we can talk of an aggregation of cultural, economic, social and political capital.

<sup>62</sup> The different forms of capital are not independent of each other. One form of capital can be exchange for another. For example cultural capital can be transmitted into economic capital on certain conditions and may be institutionalised in the form of educational qualifications (Bourdieu 1986b:243).

<sup>63</sup> Social capital consists of capital in the form of social relations and is the sum of the resources that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalised relationship of mutual acquaintance and recognition (Bourdieu & Wacquant 1992:119). Or, as Grenfell and James (1998:21) express it, social capital exists as a *network of lasting social relations*; in other words, an individual's or individual group's sphere of contacts.

<sup>64</sup> Economic capital is hardly original to Bourdieu and consists of access to economic values, money or other values that can be converted into money, property valuables etc. (Rosenlund 2000:40). This kind of capital comprises the agents' economic belongings and their knowledge of the economical rules of the game (Koudahl 2004:69).

<sup>65</sup> A form of objectification which must be set apart, because, as will be seen in the case of educational qualifications, it confers entirely original properties on the cultural capital, which it is presumed to guarantee (Bourdieu 1986b:243).



performed and appreciated. This form of capital can be acquired to a varying extent, in the absence of any deliberate inculcation and therefore quite unconsciously (Bourdieu 1986b:245) and covers the whole period of *socialisation*, which includes the educational system. Cultural capital *in the objectified state has a number of properties which are defined only in the relationship with cultural capital in its embodied form* (Bourdieu 1986b:246) and is transmissible in its materiality. The institutionalised cultural capital appears, for example as educational titles, which give certification for having the specified competence or capability. Thus comparison between qualification holders is possible. Petersen (1999:48) also underlines that different professions have their own culture and their own cultural capital. To act and think as a health worker applies as symbolic capital within a health profession, like doctor, nurse etc.

Differences in educational systems will give various cultures; this means that different educational programmes, as well as institutions, will have variable cultures and cultural capitals. Therefore the educational system will be central because it fills an apparently active function with regards to communication, gives possibilities and identifies culture. So, in this thesis, professional capability is regarded as a part of students' embodied professional cultural capital, including interprofessional capability, and is more or less expressed and exposed in various professional programmes and institutions.

### **3.2 The concept of field**

A social 'field', in Bourdieu's meaning, as Broady (1990:275) explains, is in general a constructed system of relations between positions, and these positions can correspond for instance to the institutions. The condition is that there exist specialists, institutions and a recognised hierarchy of values, who demand a relative autonomy by specialised agents and institutions struggling about something they have in common.

Bourdieu points out that:

*These positions are objectively defined, in their existence and in the determinations they impose upon occupants, agents or institutions, by their present and potential situation (situs) in the structure of the distribution of species of power (or capital) whose possession commands access to the specific profits that are at stake in the field, as well as their objective relation to other positions (domination, subordination, homology, etc.)* (Bourdieu & Wacquant 1992:98).

The field, say Bourdieu & Wacquant (1992:103), is the place of relations of force and of struggles, aimed at transforming it, and therefore of endless changes. In effect, field is a space of conflict and competition where the power relations between groups are tested and the agents compete to win the rights for a special type of capital (Bourdieu & Wacquant 1992:101) and at each moment it is the state of the relations of force between players that defines the structure of the field (Bourdieu & Wacquant 1992:99). As Heyman (1995:24) emphasises, all fields have their dominating and dominated (newcomer), their conservative and their avant-garde, and their reproductive mechanisms.

The field appears as a room of positions and each position, or agent, has properties that depend on places being occupied in this room and can be analysed independently from each of the holders of characteristic, at the same time that they can be determined from this (Petersen 1999:5). To think in term of field is to think rationally, Bourdieu emphasises (Bourdieu & Wacquant 1992:96). One can see the social world as objective relations existing independently from individual's consciousness and wishes.

The principle of the dynamics of a field lies in the form of its structure and in the distance, the gaps and the asymmetries between the various forces that confront one another. The forces that are active in the field are those that define the specific capital, i.e. the capital of health care and its belonging educations. A capital does not exist and function except in relation to a field. It confers a power over the field, over the materialised or embodied instruments of production or reproduction whose distribution constitutes the very structure of the field, and over the regularities and the rules which define the functioning of the field, and thus over the profits engendered in it (Bourdieu & Wacquant 1992:101).

The concept of field can be used as a tool in research and as an analytic term. A field<sup>66</sup> may be defined as a network, or a configuration of objective relations between positions (Bourdieu & Wacquant 1992:96). The understanding of the concept of field implies, in Bourdieu's context, to construct the system of relations that bind positions together (Broady 1990:271). This includes to distinguish the dominating positions from the dominated positions, to separate between qualities connected to various positions, to map different sorts of investigations and achievements which have been required from agents and strategies being at the disposal of the agents. It is to explore the agents' system of dispositions, to determine the field's relations to other fields etc. Therefore the concept of field<sup>67</sup> is an open concept, almost like a research programme.

The educational system, the state, the church, political parties and trade unions are all fields, where agents and institutions struggle with various degrees of strength and therefore diverse probabilities of success, to the products of stake in the game (Bourdieu & Wacquant 1992:102). Correspondingly, Grenfell & James (1998:20) claim that education is a field, made up of interconnecting relations and primary, secondary and higher education might be regarded as subfields.

Each subfield has its own orthodoxy, its own ways of doing things, rules, assumptions and beliefs. Tarrou (1995:72) sees an educational field concerning human beings which are disposed in a special way (for example students and teachers with different pre-understanding), the specific investment being required for newcomers (i.e. capability as an admission ticket for a position), special achievement in the game (acting in the learning process), special symbolic profits (status as a health care student/teacher) and something in

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<sup>66</sup> The construction of the concept 'profession' has its critics. Bourdieu (Bourdieu & Wacquant 1992:242-243) emphasises that:

*The notion of profession is all the more dangerous because it has, ... all the appearances of neutrality in its favour...Profession is a folk concept which has been uncritically smuggled into scientific language and which imports into it a whole social unconscious...This is why this 'concept' works so well, or too well in a way....The category of profession refers to realities that are, in a sense, 'too real' to be true, since it grasps at once a mental category and a social category, socially produced only by superseding or obliterating all kinds of economic, social and ethnic differences and contradictions which make the 'profession' of 'lawyer', for instance, a space of competition and struggle.*

Bourdieu suggests the use of the concept of 'field' instead of profession, because a field can be seen as a structured space of forces and struggles into which individuals enter (Bourdieu & Wacquant 1992:242). The outcome of this encounter, both for the profession and the professionalisation of the individual, is the interaction between them.

<sup>67</sup> We can compare a field to a game, although a field is not the product of a deliberate act of creation, and it follows rules, or regularities that are not explicit and codified. We have stakes which are for the most part the product of the competition between players and the players agree that the game is worth playing (Bourdieu & Wacquant 1992:98).

common be at stake for the participants in the field (development of necessary professional capability).

As a field connects with other fields, health care programmes have relations to the field of the health care, the political field, fields of unions etc. Viewed thus, the educational field of health professions, with teachers and students from different professions, can be interpreted as a subfield. In this subfield, agents with different strength struggle to dominate the cultural capital being legitimate to impose on the health care students.

A particular person<sup>68</sup>, a group or an institution can belong to more than one field (Tarrow 1995:73). Simultaneous as teachers and students are connected to a health profession, they represent several professions. A special challenge is to create arenas for learning that give favourable conditions for interprofessional education, acquiring collaborative cultural capital. Educationalists who are involved in delivering the programme should have the appropriate expertise in facilitating interprofessional groups. The teachers in this field, however, are deeply rooted in the different professions, while the students are expected to find identities that enable them to handle the challenges in the welfare state.

Students exist in the social place, shaped by relations between groups of students and teachers. Structures in the social place are created by frames from element of capital in addition to relations between agents; interaction between students and student/teacher. The outcome of the education is not simply a product of the field structure, but also depends on what the individuals bring into it, their backgrounds, schemes of thinking and dispositions (Grenfell & James 1998:167). The educational course structure and the individual student, the interaction between the agents and the interaction between field and habitus will influence how the individual students will think and act, i.e. their professional cultural capital, including an interprofessional capability.

In this thesis, health care educational studies are a subfield of the educational field, and interprofessional education exists as part of this subfield. The agents from various professions, like teachers, stakeholders and directors of studies, struggle to determine the

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<sup>68</sup> We may think of a field as a space where an effect of field is exercised, so that what happens to any object that traverses this space, cannot be explained solely by the intrinsic properties of the object in question (Bourdieu & Wacquant 1992:100).

cultural capital dominating the field. Therefore, the relations between the positions in the field decide the implementing of the common core in the modified curricula, and whether or not, or in what degree, interprofessional education has to be established.

### **3.3 The concept of habitus**

Bourdieu has given the old concept habitus a certain meaning and is understood as:

*a system of durable and transposable dispositions which, integrating all past experience, functions as a matrix of perceptions, of appreciations and actions* (Bourdieu 1973:67).

Habitus is, according to Bourdieu, a system of dispositions<sup>69</sup> that is found in the socially constituted system of structured and structuring dispositions acquired in practice (Bourdieu & Wacquant 1992:121). Bourdieu underlines further in a later elucidation of habitus<sup>70</sup>, that:

*The structures constitutive of a particular type of environment (e.g. the material conditions of existence characteristic of a class condition) produce habitus, systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures* (Bourdieu 1977:72).

Habitus expresses the result of an organising action, in one meaning close to the concept of ‘structure’. Habitus is an acquired system of generative schemes<sup>71</sup>, objectively adjusted to the particular conditions in which it is constituted and engenders all the thoughts, all the perceptions, and all the actions consistent with them (Bourdieu 1977:95). The concept of habitus derives from *an effort to create a methodological construct that will give sufficient representation to the dynamic of structure in social reality as expressed through human knowledge and action*, according to Grenfell & James (1998:14). The authors emphasise that structure mediates between objectivity and subjectivity, and that structure can be seen as the heart of the concept of habitus. It can also denote a manner of being, a habitual state, and a

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<sup>69</sup> Dispositions are tendencies that together are shaping a person’s habitus. In a foot note from Bourdieu (1977:214) seems the word *disposition* particularly to be suited to express what is covered by the concept of habitus (defined as a system of dispositions). It expresses first the *result of an organising action*, with a meaning close to that of words such as structure; it also designates a *way of being*, a *habitual state* (especially of the body) and, in particular, a *predisposition, tendency, propensity, or inclination*.

<sup>70</sup> In *Reproduction* (1977), habitus is more formally developed as a medium of inculcation and production of the cultural arbitrary (Bourdieu in Grenfell & James 1998:15).

<sup>71</sup> Eysenck & Keane (2000:262) state that schema is a structured cluster of concepts; usually it involves generic knowledge, and it may be used to represent events, sequences of events, precepts, relations and even objects. Wackerhausen (2002:54) underlines that schemes are often seen as the inner mental structures which structure the perceptions of and attribution to (relative allied) events, situations and reaction etc. Every person has a number of schemes. The author underlines that dispositions are linked to schemes and habitus.

predisposition, tendency, propensity or inclination. Or, as Broady (1990:228) puts it, habitus is allowing individuals to act, think and become orientated in the social world. This is the meaning I understand Bourdieu seeks to emphasise.

So habitus functions as a matrix of perceptions, of appreciations and is a product of our social experiences and the objective requirements, an embedded disposition for human beings to act in a specific way. The positions are acquired, not something one is born with, and are products of history and socially situated conditions of its production. Bourdieu points out that the assumption of imagination of individuals and that action will be related to the collective in conception and social decisions.

Talking about habitus, Bourdieu is doing this, both individually and collectively (Tønnessen 2003:36). It is therefore possible to talk about a group habitus. The students can be collectivised by the socialisation, and the concept habitus will almost be the intention of action or be in deep structure<sup>72</sup> (Wacquant 1992:18-19). However, as Bourdieu expresses, the systems are collective and orchestrated; without being a product of the orchestrating action of a conductor (Bourdieu 1977:72)<sup>73</sup>. As I understand Bourdieu, one develops and incorporates habitus from the person you are. In this way, students entering the field of health care education with a former habitus and will not leave the field with a homologous habitus.

The condition between objective structures and subjective processes constitute the framework for human behaviour, or practice<sup>74</sup> – using Bourdieu's expression. Therefore, habitus constitutes a social constructed<sup>75</sup> system acquired in practice and constantly aimed at practical

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<sup>72</sup> To speak of habitus is to assert that the individual, and the personal, the subjective, is social collective. Habitus is a socialised subjectivity (Bourdieu & Wacquant 1992:126).

<sup>73</sup> One of the fundamental effect of the orchestration of habitus is the production and a commonsense world endowed with the objectivity secured by consensus on the meaning of practice and the world, in other words the harmonisation of agents' experience and the continuing reinforcement that each of them receives from the expression, individual or collective, improvised or programmed of similar or identical experiences. The homogeneity of habitus causes practices and works to be immediately intelligible and foreseeable, and hence taken for granted (Bourdieu 1977:80).

<sup>74</sup> The methodical approximation to acquire 'praxis' is 1) perfect one-self through practice and 2) dialogue with articulation, linguistic – and consciousness and interpretation. If something to be applied in the praxis itself, this must be the ability or skill, but not as external instrument or pure method. Aristotle underlines that action, performance or doing is praxis; subject or fact is pragma. Pragma may represent the practised skills or capability – or the interprofessional capability being crystallised and a result of practice, as an identity, hexis or habitus.

<sup>75</sup> Corresponding Bloor claims in the 'Strong programme' that scientific knowledge is not discovered, but socially constructed (Bloor 1999).

functions (Bourdieu & Wacquant 1992:121), and a product of education<sup>76</sup> (Bourdieu & Callewaert 1992:115). Habitus is the result of the human incorporation in different kinds of capital through schooling and education. It is a system of dispositions, which will result or incorporate through a bodily learning process, being mostly an implicit process (Bourdieu & Callewaert 1992:137). In this way, habitus is a system of disposition acquired also within a training period (Petersen 1999:8) and a product of the socialisation process in an educational system. Viewed thus, identity and professional identity are therefore embodied part of human beings' habitus.

Since habitus is constantly aimed at practical functions, the form of the practice, and therefore the way the practice takes place, will decide which social meaning participation in the practice has for the students. One's formation of professional habitus depends on relevance; if the students experience that the learning corresponds with reality, for example that the interprofessional learning is organised in the field of practice, or community of practice (Wenger 1998). One will experience habitus from those who possess and show it, in the shape of socialising agents, like teachers and mentors in a learning situation.

Even if habitus expresses something lasting, it is not constant. Habitus allows us to take into account the constancy of dispositions, tastes, preferences (Bourdieu & Wacquant 1992:131). The process is irreversible, because all stimuli and experience will be viewed in the light of an earlier experience (Bourdieu & Wacquant 1992:133) and from that comprehension, habitus will change, but something can be recognisable and creates continuity.

Habitus is, Tarrou (1995:71) emphasises, something that the human being has achieved and possessed, and in some connections may function as cultural capital, for example a sort of *energeia* and *empeira*. What is defined as professional cultural capital will, in this way, be decided in the social field that habitus is a part of. Since habitus is a product of the vital necessity being constructed in the social field that we are moving within, habitus cannot be understood independently from the social field and the symbolic capital. Therefore habitus is

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<sup>76</sup> Koudahl (2004:167) and Callewaert (1992:23) express that the theory about habitus is a theory about socialisation. Habitus, Bourdieu (1977:87) underlines, is acquired in the family and the author underlines the structuring of school experiences (in particular the reception and assimilation of the specifically pedagogic message), and the habitus transformed by schooling, itself diversified, in turn underlies the structuring of all subsequent experience (e.g. the reception and assimilation of the message of the culture industry or work experience) and so on, from restructuring to restructuring.

a result of the social field the agents are acting within, and will determine which symbolic and capital the agent owns.

Both the concepts of habitus and of field are relational in another sense that they only function in relation to another (Bourdieu & Wacquant 1992:19). A field is not simply a dead structure, but a space of play which exists as such, only to the extent that players or agents enter into it, who believe in and actively pursue the prizes it offers. Bourdieu has referred to the relationship between field and habitus as one of ‘ontological complicity’ (Bourdieu in Grenfell & James 1998:16) and points out that the relation between habitus and field operates in two ways. Firstly, it is a relation of conditioning: the field structures the habitus, which is the product of the embodiment of the immanent necessity of a field. Secondly, it is a relation of knowledge or cognitive construction. Habitus contributes to constituting the field as a meaningful world.

The social room, Bourdieu (1989:17) emphasises, is constructed in such a way that agents occupying the same or neighbouring positions (as a PT, OT, nurse etc.), are placed in *similar conditions and subjected to similar conditionings, and therefore have every chance of having similar dispositions and interest, and thus producing practices that are themselves similar*. These dispositions, Bourdieu argues, are being achieved in these possessed positions, and involve an adjustment of this position. Bourdieu refers to Goffman’s description: *of one’s placing*<sup>77</sup>. It is this feeling of one’s placing in the interaction that makes people cling on to their ‘ordinary’ place and to have others ‘keep distance’ or ‘respect their rank’ and not become ‘confidential’. These strategies can be unconscious. The feeling of one’s place and what habitus’ affinity has experienced as sympathy or antipathy, is the basic for all sort of friendship and cooperation, according to Bourdieu<sup>78</sup>. However this adjustment can be problematic and, as Turner (1988:202) says, much of the actor’s energy is oriented towards avoiding the anxiety that comes with low self esteem and inconsistency.

To a certain extent Bourdieu follows the idea that the relational and contextual contribute to the constitution of habitus. The agents create their own world and are wrapped in a social system with a position that only could be understood in connection with the other agents’

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<sup>77</sup> Bourdieu (1989:20) criticises Goffman to omit one’s perception of position in the social room.

<sup>78</sup> Even if Bourdieu to a certain extent is concerned over the individuals’ placing connected to others and underlines interplay between agents, Layder (1994:157) claims that Bourdieu overlooks the independent contribution of the interaction order as a domain in its own right.



positions. In this thesis, identity is a part of an individual's habitus. A human being has many identities, including a professional identity, emerging through reflection as phronesis. The perception of oneself or self categorisation is constructed when interacting with various reference groups with contrasting professional habitus.

There are, Grenfell & James (1998:168) explain, the micro contexts of person-to-person interaction; on the other, large organisational structures. Bourdieu's theory of practice insists that both should be included. Both are mutually constitutive. According to Bourdieu (1973:72), one needs another's way of seeing to be constituted, but warns against deduction of action and interaction from the structure and reducing the structures to comprehensions, action and interactions.

In this thesis, professional identity is incorporated in habitus and is a part of students' individual and collective professional habitus, or group habitus, imposed during the socialisation process.

### **3.4 *Habitus in a field***

In his presentation, Bourdieu focuses on the construction of the objective structures (positions-room) and the distribution of the resources. This will define which external restrictions that rest on collaboration and description, or in this context, which limitations and possibilities that give guidance for possibilities for interaction. The agents' dispositions, e.g. perception and evaluation, will structure their actions. Bourdieu thinks analyses of the objective structures ought to come before the analysis of the practical comprehension of the world from the subjective standpoint and give his reason because the agents' point of view will vary systematically with the point they occupy in the objective space (Bourdieu & Wacquant 1992:11). He, in his attempt to connect the individual and society, can, as I interpret his work, be more focused on relations<sup>79</sup> of an exterior level.

Since habitus is a product of the vital necessity being constructed or the social field we are moving within (Bourdieu in Strand 2001:168), habitus cannot be understood independently of the social field, e.g. an educational field and the cultural capital of a profession and of an institution. In this way, Bourdieu's notion of field, habitus and the concept cultural capital are

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<sup>79</sup> In Bourdieu's texts, relations are referred to relations between agents, and in such a way as if the agents are fighting within a social structured room (Bourdieu & Wacquant 1992:97). This means a constructed system of relations between social groups (for example occupational groups).

useful in this thesis. Firstly, because it makes it possible to interpret different dominating positions in the subfield of health care studies, e.g. in relation to the implementation process of the modified curricula, including the common core. Secondly, as students' cultural capital becomes a part of their habitus, the degree to which the students identify themselves as health workers may indicate the cultural capital of a profession and of an institution. Improvement of students' habitus as health workers may reveal whether or not a common core in curricula has fulfilled its' political intention. Thirdly, interprofessional capability is included in students' professional cultural capital. Seen in this perspective, the students' interprofessional cultural capital may express the influence of different dimensions of interprofessional education.

### ***3.5 Education from a Bourdieuan perspective***

In this work, I have chosen to apply Bourdieu's theory about the educational system in order to provide three concepts for analysing interprofessional education as a part of the subfield of health care studies. His theory can be a tool to understand interprofessional education, professional identity and habitus, interprofessional capability and cultural capital. In this chapter the main feature of Bourdieu's theory about the educational system will be presented and discussed in relation to the introduction of common core in the curriculum for health care and to explore interprofessional education.

### ***3.6 Foundation of Bourdieu's theory about the educational system***

An individual is dependent of its possession and is influenced by the work in the educational system and by possibilities in the educational programme. The cultural legitimacy characterising an educational organisation will result in a selection and an exclusion of the content in a curriculum, something that will be shown in the syllabi. The socialisation process will therefore decide which professional cultural capital the agents achieve, and the dispositions become embodied in the form of habitus which is incorporated. The institutional conditions are necessary in order to function as inculcation, as Bourdieu expresses (Bourdieu & Passeron 1990:54). Socialisation in a community together with students from different reference groups might impose the students a common ground, a sort of group habitus. However, the educational system has institutional possibilities and limitations connected to the pedagogical action, which is being imposed.

In the first part of the book *Reproduction in Education, Society and Culture*, Bourdieu and Passeron introduced a theory about upbringing and socialisation (1977<sup>80</sup>). It is about transferring culture from one generation to another, a sort of reproducing of itself. The theory includes five main theses that depend on each other in a dynamic structure (see appendix 9). Four of these are founded in a common O-thesis:

*every power to exert symbolic violence, i.e. every power which manages to impose meanings and to impose them as legitimate by concealing the power relations which are the basis of its force, adds its own specifically symbolic force to those power relations* (Bourdieu & Passeron 1990:4).

Or, as Tarrou (1995:76) explains, every power achieving to cause imposition of importance, causes them as legitimate by hiding the power relations; by this the power relations will be hidden in the transfer. The superior 0-thesis about the educational system is distinguished in three sub-theses, which have again sub-theses. The thesis and the sub-theses can illuminate the assumptions in this project.

The transfer of culture involves an instance given power or authority to impose the importance of being legitimate. This can be interpreted as the transfer of importance, which is common, and acknowledged as correct. Bourdieu's way to regard what he calls pedagogic action in distinction from pedagogic work, has something to do with 'importance' (Callewaert 1992:119). This is not only about transfer, but to impose, something that presupposes power. This power Bourdieu calls *power to perform symbolic violence*<sup>81</sup>, symbolic to separate it from other types of violence.

### **3.6.1 The twofold arbitrariness of pedagogic action**

Bourdieu claims that pedagogic action (1<sup>82</sup>) is, objectively, symbolic violence insofar as it is the imposition of a cultural arbitrary by an arbitrary power (Bourdieu in Tarrou 1997:77). Arbitrary, Callewaert (1992:122) explains, is not to be understood as coincidence, but is

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<sup>80</sup> The book was first presented in French in 1970 with the original title *La reproduction. Eléments pour une théorie du système d'enseignement*. The first English edition was published in 1977. I refer to the second edition from 1990.

<sup>81</sup> Symbolic violence is the violence which is exercised upon a social agent with his or hers complicity (Bourdieu & Wacquant 1992:167).

<sup>82</sup> The numbers in the brackets indicate the numbering of the thesis. They are in the brackets after each thesis and correspond to the numbering used in Bourdieu and Passeron's exposition of *Reproduction in Education, Society and Culture*.

connected to the given circumstances, even if it is not substantiated of universal principle. Twofold arbitrary means that both the imposition of culture and the method of the imposition are arbitrary.

For Bourdieu pedagogic action<sup>83</sup> consists of an activity imposing importance of cultural transfer as symbolic violence in three meanings. Firstly, pedagogic action (1.1), according to Bourdieu, is objectively, symbolic violence because the power relations between the groups<sup>84</sup> are the basis of the arbitrary power which is the precondition for the establishment of a relation of pedagogic communication, i.e. for the imposition and inculcation of a cultural arbitrary by an arbitrary mode of imposition and inculcation.

Secondly, according to Bourdieu, pedagogic action (1.2) will be characterised as a symbolic violence because of a selection and exclusion of certain meanings when something of importance is imposed and inculcated. These two processes are mutual dependent on each other as worthy to be reproduced by pedagogic action. The reproduction in both senses of the concept will function as a production and a reproduction of the arbitrary selection as a group objectively makes in and through its cultural arbitrary.

Thirdly, Bourdieu claims that the objective degree of arbitrariness of a pedagogical action's power of imposition rises with the degree of arbitrariness of the culture imposed (1.3)<sup>85</sup>.

For the understanding of the twofold arbitrary in pedagogic action in the management of the common core in the curriculum for health care educations, it is central to ask:

- To what extent do the power relations determine the interprofessional cultural capital, connected to the common core in the curriculum, expressed in the syllabus?

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<sup>83</sup> Bourdieu refers to pedagogic action whether exerted by all the educated members in a group, by family members or by a system of agents explicit mandated for this purpose by an institution (i.e. teachers, tutors). The following propositions apply to any social formation, understood as a system of power relations and sense relations between groups (Gloss to the main thesis 1).

<sup>84</sup> Bourdieu argues that the power relations and symbolic relations between the agencies (i.e. teachers) exerting an action of symbolic violence. This structure expresses the power relations between the groups making up the social formation in question. Through the mediation of this effect of domination by the dominant pedagogic action, the different pedagogic actions carried on within the different groups collaborate (objectively and indirectly) in the dominance of the dominant classes (Gloss to the sub thesis 1.1.3).

<sup>85</sup> Bourdieu argues that the 'system of education' is defined traditionally as the sum of the institutional or customary mechanism ensuring the transmission from one generation to another of the culture inherited from the past. The classical theories tend to sever cultural reproduction from its function of social reproduction, this to ignore the specific effect of the symbolic relations in the reproduction of power relations (Gloss to the sub thesis 1.3.2).

- To which degree is professional cultural capital important as a guide to students' interprofessional cultural capital and habitus?

### 3.6.2 Pedagogic authority

Bourdieu claims that any pedagogic action necessarily implies pedagogic authority (2) as a condition to be exercised, pedagogic authority and relative autonomy, and that such an authority is given of the agency commissioned to exercise it<sup>86</sup>. According to Bourdieu, a relation of pedagogic communication can produce its own, specifically symbolic effect, only because the arbitrary power which makes imposition possible is never seen in its full truth.

The authority, which seems to be pedagogically, in reality, is a legitimacy, which is being lent, because it is delegated. In this way, authority has been given from the public entity, which should perform the pedagogic action. This involves pedagogic authority because the one who has symbolic power to practice symbolic violence, appears in a communication condition and the authority work as imposing the cultural arbitrary, which happens, occur through pedagogic communication.

Firstly, Bourdieu explains the pedagogic authority (2.1), within a pedagogic action, as a power to exert symbolic violence. It manifests itself in the form of a right of legitimately imposing of importance pedagogic authority<sup>87</sup>. As Tarrou expresses (1995:79), this implies imposition of importance, concerning knowledge, skills and attitude or the professional and cultural capital. The pedagogic authority says Bourdieu, reinforces the arbitrary power which establishes it and which it conceals. This is because it represents an arbitrary power to impose and is objectively recognised as a legitimate authority.

Secondly, Bourdieu explains that pedagogic action (2.2) tends to produce misrecognition of the objective truth of cultural arbitrariness because, both because it is invested with a pedagogic authority and because the pedagogic action is recognised as a legitimate agency of

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<sup>86</sup> Bourdieu argues that the idea of a pedagogic action exercised without pedagogic authority is a logical contradiction and a sociological impossibility because a pedagogic action which aimed to unveil its objective reality of violence and thereby destroy the basis of the agent's pedagogic authority would be self-destructive (Gloss to the main thesis 2).

<sup>87</sup> Bourdieu argues that even if the relations of competition between the different agencies obey the logic of the field of legitimacy considered, the relative autonomy of the field never totally excludes dependence on power relations. The specific form taken by the conflicts between the legitimacy – claiming agencies in a field is always the symbolic expression of the relations of force which are set up in this field between these agencies and which are never independent of the relations of force external to the field (Gloss to the sub thesis 2.1.1.2).

imposition. Therefore it has a tendency to produce recognition of the cultural arbitrary it inculcates, as legitimate culture.

Thirdly, every agency (agent or institution) exerting a pedagogic action (2.3), argues Bourdieu, commands a pedagogic authority. This is only with mandate from the groups or classes whose cultural arbitrary it imposes in accordance with a mode of imposition, defined by that arbitrary, i.e. as the delegated holder of the right to exercise symbolic violence<sup>88</sup>.

For the understanding of pedagogic authority and implementation process of the common core in the curriculum, the following questions will be important to discuss:

- To what extent is implementing the common core as interprofessional education a precondition for improving the students' habitus as health workers?
- Which pedagogical methods characterise interprofessional education?
- Which interprofessional cultural capital characterises educational institutions of one specific discipline?

### **3.6.3 Pedagogic work**

Pedagogic work (3) occurs, according to Bourdieu, as an arbitrary imposition of a cultural arbitrary by delegation of authority. This requires the pedagogic agency to reproduce the principles of the cultural arbitrary which a group imposes as worthy of reproduction and occurs both by its existence and by delegating to an agency having the required authority to reproduce it. Pedagogic work is carried out by agents like teachers and tutors. They have their habitus and produce practices in accordance with the principles of the cultural arbitrary in the groups that delegate sufficient pedagogic authority to a pedagogic action, to be established and can perpetuate. Bourdieu underlines that this implies that the pedagogic work is a process of inculcation which must last long enough to produce a durable habitus. In other words, a habitus, as a product of internalisation of the principles of a cultural arbitrary, is capable of perpetuating itself after the pedagogic action has ceased and thereby of perpetuating in practices the principles of the internalised arbitrary.

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<sup>88</sup> Bourdieu argues that delegation of authority does not imply the existence of an explicit agreement, still less a codified contract, between a group and a pedagogic agency, although, even in the case of the family, pedagogic action of a traditional society, the pedagogic agency's pedagogic authority may be juridical recognised and sanctioned. Even when certain aspects of the agency's pedagogic authority are explicitly codified (e.g. the delimitation of the syllabus and legal conditions of employment in an educational institutions) all is not contractual in the contract of delegation. To speak of delegation of authority is simply to name the social conditions for the exercise of a pedagogic action (Gloss to the sub thesis 2.3).

Bourdieu points out firstly, that pedagogic work (3.1) produces practices conforming to the principles of the cultural arbitrary of the groups, which delegate needed pedagogic authority. Pedagogic work has, as continual work with inculcating, to produce a durable training, which, according to Bourdieu, has a tendency to reproduce the social conditions of the production of that cultural arbitrary<sup>89</sup>. This means that the pedagogic work reproduces the objective structures, of which it is the product, by means of habitus, defined as the principle generating practice which reproduces the objective structures. Its effect of reproduction of a legitimate cultural capital or a durable habitus<sup>90</sup> depends on the legitimate mode, and on the legitimate training period. In addition to duration, the author describes also transposability and exhaustivity as measurements for the effect of the pedagogical work<sup>91</sup>. The degree to which the pedagogic work manages to inculcate in the legitimate addresses the cultural arbitrary which it is mandated to produce is measured by the degree the habitus it produces is durable<sup>92</sup>.

Secondly, Bourdieu means that the pedagogic work (3.2), with pedagogic authority as an assumption, has the effect of confirming and consecrating pedagogic authority in an irreversible way, i.e. the legitimacy of pedagogic work and the cultural arbitrary it inculcates<sup>93</sup>. This is done by masking more and more completely the arbitrariness of the

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<sup>89</sup> Bourdieu argues that the specific effect of pedagogic action may be contrasted with the effect of political power in terms of their temporal range, in which the duration of the corresponding powers of imposition is expressed. Pedagogic work is capable of perpetuating the arbitrary it inculcates more lasting than political coercion. However, except when political power itself resorts to pedagogic work i.e. a specific educative programme (Gloss to the sub thesis 3.1.1.1).

<sup>90</sup> Bourdieu argues that the specific productivity of pedagogic work is objectively measured by the degree to which it produces its essential effect of inculcation, i.e. its effect of reproduction (Sub thesis 3.1.1).

<sup>91</sup> Bourdieu points out that even if the congruence of the three measures of the reproduction effect is not logically necessary the theory of the habitus, as the principle unifying and generating practices, enables to understand why the durability, transposability and exhaustivity of a habitus in fact prove to be closely linked (Gloss to the sub thesis 3.1.1.3).

<sup>92</sup> Bourdieu argues it is only on the condition of seeing that a group's integration rest on the (total or partly) identity of habitus being inculcated by pedagogic work, i.e. under condition of finding the principle of homology of practises is located in the total or partial identity of the grammars generating practices, it is possible to avoid from the naiveties of the social philosophies of consensus. Such sociologies, he says, in reducing group integrating of a group to the possession of a common repertoire of representation, are unable, for example, to apprehend the unity and the integrative function of practise or opinions or perceptions that are phenomenally different or even contradictory but produced by the same habitus (Gloss to the sub thesis 3.1.3).

<sup>93</sup> Bourdieu argues that the presence of pedagogic authority, both in principle and as practical accomplishment of pedagogic action, represents a vicious circle. It will be to deny, Bourdieu says, the fact that the pedagogic authority, as every pedagogic action in exercise is in possession of, in the order of genesis (biography and the succession of the generations), do not break the pedagogic circle, as a pedagogic action without pedagogic authority, being linked to, other than to lock more firmly the recipient of the pedagogic work, made possible in circle of ethnocentrism within a group in society. He says further that the one who deliberates his/her culture, is already cultivated and the questions of the one who thinks he/she is questioning the principles for the upbringing and education, still have their root in their upbringing (Gloss to the sub thesis 3.2).

inculcation and of the culture inculcated<sup>94</sup>. This occurs in means of the success of the inculcation of the arbitrary and because the pedagogic work as an action involves changing, with a tendency to inculcate an education as a system of durable and transposable dispositions.

Thirdly, Bourdieu argues that the first pedagogic action is carried through pedagogic work (3.3) without any antecedent (primary pedagogic work), i.e. the pedagogic work occurs in the family producing a first habitus<sup>95</sup>. This habitus is characteristic of a group, which is the basis for the subsequent formation of any other habitus. The second habitus depends on the distance between the habitus it aims to inculcate and the habitus produced by the previous pedagogic work. The mode of the inculcation is characterised by the position between implicit and explicit pedagogy<sup>96</sup>.

As habitus can be understand as a system of dispositions embodied in the individual by their incorporation of the cultural capital and the social capital (from home, school etc.) (Petersen 1999:48), this system can be interpreted by looking at how it shows itself in behaviour which is being generated. This means studying knowledge, perception, preferences and action. The action can be compared with the background system of dispositions (life history) or primary habitus being carrier of dispositions being formed earlier.

Bourdieu claims that the pedagogic work must be capable of producing, within the limits of the institution's means, i.e. continuously, at least expense a habitus as homogeneous and durable as possible. Simultaneously, the habitus must be confirming as closely as possible to

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<sup>94</sup> Bourdieu argues that pedagogic work producing the habitus as a system of schemes of thought, perception, appreciation and action, produces misrecognition of the limitations implied by the system, in a way that the efficacy of the ethical and logical programming it produces is enhanced by misrecognition of the inherent limits of this programming, a misrecognition which is a function of the degree of completion of the pedagogic work (Gloss to the sub thesis 3.2.2.1).

<sup>95</sup> Bourdieu argues that the success of all school education and more generally of all secondary pedagogic work, fundamentally depends on the education in the earliest years of life, even and especially when the educational system denies this primacy in its ideology and practise by making the school career a history with no pre-history (Gloss to the sub thesis 3.3.1).

<sup>96</sup> Bourdieu argues that implicit pedagogic is the most efficient way of transmitting traditional, undifferentiated, knowledge. It requires the apprentice to identify with the physical person of the more experienced master, at the cost of a self-remission which prohibits analyses of the principles of the exemplary conduct. An implicit pedagogy is, on the other hand, ineffectual when applied to agents lacking that prerequisite, and can be very 'profitable' for the dominant group when the pedagogic action is performed in a system of pedagogic action that is dominated of the dominant pedagogic action and thereby contributes to the cultural reproduction, and through is, to social reproduction, by enabling the possessors of the prerequisite cultural capital to continue to monopolise that capital (Gloss to the sub thesis 3.3.2.1).



the principles of the cultural arbitrary, which it is mandated to reproduce. This is to fulfil its external function with cultural and social reproduction.

By means of Bourdieu's theory it is important to ask questions such as:

- To what extent does a former habitus affect students' interprofessional cultural capital?
- To what extent does the duration of the pedagogic work produce a lasting habitus as health workers?

### **3.6.4 The educational system**

The educational system (4) is an arena for pedagogic action. According to Bourdieu, every institutionalised educational system<sup>97</sup> owes the specific characteristics of its structure and the way it functions, to the fact that it has to produce and reproduce the institutional conditions necessary to exist and persist. This is done by the means proper to the institution and is called the 'self-reproduction' of the system. The institutional conditions are necessary, Bourdieu points out, both to the exercise of its function of inculcation and to fulfil its function of reproducing a cultural arbitrary which it does not produce. The reproduction he calls 'cultural reproduction', the reproduction of which contributes to the reproduction of the relations between the groups, named 'social reproduction'.

Bourdieu asserts firstly that the conditions for exercising pedagogic work, and the institutional reproduction of such a pedagogic work, tend to coincide with the conditions favouring the function of reproduction (4.1). On the one hand, Bourdieu means this depends on an educational system that cannot fulfil its function of inculcating, unless it produces and reproduces within the proper means to the institution, the conditions for pedagogic work capable of reproducing, within the limits of the institution's resources, i.e. continuously, at the least expense and in regular batches, a habitus as homogenous and durable as possible, in as many addresses as possible (including the reproducers of the institution).

On the other hand, the conditions for exercising pedagogic work depends on an institutionalised educational system that must produce a habitus conforming as closely as

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<sup>97</sup> Bourdieu argues that if it is just as possible to understand the structures characteristics linked to institutionalisation by relating them to the interest of professions progressively gaining a monopoly as it is to understand the latter in terms of the former, the reason is that these processes represent two inseparable manifestation of the autonomisation of a practice, i.e. of its constitutions as a specific practice (Gloss to the main thesis 4).

possible to the principles of the cultural arbitrary which it is mandated to reproduce, in order to fulfil its function of cultural and social reproduction. This occurs, he argues, because of a permanent corps of specialised agents, equipped with the homogeneous training and standardised<sup>98</sup>. This is prerequisite for the exercise of a specific, regulated process of pedagogic work,<sup>99</sup> i.e. the work of schooling, the institutional conditions of its own reproduction to restrict its activity to the limits laid down by an institution, mandated to produce a cultural arbitrary and do not decree it<sup>100</sup>. Simultaneously, the habitus must be so coincidental with the principles for the cultural arbitrary as the educational system has mandate to reproduce. This is to fulfil its external function with cultural and social reproduction.

Secondly, Bourdieu points out, the educational system (4.2) must produce and reproduce, by means proper to the institution, the institutional conditions for misrecognition of the symbolic violence which it exerts, i.e. recognition of its legitimacy as a pedagogic institution. This occurs because it explicitly raises the question of its own legitimacy. This is done by setting up pedagogic work as such, i.e. as a specific action expressly exercised and undergone as such, called 'work of schooling'.

Thirdly, Bourdieu underlines, the educational system (4.3) is able to set up the dominant pedagogic work as work of schooling. This occurs on the one hand because by the means proper to the institution, it produces and reproduces the necessary conditions for exercising its internal function of inculcating, which are at the same time the sufficient conditions for the fulfilment of its external function of reproducing the legitimate culture and for its correlative contribution towards reproducing the power relations. This occurs, on the other hand, because by the mere fact of existing and persisting as an institution, it implies the institutional conditions for misrecognition of the symbolic violence it exerts. According to Bourdieu, this is

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<sup>98</sup> Bourdieu argues that the teaching tools which the educational system makes available to its agents (manuals, syllabus, teaching instructions etc.) must be seen not simply as aids to inculcation but also as instruments of control tending to safeguard the orthodoxy of pedagogic work against individual heresies (Gloss to the sub thesis 4.1.1.1).

<sup>99</sup> Bourdieu argues that whatever the habitus to be inculcated, all working of schooling generates a discourse tending to make explicit and systematise the principles that habitus, in accordance with a logic which primarily obeys the requirements of the institutionalisation of apprenticeship. 'Neutralisation' and de-realisation of messages and, therefore, of the conflicts between the values and ideologies competing for legitimacy constitute a typically academic solution to the typically academic problem of reaching a consensus on the programme, as a necessary condition for programming minds (Gloss to the sub thesis 4.1.1.2).

<sup>100</sup> Bourdieu argues that given that it contains a tendency towards self-reproduction, to reproduce the changes occurring in the cultural arbitrary that it is mandated to reproduce only after a time-lag commensurate with its relative autonomy (the cultural backwardness of school culture) (Sub thesis 4.1.2.1).

because the institutional means available to it as a relatively autonomous institution, under the guise of neutrality, in addition are predisposed to serve the groups whose cultural arbitrary it reproduces. This occurs because the educational system has a legitimate monopoly to use symbolic violence. This mechanism, Bourdieu names dependence through independence.

Interaction between students from different disciplines will be conditional as adjusting with the settings or structures in the social field. An educational situation will not be considered interprofessionally without the possibilities for interaction between students. Focusing only on the aspect of interaction seems not to give sufficient knowledge of what happened with the introduction of common core in the curricula for health care education. As Turner says, we cannot fully understand the micro world without knowledge of the macro structural parameter that order micro encounters. As he argues *the symbolic and material resources available to the individuals, the placement of people in space, the amount of time people have, the options that are realistically available, and just about everything that it possible in a micro encounter are all dictated by macrostructure* (1988:211). When implementing interprofessional education, different frame conditions (economic, organisational etc.) in the educational system with basis in Bourdieu's thesis about the educational system, give reason to raise the following questions:

- To what extent will students with modified curricula value interprofessionalism, more highly than students with unmodified curricula?
- To what extent will the mode of interprofessional socialisation affect the students' interprofessional cultural capital?

### **3.7 Implications for interprofessional education**

The focus on the educational system enables us to address a number of questions about the handling of the common core in the curricula within health care programmes, and about the development, through the studies, of interprofessional capability, as part of the professional cultural capital. A core of the thesis form a basis for better understanding of the implications of the common core, with focus on professional identity incorporated in habitus as health workers and interprofessional cultural capital and how the educational system affects the incorporation of learning. Further, the thesis aims to give insight into how different educational institutions, professions and dimensions of interprofessional education influence the socialisation process.

### 3.7.1 Description of health care education in Bourdieu's terminology

With his theory of the pedagogic field, Bourdieu underlines that the contrast one can see within the cultural battlefield, can also be seen within a pedagogic field (Bourdieu in Petersen 1999:59). The struggle between professions that one can experience in health care is reflected in this **pedagogic subfield** of the educational system.

In the subfield of the health care education various health care professions appear with different cultural capital and positions within the educational institutions. The directors of the disciplines, the teachers, the tutors and the students act as **agents**. In addition, the implied unions, authority of working life with its employer/employee relationships, unions and worker school authority at all political and educational levels are parts of the subfield of health care. University colleges, universities, Ministry of Education and Research and participants in the working life are **institutions** in this field.

The students' later **habitus** and **cultural capital** are affected by a former habitus and the socialisation process in their education, in means of the pedagogic authority, pedagogic action, pedagogic work and the educational system.

The assumptions made in Bourdieu's theory of education will be discussed further with reference to their importance in understanding interprofessional education in health care.

### 3.7.2 Pedagogic action in interprofessional education within health care studies

*To what extent do the power relations determine the interprofessional cultural capital, connected to the common core in the curriculum, expressed in the syllabus?*

Health care programmes are formally organised under the authority of the Ministry of Education and Research. Revisions of curricula for health care studies belong partly within the political jurisdiction of that Ministry and partly within the Ministry of Health and Social Care. The constituent groups associated with the content of the health care's cultural capital include political groups and the health care professions themselves. Cheetham and Chivers (2005:44) suggest that professional associations or unions have played an important role in the formulation of models of professional development. There has been a considerable degree of collaboration between professional bodies and educational institutions in providing professional and interprofessional education. However, the authors stress that educational

institutions often enjoy considerable autonomy in deciding course content and philosophy. Is this so in Norway?

The different professions are parts of the premise providers<sup>101</sup> for the development of the health service and the symbolic capital that dominate health care. The relative strength between professions or departments of health service, in other words, the relationship between the arbitrary power among the different professions in the health care and their corresponding educational system will determine what is acknowledged as legitimate and of importance to reproduce. This may be of vital importance in understanding which cultural capital is acknowledged as being worthy to be imposed. The power structure will give foundation for the arbitrary power by the implementation process of the common core in the curriculum.

The dominating culture, or department, in each health care programme will make its mark in selection and exclusion, as a pedagogic action, in developing a syllabus derived from the common core. Correspondingly, the departments in health care education will fight for how the education holds possibilities, or not, for the development – or imposition – of interprofessional cultural capital. The dominant profession within the institution will influence the cultural capital (Drange 1995:15). Given that the degree of communication between the agents depends on the degree of selection and exclusion in designing the syllabus, the collective social decisions will determine behaviour and accepted relations between students and teachers. One question to be asked is if the domain programme, having most of the health care students and agents, dominates the pedagogic subfield.

Given that an interprofessional education programme presupposes organisational agreements, which in turn presuppose the establishment of a relation of pedagogic communication, one can ask whether organisational considerations, such as locality, logistics and numbers of students in different programmes, could explain how the common core in curricula has been implemented, as uniprofessional, multiprofessional or interprofessional activities. As Norman (2005:121) suggests, the technical difficulties involved in timetabling and delivering a common curriculum to thousand of students across a large number of professional groups across different geographical locations, are obstacles that educational institutions face when

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<sup>101</sup> The established professions are dominating within a field. Medical doctors, being the first profession established in health services, can be said to be the dominating profession, or as Petersen (1999:14) expresses in Bourdieu's terminology, the doctors are the main agents.

implementing interprofessional education. From such a discussion the question can be raised about which assumptions must be taken into account to promote students' interprofessional cultural capital; ability to collaborate and to have a mutual understanding – a kind of habitus as a health worker.

Another question is if introducing a common core, as a political decision, with no extra financial resources, enables the educational institutions to fulfil their work to give the students interprofessional cultural capital or to what extent the introduction of a common core has cultivated habitus as health workers. One question is how the power relations between the several health care departments are expressed. Will the dominating culture within an educational system, let the students share learning with others in an interactive pedagogical subfield?

One can assume that by developing a syllabus connected to the common core in the curriculum, the degree of arbitrariness, with the selection and exclusion of the content in the curriculum, will be of importance for the arbitrary in the power structure between constitutive groups that decide what will be legitimate to transfer. In other words, the success of the implementation of common core in connection with the purpose of interprofessional education, the interprofessional cultural expression itself, and the way of the transferring it, will depend on the relations of the communications within health care studies and the decisions of what is of importance to inculcate.

*To which degree is professional cultural capital important as a guide to students' interprofessional cultural capital and habitus?*

The distance between the education and working life has gradually been reduced (Stjernø 1996:33). Drange (1995:23) asserts that unions or professional associations are indirectly working within the educational institutions by being agents that regulate the profession's cultural capital and perform their symbolic capital on behalf of members. The unions contribute to the pedagogic action by participating in the revision of the curriculum and therefore in giving guidance about which cultural capital the future health workers will possess.

Molven (1996:234) says that the teachers have had a central role in the development of nursing. Subsequent research found, however, that in 1990s the Norwegian Nurse Association

and the profession of nursing have reduced their influence in determining national curricula (Kvangarsnes 2005:248). Correspondingly, Drange (1995:25) found that the discipline of medical laboratory science has limited influence on which cultural capital the educational institutions deem to be legitimate to impose.

On the other hand, Drange (1995:52) suggests that the Director of Study is strongly represented when developing the syllabus. The relations between the agents will determine the symbolic effect of pedagogic communication that occurs in developing a profession's curriculum. The cultural capital characterising a profession is a result of the dominating agents employing different strategies to influence the development of the profession, selecting and excluding what they deem worthy to impose arbitrarily.

One can assume that those professions having sporadic relations to patients and other professions will have a limited focus on interprofessionalism and that this will influence the students' perception of interprofessionalism. Professions characterised by relational thinking may value interprofessional care and education more highly.

### **3.7.3 Pedagogic authority in the interprofessional education within health care studies**

*To what extent is implementing the common core as interprofessional education a precondition for improving the students' habitus as health workers?*

Interprofessional cultural capital assumes ability to collaborate beyond professional boundaries. One can ask whether students who interact with their fellows from several comparison reference groups will be aware of the differences between them. Will students in a heterogeneous environment, with loss of conformity, lose some of the professional cultural capital necessary to perform a professional action? Conversely, will the students improve their future professional role in relation with their fellows from other professions?

One may question whether the introduction of a common core in the curriculum, without implementing it as interprofessional education, is sufficient to improve students' habitus as health workers. It might be that the introduction of the common core with no possibilities for interactions between the students to occur, will not be enough to make the students value interprofessionalism.

Professions welcome interprofessionalism to different degrees, depending on which position within the field of health care they occupy. One may ask how the power relations between the different health care departments are expressed. If the common core is not organised as interprofessional courses, it might be that the professions' cultural capital being reproduced does in a limited degree focus on interprofessionalism.

It is not obvious that the introduction of the common core, without interprofessional education, will improve the students' habitus as health workers. From such an understanding, one may ask to what extent the modified curricula has brought interprofessional learning as a preparation for the coming work situations and possibilities for interactions between students from several disciplines to occur.

*Which pedagogical methods characterise interprofessional educations?*

A further clarification of how the students acquire interprofessional cultural capital is worked out by the director of the study, and teachers as agents, given pedagogic authority to exert a pedagogic action, in means of legitimacy to exert symbolic violence or power. The choice, when designing the syllabi and deciding what to pass on, will be partly controlled by the teachers who select methods to impose interprofessional cultural capital. As interactive learning methods are a precondition for interaction and interprofessional education, the question is whether or not various interactive learning methods constitute the domain of pedagogic methods or if received learning plays a prominent part.

*Which interprofessional cultural capital characterises educational institutions of one specific profession?*

A common curriculum within one health profession does not imply identical syllabi at all educational institutions, even if educating to the same profession with the same authorisation. On the contrary, each institution has its own history, culture and distinctive character. This may be implicit, as a 'hidden curriculum', i.e. an unwritten law (Gundem 1998:265). Directors of the study and teachers have pedagogic authority to develop the syllabus in accordance with the curriculum. However, given the power to exert symbolic violence, the curriculum is interpreted differently and expressed, explicitly and implicitly, in the syllabus.

One can assume that even if the curriculum is identical, the professional cultural capital being transferred varies between the educational institutions. Which cultural capital is being



imposed, depends on which the legitimate agency deems important to inculcate. One can ask how the directors and teachers of the study influence the institutions' cultural capital. As practice placements in health care are of importance within the socialisation process, the cultural capital expressed at for example a hospital may affect the students' professional habitus.

### **3.7.4 Pedagogic work in the interprofessional education within health care studies**

*To what extent does a former habitus affect students' interprofessional cultural capital?*

As a later habitus depends on former habitus, one can assume that students having chosen an occupational oriented section at upper secondary school have been imposed a different pedagogic work (implicit and explicit), compared with students following a more traditional or academic oriented section. Having experience in health care, the students will acquire certain insight into associated professions' cultural capital. A question to be raised is how the students' experience in health service before starting their studies, and in parallel with studies, affects a later habitus or how the students comprehend the cultural capital of different health professions.

*To what extent does the duration of interprofessional pedagogic work produce a lasting habitus as health workers?*

One can question whether the duration of the pedagogic work is of such an adequacy that interprofessional education results in developing of a common frame of reference, a comprehension of oneself as a prospective health worker. Or should one rather ask whether it is a beginning – a process where the students see the profit of working in groups and continue to pursue this in their occupational practice? One can question to what extent students will develop cultural capital to practise as an interprofessional health care worker.

### **3.7.5 The educational system in an interprofessional subfield of health care studies**

*To what extent will students with modified curricula value interprofessionalism more highly than students with unmodified curricula?*

The educational institution has to exert its function, with cultural and social reproduction, within the limitations of its means. It is doubtful whether health care programmes, having implemented the common core in the curriculum as uniprofessional education, are capable of executing the pedagogic work with a purpose that the students acquire knowledge about the

cultural capital of the other health professions. Then one can question if it is too naïve to assume that introducing a common core in the curriculum, as a political resolution, with no additional resources and demands about interprofessional education, will enable the institutions to fulfil their responsibility to inculcate the cultural capital called interprofessional cultural capital.

*To what extent will the mode of interprofessional socialisation affect the students' interprofessional cultural capital?*

As the implementation of the common core in the curriculum requires a number of various frame conditions, like access to resources, organisational changes etc., this will give guidance to what extent the students will acquire the wanted interprofessional cultural capital. In this way, the educational system, within its means, gives guidance for designing the syllabus.

A question is how central the mode of the interprofessional pedagogic work is for the developing of students' interprofessional cultural capital. Is it the transposability or if the courses are appropriate or 'fit' the students, that is are vital for improvement of their ability to collaborative across boundaries. Conversely, is it the exhaustivity, the way the interprofessional educations are designed or constructed, that is crucial for the success of interprofessional courses? Have the designers discovered new and innovative approaches when modelling interprofessional courses as pedagogic work? One can ask whether or not interprofessional courses have provided foundation for a co-operative atmosphere<sup>102</sup> that is of such a character that all students comprehended their contribution to be of importance.

Another question to be raised is to which degree different professions' accountability within the interprofessional student groups has been clarified, or if the students had acquired the needed cultural capital or process knowledge to make decisions. Alternatively, is it the stage and/or the localisation when the students first meet students from other professions, with different group habitus, as reference groups, that are important for development of interprofessional cultural capital?

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<sup>102</sup> In her research, Gordon (2006) found that students, after attending workplace-based interprofessional activities, was more agree that there is an atmosphere of competition between professions compared with students' attitude before the interprofessional pedagogic work.

As Bourdieu (Bourdieu & Wacquant 1992:121) claims, habitus is acquired through practice and is oriented towards practical situations. Learning in practice is characterised partly by participating in concrete actions, partly by the reflection of the actions or reflection in action, according to Nørgard (2005:63). She emphasises that placements may have positive condition connected to the learning process, because the tasks are authentic, the work day is complex with possibilities for doing various tasks. During placements, the challenges for the tutors are to supervise the students in how to learn the field of practice and to encourage them to be active in the participation in the community of practice. Nørgard suggests that, where there is a lack of resources for tutors, the students will be left to themselves<sup>103</sup>. One can question if the social agents have the necessary interprofessional cultural capital, if the social field has sufficient resources and how the students will perceive their experience in the field of health care. On the other hand, how will the stage when the students enter the field of interprofessional activities have an impact on their interprofessional cultural capital?

To let the students practice interprofessionally in relation to the coming occupational role requires both a theoretical and a practical approximation, i.e. *theoria* and *praxis*, to interprofessional work. Socialisation in a community together with comparison reference groups may give the students a common ground, a broader and comprehensive health care habitus and interprofessional cultural capital. As the educational system has institutional possibilities and limitations connected to the pedagogic action, which is being imposed, one may assume that the organisation and localisation of the different health care programmes will influence the surroundings and thus can constitute good learning arena for appropriation of interprofessional cultural capital. In addition, the economic aspect, resources of teachers and tutors, the neighbourhood to the community of practice, will frame the interprofessional activities.

The question is how the socialisation in social rooms, with agents from several professional education systems, affects the student's interprofessional cultural capital, connected to prospective health workers. One can assume that the duration and the mode of the interprofessional education (transposability and exhaustivity) e.g. the objectives for the interprofessional education, the pedagogic methods, the localisation, and the stage when the

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<sup>103</sup> Therefore, Nørgard (2005:63) argues, it is reasonable to look at the structure in relation to the supervision in the field of practice; it is not sufficient having a community of practice, the student should be a part of a professional and social community.

students enter the field of interprofessional education, have an impact on students' interprofessional cultural capital.

### **3.8 Assumptions**

Bourdieu's theory about the educational system has provided the basis for making some assumptions about interprofessional education. One of these is connected to the differences between health care programmes and educational institutions. A second is implications for the introduction of a common core in health care education. A third is about the influence of the dimensions of interprofessional education. A fourth is the effect of the students' former habitus on their interprofessional cultural capital and professional habitus.

#### **Variation within health care programmes and educational institutions**

Each profession is responsible for fulfilling a special task within health service. Tradition and history have influenced the development of the professions' cultural capital. Some health care students will have their prospective work nearly physical isolated from other health workers, while other will work in groups across boundaries. On the other hand, having the same curriculum does not imply having the corresponding cultural capital and syllabi. Health care students within one profession might have different perceptions of interprofessionalism and various degrees of habitus as health workers. As the health care professions have more or less relational approaches towards patients and other professions (see table 1), this will be expressed, both implicit, as a hidden curriculum, and explicit, in the syllabi.

#### **Assumption:**

**The professional cultural capital in the educational institutions is important as guidance for development of students' interprofessional cultural capital and habitus**

#### **Introduction of a common core in the curriculum**

The common core in the curriculum could be included in uniprofessional courses, where students from each profession learn separately. Or, students, from different professions, learn the subjects in the common core as multiprofessional activities, side by side in the same classroom, without interaction. To enable interaction to occur between the students from various professions in the classroom e.g. doing case studies, or in placements at hospital or in the community, the common core in the curriculum is learned within an interprofessional education.

Through implementing the common core as uniprofessional, multiprofessional or interprofessional education, the implementation of the common core, in this way, function as production and reproduction of the arbitrary selection as a group objectively makes in and through its cultural arbitrary.

**Assumption:**

**Interaction facilitates the improvement of the students' professional habitus as health workers**

**Different dimensions of interprofessional education**

Education and upbringing is a central carrier of culture and work as an important mechanism for reproduction and change. Education, as Petersen (1999:52) says, shapes the individuals' dispositions and utilisation from the different educational institutions becomes tools in the reproductive strategy.

In the interaction or in relation with various reference groups, the student may be aware of differences and inequalities compared with other health care students. The pedagogic work with inculcating produces practices conforming to the principles of the cultural arbitrary of the health care study. The pedagogic work's impact on the reproduction of the legitimate interprofessional cultural capital, or a durable habitus, depends, according to Bourdieu, on the duration and the mode of the training period.

How an interprofessional learning situation is organised depends on the teachers as agents and the external conditions. The limitations within the education system will give guidance for possibilities for interaction, where the participants will make rules for collaboration and thus acquire an interprofessional theoria and praxis (praxis<sub>2</sub>). A successful, interprofessional learning situation will give possibilities for reflection on the situation from the students' different paradigm, to acquire interprofessional phronesis. This can form the basis for mutual learning and respect, and insight into one's own and of the other profession's cultural capital.

Students may discover collaboration and its internalised attitudes and values. The individual has a need for a feeling of security, predictability and comfort. Common understanding may reduce the uncertainty between the students, reduce the prejudice and therefore make interaction possible to occur and to achieve the cultural capital to collaborate that the health

service demand. As Turner (1987:173) argues: *...the need for facility (a sense of the natural of a shared social world) is 'a powerful motivational force in human interaction'.*

**Assumption:**

**The mode and duration of interprofessional education affect the students' interprofessional cultural capital and habitus**

**The influence of the students' former habitus**

If Bourdieu's assertion holds that a habitus is formed by the former habitus, i.e. the primary habitus during the earliest phase of the upbringing, this implies that a later habitus is influenced by the pedagogic work at upper secondary school as well as other experiences. Habitus depends also on the distance between a former habitus and the habitus it aims to inculcate. Students lacking occupational practice before or concurrent with their studies can be, as Bourdieu claims, 'profitable' for the dominant group when the pedagogic action is performed, i.e. forming a habitus that coincide with that inculcating the pedagogic work. In other words, the reproduction of the cultural capital will have a 'benefit' if the students had followed an occupational section at upper, secondary school and have experience in health care before the study.

**Assumption**

**The students' former habitus influences the students' interprofessional cultural capital and habitus<sup>104</sup>**

*The intention in this thesis is to shed light on the implementation process of a common core in curriculum for health studies, as a political decision to improve students' interprofessional cultural capital and their habitus as health workers. This implies to study whether or not a common core was sufficient to achieve the aim. Or, maybe possibilities for interaction and interprofessional education are a precondition. The implication of how different dimensions of interprofessional, i.e. duration and mode, affect students' interprofessional cultural capital and their professional habitus will be highlighted. A description of how this has been carried out will be presented in the next chapter.*

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<sup>104</sup> This assumption is discussed as specific dimensions within the other assumptions in the end of the thesis.

## 4. Methods

In response to the distinctive characteristics of this study, an inquiry was constructed with data from written sources such as literature, public reports, White Papers, health care curricula, and health care students from some selected education programmes at different educational institutions. Text analyses have been applied to interpret the written sources. A quantitative approach has been preferred to explore implication of introducing a common core in the curricula for health studies and different dimensions of interprofessional education under conditions of control. By analysing numerical information through statistical procedures, associated with some of the described assumptions, the intention has been to have an indication of whether or not students' professional habitus and their interprofessional cultural capital have improved.

In this chapter, the empirical research process among selected health care student groups is presented. The description of the methods distinguishes between 'StudData' and students' perceptions<sup>105</sup> of interprofessionalism and a survey being prepared by the author about students' perceptions of their own and of other professions' cultural capital. The empirical data in this study is based on two different surveys using pre-coded questionnaires<sup>106</sup>. This chapter describes its development, the selection of respondents, the process of data collection and response rate. At the end of the chapter statistical analyses are described and methodological consideration discussed.

One focus in this thesis is the implications of the implementation of a common core in a modified curriculum and the interprofessional educational programme VEKS, based on a

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<sup>105</sup> Perception is defined as the process we use to organise and interpret patterns of stimuli in the environment (Atkinson, Atkinson & Hilgard 1983:133).

<sup>106</sup> Leucht et al. (1990) developed a questionnaire to investigate students' perceptions in relation to measure changes of the students' perception of interprofessional practice. Parsell and Bligh (1999) designed a similar method aiming at measuring the 'Readiness for Interprofessional Learning Scale'. Carpenter (1995a) described a 'Health care Stereotypes Scale' to measure attitudinal change in medical and nursing students, using a ten-item 'identity scale' from Brown et al. (1986) to demonstrate the existence of professional stereotypes and mutual inter-group differentiation between medical and nursing students. Lindqvist et al. (2005) describes a questionnaire to investigate students' attitudes towards role of different health professions. Mackay (2004) has developed two questionnaires that being used as a part of an interprofessional evaluation strategy: a Generic Role Perception Questionnaire to measure the perception of the role of a range of professions and a Nursing Role Perception Questionnaire for measuring the perception of the role of a nurse. However, one can question about the utility of the last mention questionnaire has for evaluating of interprofessionalism education.

static-group design<sup>107</sup> (Gall, Borg & Gall 1996:507). The problems addressed in this first part of the study concern professional habitus and interprofessional cultural capital among some selected health care students and educational institutions, with uniprofessional education and different modes and duration of interprofessional education. Quasi – experiments have been carried out. Attention is also paid to variations between some educational institutions and various health care programmes. This has a non-experimental (Kleven 2002:265) or explorative design<sup>108</sup>. To strengthen the internal validity<sup>109</sup> in this study, responses by student groups from various health care programmes have been compared with replies from students from corresponding educations at different educational institutions<sup>110</sup>.

#### **4.1 ‘StudData’ and perception of interprofessionalism**

In order to compare perceptions of interprofessionalism among health care students, I have applied data collected from ‘StudData’. The Centre for the Study of Professions at Oslo University College (HiO) invited among others, Ålesund University College (HiAls), to take part in establishing a database, ‘StudData’<sup>111</sup>, for studies of recruitment and qualifications in profession-oriented studies. This chapter describes the research instrument, the sampling, the data-collection and the response rate connected to ‘StudData’.

##### **4.1.1 Development of a questionnaire concerning interprofessionalism**

One part of the ‘StudData’ questionnaire includes references to biosocial variables, like gender, age, profession and educational institution. This part has been developed by the Centre for the Study of Professions. Another part of the questionnaire concerns perceptions of interprofessionalism and is build on earlier research.

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<sup>107</sup> This design has two characteristics: research participants are not random assigned and a post-test is administered to two groups (later on marked as ‘Modified’ and ‘Unmodified’).

<sup>108</sup> This research is limited to give a quantitative indication of a person’s perceptions linked to interprofessionalism and professional cultural capital.

<sup>109</sup> Internal validity is achieved when the findings result only from the effect of the independent variable (Polit & Hungler 1991:235).

<sup>110</sup> The external validity indicates to which degree a study’s findings can be generalised (Yin 1994:33). The results in this study concern the collected data from health care students at some confined educational institutions and can in a limited extent be transferred to other health care professions and educational institutions.

<sup>111</sup> The Centre for the Study of Professions manages and coordinates the construction of the database, being financed of the Council on Research and Oslo University College. The purpose of the database is to stimulate to and make possible comparative research on professional education and practices across different professional programmes and institutions. The database is a long-term initiative which includes 20 professions/professional educations. StudData is a collaborative project with eleven involved educational institutions. For more information about the project StudData, see [www.hio.no/enheter/senter\\_for\\_profesjonsstudier\\_sps/studdata](http://www.hio.no/enheter/senter_for_profesjonsstudier_sps/studdata)



In designing the perception part of the questionnaire, with regard to interprofessionalism, ten statements about interprofessionalism have been used. I have found characteristics, expressed as positive and negative aspects of the concept of interprofessionalism from the American and British literature<sup>112</sup>. This part of the questionnaire I have applied in previous studies (Almås 2000, Almås 2001). The statements in the questionnaire are closed (see appendix 2).

Originally, 16<sup>113</sup> items intended to be the perception part of the questionnaire, ten statements mostly about interprofessional education and six dealing with interprofessional work. In ‘Unmodified’ (students without a common core), 16 items were included. However, in ‘Modified’ (students with a common core), only ten of the 16 statements were incorporated (mostly those concerning interprofessional education). This situation was revealed by the researcher after the questionnaires had been posted to the students. The ten items included, were the first of the 16 items. The omission of the six statements concerning interprofessional work probably did not influence the way the students replied on the ten items involving interprofessional education.

#### **4.1.2 Sampling and ‘StudData’**

Offers of cooperation from HiO, make it possible to have access to data from ‘StudData’. The data were collected from health care students at HiAls and HiO in order to compare perceptions of interprofessionalism:

- between the selected health care students
- between health care students from one specific educational programme at different educational institutions
- between health care students with modified (with a common core) and unmodified curricula (without a common core)
- between health care students attending uniprofessional and interprofessional education
- between health care students with a longer and shorter duration of interprofessional education.

The data consisted of two student groups: ‘Unmodified’ including students in the last semester before graduating, in five health care programmes<sup>114</sup> with an unmodified curriculum i.e. without a common core in their curriculum and ‘Modified’, comprising students in the

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<sup>112</sup> According to Polit & Hungler (1991:377), this is the significance of construct validity is in its linkage with theory and theoretical conceptualisation.

<sup>113</sup> In these studies, the 16 items were used as an index to indicate perception of interprofessionalism. Factor analysis showed two distinct factors, perceptions of interprofessional education and perceptions of interprofessional work. Cronbach’s alfa (to increase the construct validity, see Polit & Hungler 1991:377) was carried out to analyse the data and showed that Cronbach’s alfa was above 0.8 in all the analysis.

<sup>114</sup> Nursing, OT, PT, radiography and medical laboratory science students.

last semester before graduation, from the corresponding five health care programmes, all having a common core in the curricula. However, the common core in the curricula was implemented differently: as unprofessional or as interprofessional education, and with different duration, and is reflected in the sampling.

**4.1.3 StudData and data-collection**

Health care students with unmodified curricula started their education in 1998 and graduated in spring 2001. As figure 4 shows, a survey was carried out among the health care students ‘Unmodified’ during spring 2001. In 2000 the intervention by a modified curriculum for all health and social students was introduced. Students with modified curricula entered their programme. In spring 2003, an investigation was carried out before the students concerned, ended their studies (‘Modified’).

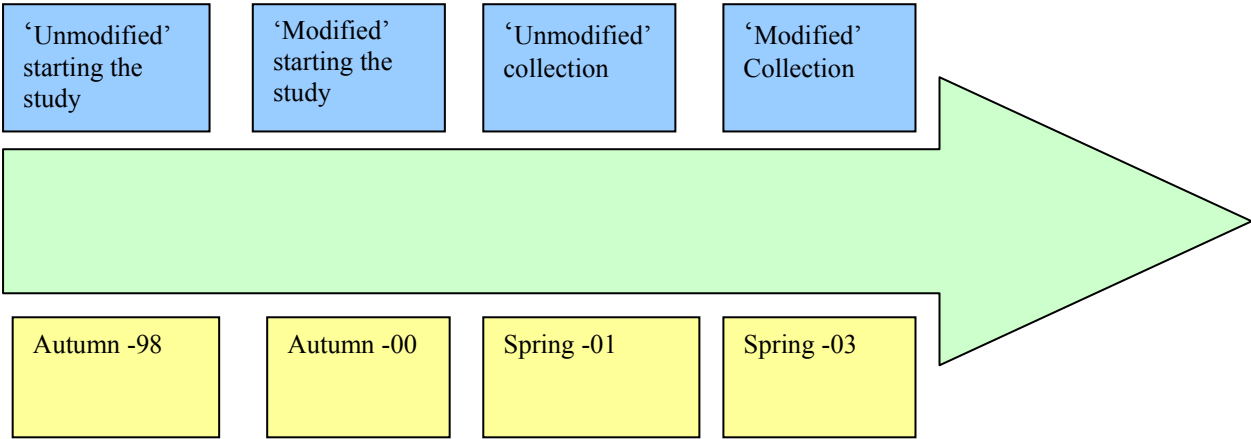


Figure 4: An overview of the process of data collection

Centre for the Study of Professions at HiO administrated and organised the ‘StudData’ collection. My contribution was to collect the questionnaires at HiAls.

**4.1.4 StudData and response rate**

Description of the health care students ‘Unmodified’ and response rate is shown in figure 2.

Table 2: Size of the whole population, samples and response rate from students at five health care studies in ‘Unmodified’

	<i>Population (total number)</i>	<i>Subjects sampled</i>	<i>Response rate %</i>
Nurse	506	379	74.9
Allied health	324	240	74.1
Total	830	619	74.6

According to table 2, over 600 students responded to the questionnaire. The response rate was fairly high, in total approximately  $\frac{3}{4}$ , even if the health care students in the last semester were in placements or doing their final projects.

Table 3 shows the distribution of students from five health care studies with modified curricula, giving response rates and an overview of how the common core in the curriculum has been implemented.

Table 3: Size of the whole population, samples and response rate for students from five health care programmes in ‘Modified’

	<i>Organising common core</i>	<i>Population (total number)</i>	<i>Subjects sampled</i>	<i>Response rate %</i>
<i>Ålesund University College</i>				
Nurse	Uniprofessional courses	112	66 (84)	58.9
Medical laboratory scientist	Uniprofessional courses	20	14 (17)	70.0
<i>Oslo University College</i>				
Nurse	Uniprofessional courses	327	140 (212)	42.8
OT	IPE during 3 years	57	36 (54)	63.2
PT	IPE during 3 years	121	78 (103)	64.5
Radiographer	IPE during 3 years	63	35 (59)	55.5
Medical laboratory scientist	IPE during 2 years	41	25 (33)	61.0
Total		741	394 (562)*	53.3**

\* Number in brackets indicates all students replying the questionnaire in their third year. Analysed data in this table include students replying the questionnaires both in their first and in their third year. 179 students did not reply the questionnaire in the first year. Information about how many questionnaires linked to each programme, being forwarded to students replying on the first questionnaire, has not been available.

\*\*The response rate was 70.3%  $((741-179) \times 100\% / 395)$ .

Less data were collected in ‘Modified’ compared with the data collected in ‘Unmodified’ (table 2) and the response rate was lower (54.9%). The response rate for the nursing students in Oslo was low (42.8%).

The students at ‘Modified’ consisted of students with uniprofessional education and students with different duration of interprofessional education (table 3). The content of the common core for nursing students at HiO was implemented as uniprofessional courses. In HiO, the medical laboratory science students participated the interprofessional programme VEKS I and II in their first and second year, while OT, PT and radiography students attended the interprofessional courses VEKS I, II and III in their first, second and third year. The nurse

education and medical laboratory scientist programme at HiAls had organised the common core as uniprofessional activities.

## **4.2 The Karolinska Institutet, Bergen University College and perception of professions' cultural capital**

To be able to compare perceptions of professions' cultural capital, I have constructed a questionnaire and collected the data from OT and PT students at the Karolinska Institutet (KI), Stockholm and at Bergen University College (HiB). This chapter describes the development of the research instrument, the sampling, the data-collection and the response rate.

### **4.2.1 Developing a questionnaire concerning two health professions' cultural capital**

The questionnaire distributed to OT and PT students at HiB and KI included biosocial variables in order to describe gender and age, earlier education and work experience in health care, before and in parallel with the study. The duration of work experience and practice connected to patients, may influence the students' perceptions of their own and of other health professions' cultural capital. Therefore the respondents were asked to state the length of their practice and to explain whether or not their work experience had been patient-related.

Another part of the questionnaire, concerning the students' perceptions of their own future professional cultural capital, and the students' perceptions of the cultural capital of another health profession, was developed for this project. The purpose of the perception section of the questionnaire was to identify cultural distinctions between OT and PT students at HiB and KI. The students' perceptions, or reflection, as a phronesis of the features of the field of cultural capital in their own futures professions indicates development of own role and is associated with the *reflective role* of interprofessional cultural capital (see chapter 2.6). Correspondingly, the students' perceptions of the features of the field of the cultural capital in other health care professions might indicate an integrated understanding of the professional roles of all group members and concerns *knowledge in practice* as a part of their interprofessional cultural capital.

In order to get a better insight in an OT's and a PT's cultural capital, I have chosen to interview representatives from the two professions. A semi-structured interview-guide was

carried out among four OT and four PT students in their 3<sup>rd</sup> year at HiO, among four teachers at the occupational therapy education in HiO, four teachers at the physiotherapy education in HiO and at HiB, four OTs having five years of work experience after graduating in Ålesund and Oslo and four PTs with five years working experience as a PT in Ålesund.

The following interview-guide (see appendix 4) was applied during the interview with OT students, OT professionals and teachers:

- Why did you decide to be an OT?
- What kind of competence<sup>115</sup> do you feel is important to have to practice as an OT? Competence in this context means skills, knowledge, attitude and values.
- What does it mean for you to be and practise as an OT?
- What kind of norms and rules according to your understanding, are connected to OT as a profession?
- When practising as an OT, what do you think is the most meaningful part of this practice?
- What do you think is characterising an OT?
- Can you describe a situation when you felt you could practice your professional competence as an OT?
- It is sometimes said that OT and PT have overlapping tasks connected to the patient or client. If you feel this is correct, what sort of work do you think this can include?
- If you agree: What conformity do you find between occupational therapy and physiotherapy?
- What do you think characterises the discipline physiotherapy?
- What distinguish an OT from a PT?

A corresponding interview-guide was used to interview PT students, PT professionals and teachers (replacing the word 'OT' by 'PT' and 'PT' by 'OT').

Each interview lasted approximately 30 minutes. They were not taped, but notes were taken at the time (see Kvale 2004:101). To guard against losing too much information by taking notes, a pilot interview was both taped and written down with a PT, applying the same questions. That interview also lasted about 30 minutes. The result showed an adequate correspondence between the information obtained from the taped interview and from the information written down directly.

Content analysis of the interviews, focusing on characteristics of OT and PT, were undertaken. These resulted in 20 statements including knowledge, skills and attitudes

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<sup>115</sup> 'Capability' is up to now an uncommon concept therefore 'competence' substituted 'capability' as a part of 'capability'.

attributed to the two professions as they were expressed by the 24 respondents. These items were included in the questionnaire (see appendix 5). Doing basic interviews with representatives from the professions provided an opportunity to select statements that were rooted in the professions' own perspective.

The questionnaire comprises statements concerning the characteristic of the two health profession groups. Perceptions of the statements were given by both groups. To avoid all the answers being weighted in one direction, one statement was negatively directed. The statements are, with one exception, closed. The open-ended question is linked to the biosocial part of the questionnaire and contains a question about which section at an upper secondary school, the respondent had attended. Several alternatives are offered. All possibilities are not included, but the student could write in others.

A pilot-test was carried out by forwarding 20 questionnaires to OT and PT students in their 2<sup>nd</sup> year at HiB. The reason for doing a pilot-test was to determine, insofar as possible, the questionnaire's clarity, research adequacy and freedom from bias (Polit & Hungler 1991:289). In total 16 questionnaires (80%) were returned<sup>116</sup>. Feedback from the students was considered and incorporated into the research instrument. The questionnaire was translated into Swedish from Norwegian. The first questionnaire being forwarded to the occupational therapy and physiotherapy educations at KI was rejected because of inadequacy in the translation. An improved version, with support from a Swedish PT working in Norway, was accepted.

#### **4.2.2 The Karolinska Institutet, Bergen University College and sampling**

OT and PT students at HiB and KI, with different dimension of interprofessional education, were selected in order to have an insight into the students' socialisation process. The two professions were chosen because I was familiar with the professions from my earlier research. The OT's and PT's educational programme were acquainted with different historical traditions, but today they nevertheless have some overlapping duties. Students at KI and HiB were selected since the dimensions of interprofessional education at the two organisations differ, e.g. concerning localisation, duration and stage (see chapter 2.3.3) and because of personal contacts at KI and HIB. In this way, the access to respondents was made feasible.

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<sup>116</sup> According to Gall, Borg and Gall (1996:298), if the responses are less than 66 percent of the pre-test sample, one should make changes in the questionnaire or in the procedures for administering before sending the questionnaire to the respondents in the main study.

The intention was to compare the OT students and PT students at HiO with the corresponding student groups at KI. However, the fact that the number OT and PT students at HiO were small, the statements describing OT's and PT's cultural capital at HiO were not included in the 'StudData'.

#### 4.2.3 The Karolinska Institutet, Bergen University College and data collection

I collected data from the OT students personally at HiB and KI. By being present at the data acquisition, a higher response rate was expected. This also made it possible to have some sort of standardisation of the situation. The students completed the questionnaire in the classroom when I was present; I informed the students about the research and answered questions. The respondents devoted approximately 30 minutes to answer the questions. Unfortunately an error had slipped into the questionnaire that the PT students at HiB had completed. I posted new questionnaires to each of the students before they started their practice period in autumn 2003. The collection of all questionnaires from HIB and KI was done in March 2003 (OT at HiB), May 2003 (OT and PT at KI) and August 2003 (PT at HiB).

#### 4.2.4 The Karolinska Institutet, Bergen University College and response rate

The distribution of OT and PT students at KI and HiB, subject sampled and the response rate are shown in table 4.

Table 4: Size of the whole population, samples and response rate from OT and PT students at HiB and KI

	<i>Population (total number)</i>	<i>Subjects sampled</i>	<i>Response rate (%)</i>
OT at Bergen University College	43	28	65.1
PT at Bergen University College	54	40	74.0 <sup>117</sup>
OT at The Karolinska Institutet	38	26	68.4
PT at The Karolinska Institutet	72	50	69.4
Total	207	144	69.6

In total of 144 students answered the questionnaire (table 4). The response rate was fairly consistent for the four student groups. After collecting the data, different analyses were carried out among the data from the two surveys. In the following chapter I will give a description of these analyses.

<sup>117</sup> The response rate was 40 % at the first collection. May be the students were more motivated to respond to the questionnaire the second time they completed the questionnaire.

### **4.3 Methods of data analyses**

This chapter, various applied analyses will be presented. In the analysis, the difference between variables is stated as significant when the chi square test had a degree of probability of 0.05 ( $p \leq 0.05$ ) or less. The risk or probability - the p-value- is indicated for each answer with a significant difference. The chi-square and the value of degree of freedom are quoted as well in all cross-tabulations. The chi-square test is estimated as valid<sup>118</sup> when the theoretical number in each category in the tables is less than 5 in more than 20% of cases and the theoretical number is less than one in any of the categories. All data were analysed using Statistical Package for Social Sciences (SPSS version 12) concerning cross-tabulations and one-way analyses, while STATlab was applied to carry out correspondence analysis and analysis of hierarchical classification.

#### **4.3.1 Different analyses**

##### *Cross-tables*

The cross-tables, or contingency tables, compared health care students with regard to biosocial (age, gender etc.).

##### *One-way analysis of variance*

Analysis of variance is a way to separate out and measure the factors which contribute to the total variance of a set of scores. The technique is used to measure the effect of categorical or nominal variables on an interval variable (Shaw 1995:81). The analysis is a statistical procedure that compares the amount of between-groups variance in individuals' scores with the amount of within-groups variance (Gall, Borg & Gall 1996:392). F-value is estimated as a function of variation *between* and *within* the groups. A significant result shows that the variation between the groups is greater than within the groups and this indicates statistical significant differences between the groups or if the variation between the different health care student groups is greater then within the groups.

One-way analysis of variance in this study investigates:

- what influence the students' perceptions of interprofessionalism as regards to educational institutions, profession studies' curricula, syllabi, duration of interprofessional education and biosocial variables

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<sup>118</sup> Siegel (1988:199) quotes Cochran (1954).



- what affects students' perceptions of their own and of other health profession's cultural capital, as regards to educational institutions, professions studies' curricula, modes of interprofessional education and biosocial variables

### *Correspondence analysis*

This analysis is a multivariate method to analyse data, handling different variables (Høyen 2004:7). The logic is inductive, i.e. one reaches a conclusion based on the researchers' data. Correspondence analysis is an explorative analysis and, according to Rosenlund (2000:3), it enables the researcher to uncover and describe hidden, complex structures in a data set. The analysis may suggest unexpected dimensions and relationships in the tradition of exploratory data analysis even if no-one expects 'theory' to emerge automatically from the data. The benefits of correspondence analysis lie in its unique abilities for representing rows and columns in a joint space. Greenacre (1994:3) says that transforming a table of numerical information into a graphical display, facilitates the interpretation of this information. Another advantage of correspondence analysis is that the measurement types are on nominal or categorical level and therefore the researcher can analyse at the least measurement (Hair et al. 1998:553). As all variables are treated as nominal variables, this method can, Rosenlund (2000:67) says, be described as a quantitative technique for the treatment of qualitative data.

The basis of the method is, as Bourdieu (1988:69) says, the table of deviations between the observed result and the result which would be obtained in the hypothetical case of random distribution. The analysis of correspondence represents these deviations visually in factorial plans which weight them accordingly to the distance from  $\chi^2$ : positive deviation (when the results observed are more frequent than the result expected), negative deviations (when they are less frequent) or zero deviation (when they are equal)<sup>119</sup>. In this way, weighting enables to detect strong links between phenomena that are relatively infrequent but not negligible. Correspondence analysis makes it possible to analyse together in one process a set of variables that have been analysed in other analyses, like one-way analysis of variance or cross-tables.

An analysis with a *hierarchical classification* - with the identical statistical units as in correspondence analysis - has been carried out to help the interpretation. The analysis consists, as Tarrou (1995:122) says, in assembling perceptions having, as far as possible,

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<sup>119</sup> The concepts of correspondence analysis are more geometric rather than statistical (Greenacre 1994:8). Pearson chi-square ( $\chi^2$ ) is the only statistical concept to which correspondence analysis is linked.

similar characteristics. First the two points having the same characteristics are added up. Then the process is repeated by calculating approximation between the first clustering and all the other points, in a way that the point being closest is added closest to the first clustering. In this way, it becomes like a tree being built ascending. The interpretation and description of the analysis are done in descending order.

Correspondence analysis and hierarchical classification were applied among OT and PT students at HiO, HiB and KI. As OT and PT students were considered in the both surveys, the intention was, by bringing out these analyses among the OT and PT students at HiO, to obtain a closer insight into the cultural capital of the occupational and physiotherapy professions.

#### ***4.4 Methodological considerations***

The purpose of the empirical study has, on the one hand, been to give an overview of the implications of introducing a common core in the curriculum concerning the students' perceptions of interprofessionalism and, on the other hand, to give an outline of the students' perceptions of some statements about parts of their own future cultural capital and correspondingly, to investigate some statements about aspects of the other health profession's cultural capital. This has been done in order to gain a better understanding of the cultural differences and similarities between various educational institutions, educational curricula and syllabi.

The limitations in a study like this lie primarily on the research methods. Applying questionnaires has been criticised because it cannot go deeply into the respondents' perceptions and feelings. The questionnaire does not give reasons for the choice of the response that each respondent gives (Tarrou 1996:126). The advantage of using questionnaire, however, is its standardisation, and highly structured design (Gall, Borg & Gall 1996: 290). Data collected can be analysed by different statistical programmes.

Correspondence analysis is primarily intended to reveal features in the data, rather than to confirm or reject hypotheses about the underlying process which generate the data. One of the strongest criticisms of correspondence analysis is the absence of hypothesis testing and thus the charge that it is 'theoryless' (Blasius 1994:23). However, as Broady (1990 in Rosendal

2000:26) points out: .. *the research methods ought to promote the generation of hypotheses and not the testing of such.*

The empirical data in this study is founded on the students' perceptions of interprofessionalism and of their own and of other professions' cultural capital and are presented in the following chapter. The analyses can only in some degree, verify the assumptions initially expressed about the field of interprofessional health care education, based upon Bourdieu's theory about the educational system.

## 5. Results

Results from the two empirical studies will be presented in this chapter, in order to provide an empirical background for further discussion of the theoretical derived approaches and of the initial assumptions about introducing a common core in the curriculum and about its influence on an expected interprofessional socialisation process. The results are based on two empirical studies, one being part of ‘StudData’ and the other from an inquiry I made among students at Bergen University College (HiB) and the Karolinska Institutet (KI).

### Part I

Part I presents results from the ‘StudData’ study among health care students at Oslo University College (HiO) and Ålesund University College (HiAls) about gender, age and educational programme. Further, this part describes students’ perceptions of interprofessionalism among nursing, OT, PT, radiography and medical laboratory science (MLS) students, with unmodified (without a common core) and modified curricula (with a common core), and the common core implemented as unprofessional education or with different duration of interprofessional education.

#### 5.1 A general description of the selected population at Oslo University College and Ålesund University College

In the following chapters I will describe characteristics<sup>120</sup> of health care students at HiO and HiAls. Firstly, a short presentation is given of the samples selected.

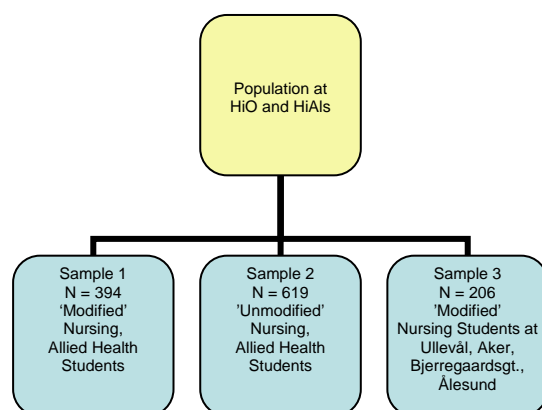


Figure 5: Population at HiO and HiAls

Figure 5 shows three different samples at HiO and HiAls.

<sup>120</sup> Variables with statements that may influence the students’ perception of health workers’ cultural capital are called ‘characteristics’.

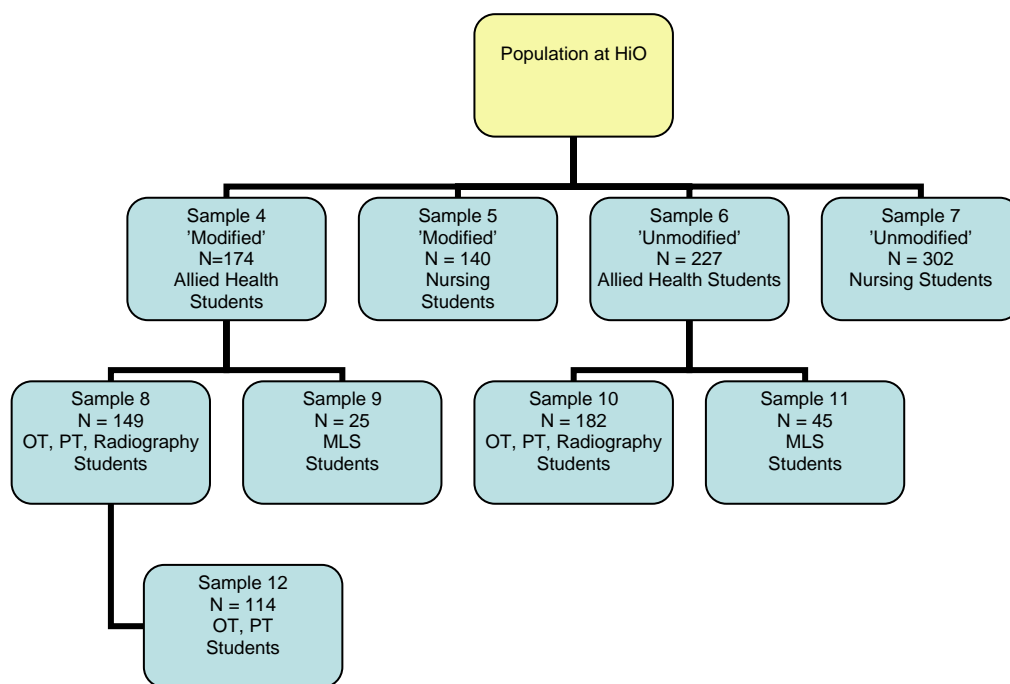


Figure 6: Population at HiO

Figure 6 shows nine different samples at HiO<sup>121</sup>.

Secondly, a general overview of five health care student groups 'Modified', i.e. with modified curricula and a common core at HiO and HiAls (sample 1 in figure 5), is distributed according to the students' age and gender, followed by a description and analysis of the students' response to statements about interprofessionalism from the five health care programmes.

Correspondingly, a general overview of nursing students<sup>122</sup> in 'Modified', separated in four educational institutions at HiO and at HiAls (sample 3 in figure 5), is presented, followed by a description of the nursing students' perception of interprofessionalism. Further, the focus is on five health care student groups<sup>123</sup> with unmodified curricula, at HiO and HiAls (sample 2 in figure 5). Then a presentation of a comparison of students' perception of interprofessionalism from 'Modified' (sample 1 in figure 5) and 'Unmodified' at HiO and HiAls (sample 2 in figure 5), is revealed. This is succeeded by a comparison of how the students at HiO valued interprofessionalism; a comparison between nursing students'

<sup>121</sup> The students and their responses at HiAls are not applied as a separate analysis.

<sup>122</sup> At HiO the nurse education is located at the Faculty of Nursing, while OT, PT, radiographer, medical laboratory scientist, pharmacy technician, dental mechanic are at the Faculty of Health Science.

<sup>123</sup> Pharmacy technician study and dental mechanic study at the time inquire occurred, was a two year programme.

responses, from 'Modified' (sample 5 in figure 6) and 'Unmodified' (sample 7 in figure 6), and the responses by allied health students at HiO from 'Modified' (sample 4 in figure 6) and 'Unmodified' (sample 6 in figure 6).

A comparison of students' perceptions of interprofessionalism among OT, PT and radiography students at HiO from 'Modified' (sample 8 in figure 6) and 'Unmodified' (sample 10 in figure 6) and medical laboratory science students at HiO from 'Modified' (sample 9 in figure 6) and 'Unmodified' (sample 11 in figure 6) is presented. Finally, a description of a correspondence analysis of the perceptions of interprofessionalism from the OT and PT students at HiO (sample 12 in figure 6) is summing up the results of the previous separate analyses of the OT and PT students in the first part of the empirical study.

## **5.2 Health care students from five professions with modified curricula at Oslo University College and Ålesund University College**

This chapter shows students' characteristics and their responses of how they expressed their perception of interprofessionalism. By comparing students' perception of interprofessionalism at different health care programmes, the intention was to investigate *to which degree professional cultural capital is important as a guide to students' habitus*.

### **5.2.1 A general overview of students at the five selected health care studies in 'Modified'**

In this chapter I will describe characteristics of students in five health care programmes at HiO and HiAls, all having modified curricula (sample 1 in figure 5). Figure 7 presents the distribution of student groups.

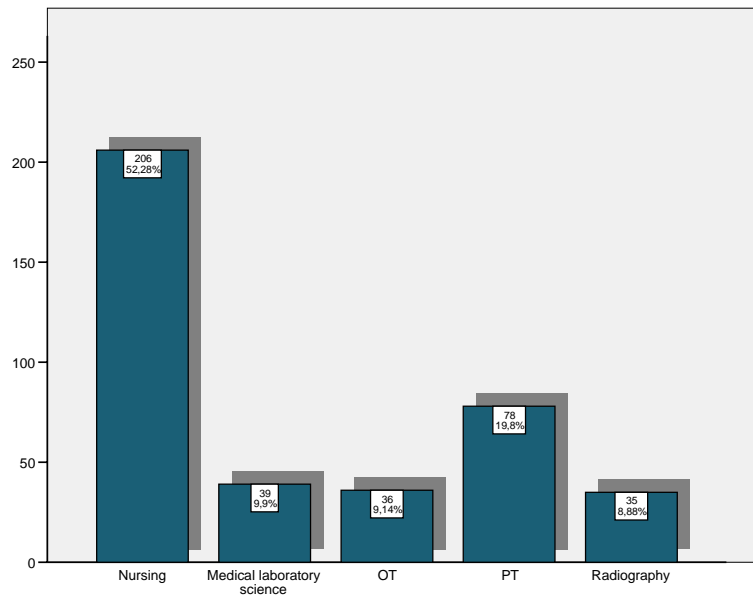


Figure 7: Distribution of the five student groups

Nursing student group itself, was greater (206 students) than the other groups together (188 students). The OT and radiography students were the smallest groups (respectively 36 and 35 students).

A first general overview of the selected population, separated in five groups, is further distributed according to the student's age and gender.

### 5.2.2 Age

The cross table analysis of the profiles of age among the students showed that there are no statistical significant differences between the responses by the students in the five groups concerning age.

### 5.2.3 Gender

A cross tabulation of the profiles of gender among the students, showed a statistical significant difference between the five groups (chi-square = 12.63, df = 4, p = 0.013). In table 5 the distribution of gender is revealed.

Table 5<sup>124</sup>: Distribution of student groups according to gender (N = 393, 1 did not reply)

<i>Gender</i>	<i>Nurse</i>		<i>Med. Lab. Scientist</i>		<i>OT</i>		<i>PT</i>		<i>Radio-grapher</i>		<i>Total</i>	
	N	%	N	%	N	%	N	%	N	%	N	%
<i>Female</i>	192	93.7	33	84.6	34	94.4	63	80.8	30	85.7	352	89.6
<i>Male</i>	13	6.3	6	15.4	2	5.6	15	19.2	5	14.3	41	10.4
<i>Total</i>	205	100	39	100	36	100	78	100	35	100	393	100

The selected population in total was predominantly female (almost 90%), according to table 5. Most of the nursing and OT students (more than 90%) were women, while among PT students, a fifth of the students were men.

#### 5.2.4 One-way analysis comparing students' perceptions of interprofessionalism in five health care programmes

A general distribution of the answers, given by the health care students, shows the following picture.

<sup>124</sup> Siegel (1988:199) quotes Cochran (1954) who recommend, that when chi-square tests where the degrees of freedom are greater than 1, not more than 20% of the categories ought to have a theoretical number less than 5 and none of the categories have less than 1. In table 5, 12.5 % (1) of the categories have a theoretical number lower than 5. Therefore the chi-square might not be valid. Nevertheless, the table presents data that might give an indication about differences between the student groups concerning the distribution of gender.



Table 6: The perception of interprofessionalism by students in five health care programmes with modified curricula

	<i>Mean</i> <sup>125</sup>	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>	
		<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. I will be better qualified as a health worker, after finishing my education if interprofessional education is included	1.94	54	13.9	306	78.6	29	7.5	0	0.0
2. Interprofessional education is not necessary in order to understand other related professions	2.92	2	0.5	87	22.5	239	61.8	59	15.2
3. Interprofessional education gives better knowledge about other professions	2.18	23	6.0	271	70.6	88	22.9	2	0.5
4. I feel that I would acquire knowledge about the roles in other professions through interprofessional education	1.89	69	17.8	291	75.2	27	7.0	0	0.0
5. Interprofessional education, leads to a holistic insight in health service	1.84	81	21.0	287	74.3	17	4.4	1	0.3
6. Knowledge about other health professions would make me a better health worker	1.87	79	20.5	279	72.5	24	6.2	3	0.8
7. I do not see the purpose of doing projects together with students from other profession-oriented studies	2.85	12	3.1	95	24.7	217	56.4	61	15.8
8. I find it interesting to have insight into other health professions	1.84	83	21.4	285	73.6	18	4.7	1	0.3
9. I do not see the value of teamwork across professional boundaries	2.95	5	1.3	79	20.4	233	60.4	69	17.9
10. I want to have more information about studies of other health professions	2.19	27	7.1	259	68.0	90	23.6	5	1.3

Table 6 shows that the majority of the health care students agreed (strongly or mildly) with statements concerning interprofessional education e.g. “interprofessional education leads to a holistic insight in health service” and “I find it interesting to have insight into other health professions”. The students disagreed (mildly or strongly) with statements being negative directed like “interprofessional education is not necessary in order to understand other related professions” and “I do not see the purpose of doing projects together with students from other profession-oriented studies”.

<sup>125</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

There were statistical significant differences between the perceptions from the health care students of all statements, except two:

- Interprofessional education is not necessary in order to understand other related professions
- I feel that I will acquire knowledge about the different roles in other professions through interprofessional education

These two statements may express an overall appreciation of the students' perception of the value of the interprofessional education as an entry to knowledge about other professions that do not distinguish between students coming from different profession-oriented studies.

Table 7 shows the results from a one-way variance analysis of the responses by students from five health care studies. According to this table, there were statistical significant differences between the students from different health care programmes concerning eight statements.

Table 7: One-way variance analysis of responses by students in five health care programmes, with modified curricula and the perception of interprofessionalism

<i>Variable</i>	<i>Sources</i>	<i>Degrees of freedom (df)</i>	<i>Sum of squares</i>	<i>Mean square</i>	<i>F</i>
1. I will be better qualified as a health worker, after finishing my education if interprofessional education is included	Between groups	4	3.898	0.974	4.829***
	Within groups	384	77.496	0.202	
	Total	388	81.393		
3. Interprofessional education gives better knowledge about other professions	Between groups	4	3.244	0.811	2.974*
	Within groups	379	103.358	0.273	
	Total	383	106.602		
5. Interprofessional education, leads to a holistic insight in health service	Between groups	4	2.855	0.714	3.049*
	Within groups	381	89.187	0.234	
	Total	385	92.041		
6. Knowledge about other health professions will make me a better health worker	Between groups	4	8.067	2.017	7.611***
	Within groups	380	100.696	0.265	
	Total	384	108.764		
7. I do not see the purpose of doing projects together with students from other profession-oriented studies	Between groups	4	14.366	3.591	7.544***
	Within groups	380	180.897	0.476	
	Total	384	195.262		
8. I find it interesting to have insight into other health professions	Between groups	4	3.941	0.985	4.145**
	Within groups	382	90.803	0.238	
	Total	386	94.744		
9. I do not see the value of teamwork across professional boundaries	Between groups	4	12.753	3.188	7.877***
	Within groups	381	154.211	0.405	
	Total	385	166.964		
10. I want to have more information about studies of other health professions	Between groups	4	6.531	1.633	5.271***
	Within groups	376	116.482	0.310	
	Total	380	123.013		

\* = significant  $\leq 0.05$

\*\* = significant  $\leq 0.01$

\*\*\* = significant  $\leq 0.001$

Tables 8-15 present the perceptions from each of the student groups for those statements where differences were statistical significant, ranking the groups from the lowest to the highest mean. The average mean is indicated by the dotted line.

***I will be better qualified as a health worker, after finishing my education if interprofessional education is included***

Table 8: Average distribution of answers from health care students at five professions (ranked) and the total distribution of the question concerning the students' perception of whether or not they would be better qualified as a health worker, after finishing their education if interprofessional education was included (question 1)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i> <sup>126</sup>	<i>Total mean</i>
OT	36	1.75	
Nurse	201	1.90	
			1.94
PT	78	1.96	
Medical laboratory scientist	39	2.08	
Radiographer	35	2.14	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 8). Table 8 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT students constituted the group that was most convinced about the importance of interprofessional education as a means of being better qualified as a health worker after finishing their education, if interprofessional education was included. The radiography students were least convinced about the importance of interprofessional education as a means of being a better health worker after finishing their education, if interprofessional education was included and were the group situated farthest from the mean.

The mean for the OT students corresponded to a value between 'strongly agree' and 'mildly agree' on the scale, while the mean for the radiography students was located at the level of 'mildly agree' on the scale.

<sup>126</sup> 1-1.4 = strongly agree. 1.5 – 2.4 = mildly agree, 2.5 – 3.4 = mildly disagree, 3.5 – 4.4 strongly disagree

***Interprofessional education gives better knowledge about other professions***

Table 9: Average distribution of answers from health care students at five professions (ranked) and for the total distribution of the question concerning the students' perception of whether or not interprofessional education gives better knowledge about other professions (question 3)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT	35	2.03	
Radiographer	35	2.11	
Nurse	198	2.14	
			2.18
Medical laboratory scientist	38	2.29	
PT	78	2.32	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 9). Table 9 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT students constituted the group that was most convinced about the importance of interprofessional education as a means of getting knowledge about other professions' role and the one situated farthest from the mean. The PT students were least convinced about the importance of interprofessional education as a means of getting knowledge about other professions' roles.

The mean for the OT students corresponded to the value 'mildly agree' on the scale, while the mean for the PT students was located at the level between 'mildly agree' and 'mildly disagree'.

***Interprofessional education, leads to a holistic insight in health service***

Table 10: Average distribution of answers from health care students at five professions (ranked) and for the total distribution of the question concerning the students' perception of whether or not interprofessional education, leads to a holistic insight in health service (question 5)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT	35	1.71	
Nurse	200	1.80	
			1.84
PT	78	1.86	
Radiographer	34	2.00	
Medical laboratory scientist	39	2.00	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 10). Table 10 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT students constituted the group that was most convinced about the importance of

interprofessional education as a means of getting a holistic insight in health service. The medical laboratory science and radiography students were least convinced about the importance of interprofessional education as a means of getting a holistic insight in health service and were the group situated farthest from the mean.

The mean for the OT students corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for the medical laboratory science and radiography students was located at the level of ‘mildly agree’ on the scale.

***Knowledge about other health professions will make me a better health worker***

Table 11: Average distribution of answers from health care students at five professions (ranked) and for the total distribution of the question concerning the students’ perception of whether or not knowledge about other health professions would make them a better health worker (question 6)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT	35	1.54	
Nurse	199	1.84	
PT	78	1.87	
			1.87
Radiographer	35	2.11	
Medical laboratory scientist	38	2.11	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 11). Table 11 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT students constituted the group that was most convinced about knowledge of other health professions would make them a better health worker and the one situated farthest from the mean. The medical laboratory science and radiography students were least convinced about knowledge of other health professions will make them a better health worker.

The mean for the OT students corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for the medical laboratory science and radiography students were located at the level of ‘mildly agree’ on the scale.

***I do not see the purpose of doing projects together with students from other profession-oriented studies***

Table 12: Average distribution of answers from health care students at five professions (ranked) and for the total distribution of the question concerning the students' perception of whether or not they saw the purpose of doing projects together with students from other profession-oriented studies (question 7)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Medical laboratory scientist	38	2.53	
Radiographer	35	2.77	
Nurse	199	2.78	
			2.85
PT	78	3.00	
OT	35	3.31	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 12). Table 12 ranks the student groups from those having the lowest to those having the highest mean. It shows that medical laboratory science students constituted the group that was least convinced about the purpose of doing projects with students from other professions. The OT students were most convinced about the purpose of doing projects with students from other professions and were the group situated farthest from the mean.

The mean for the medical laboratory science students corresponded to a value between 'mildly agree' and 'mildly disagree' on the scale, while the mean for the OT students were located at the level between 'mildly disagree' and 'strongly disagree' on the scale.

***I find it interesting to have insight into other health professions***

Table 13: Average distribution of answers from health care students at five professions (ranked) and for the total distribution of the question concerning the students' perception of whether or not they found it interesting to have insight into other health professions (question 8)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT	36	1.64	
Nurse	200	1.80	
			1.84
PT	78	1.87	
Radiographer	34	1.94	
Medical laboratory scientist	39	2.05	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 13). Table 13 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT student constituted the group that was interested to have insight into other health

professions. The medical laboratory science students were less interested to have insight into other health professions and were the group situated farthest from the mean.

The mean for the OT students corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for the medical laboratory science students was located at the level of ‘mildly agree’ on the scale.

***I do not see the value of teamwork across professional boundaries***

Table 14: Average distribution of answers from health care students at five professions (ranked) and for the total distribution of the question concerning the students’ perception of whether or not they saw the value of teamwork across professional boundaries (question 9)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Medical laboratory scientist	38	2.66	
Radiographer	35	2.86	
Nurse	199	2.88	
			2.95
PT	78	3.12	
OT	36	3.36	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 14). Table 14 ranks the student groups from those having the lowest to those having the highest mean. It shows that medical laboratory science students constituted the group that was least convinced about the value of teamwork across professional boundaries. The OT students were most convinced about the value of teamwork across professional boundaries and were the group situated farthest from the mean.

The mean for the medical laboratory science students corresponded to a value between ‘mildly agree’ and ‘mildly disagree’ on the scale, while the mean for the OT students was located at the level between ‘mildly disagree’ and ‘strongly disagree’ on the scale.

***I want to have more information about studies of other health professions***

Table 15: Average distribution of answers from health care students at five professions (ranked) and for the total distribution of the question concerning the students' perception of whether or not they wanted to have more information about studies of other health professions (question 10)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT	35	2.06	
Nurse	196	2.12	
PT	77	2.18	
			2.19
Medical laboratory scientist	38	2.45	
Radiographer	35	2.46	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the health care students from five professions (table 15). Table 15 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT students constituted the group that was most convinced about needing more information about other health studies. The radiography students were least convinced about needing more information about other health studies and were the group situated farthest from the mean.

The mean for the OT students corresponded to a value 'mildly agree' on the scale, while the mean for the radiography students was located at the level between 'mildly agree' and 'mildly disagree' on the scale.

***Summary***

*The results are summarised in table 16. It ranks students' perception of interprofessionalism from five educational programmes with modified curricula. The OT students expressed themselves more positive towards interprofessionalism compared with the other health care students, with regard to the eight statements with statistical significant differences in the answers from the five groups. They were the most positive group towards the importance of achieving knowledge about other professions, and how interprofessional education could be a tool to achieve this knowledge (statement 3, 6, and 8). This student group also expressed themselves more positively towards interprofessional education (statement 1 and 5), to have more information about other health professions (statement 10) and a more willingness to cooperate with other professions (statement 7 and 9), compared with the other groups.*



Table 16: Rank scaling of students' perception of interprofessionalism in five health care programmes<sup>127</sup>

Statements	1	3	5	6	7	8	9	10
Profession	Better qualified	Knowledge	Holistic insight	Health Worker	Projects	Insight	Value	Info
OT	+++	++	+++	+++	+++	+++	+++	+++
Nurse	++	++	++	++	++	++	++	++
PT	++	+	++	++	++	++	++	++
Radio-grapher	++	++	++	++	++	++	++	+
MLS	++	+	++	++	+	++	+	+

*The OT student group valued interprofessional education and interprofessional work more than the other groups. In general, the PT and nursing students seemed to have corresponding perception of interprofessionalism, while the medical laboratory science students seemed to be less aware of interprofessional education and work. This analysis of students' perceptions of interprofessionalism showed that professional cultural capital seemed to be important as a guide to students' perception of interprofessionalism and thus an indicator of their professional habitus and the relationship towards patients and other professionals.*

### 5.2.5 Health care students' perceptions of interprofessionalism and biosocial variables

One-way variance analysis of the students' perceptions of interprofessionalism compared with age showed no statistical significant difference. The results from a one-way variance analysis indicated statistical significant difference between the responses by female and male students concerning interprofessionalism are presented in figure 8.

<sup>127</sup> Ranking scale: +++ = 1.70 - 1.84, ++ = 1.85 - 1.99, + = 2.00 - 2.14, - = 2.15 - 2.29, -- = 2.30 - 2.44, --- = 2.45 - 2.60 (1.70 are located between strongly agree and mildly agree, and 2.60 are located between mildly agree and mildly disagree). Items 7 (project) and 9 (value) has been recoded: Strongly agree = strongly disagree, mildly agree = mildly disagree, mildly disagree = mildly agree, strongly disagree = strongly agree.

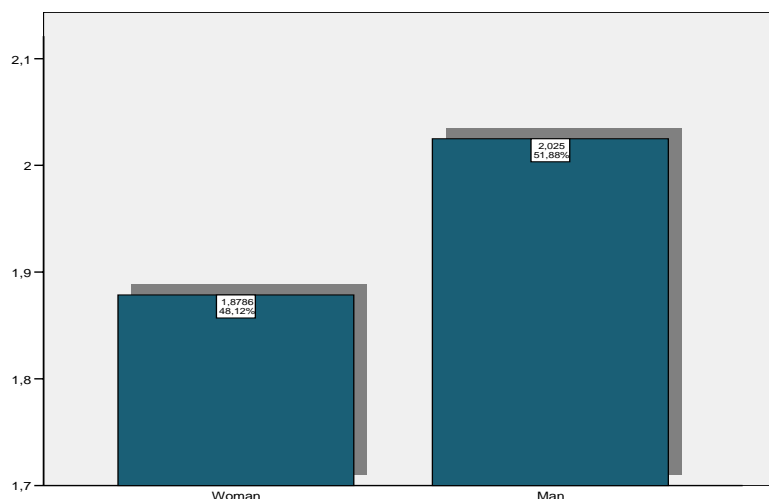


Figure 8: Students' responses about the statement "I feel that I would acquire knowledge about the roles in the other professions through interprofessional education"

Figure 8 shows that female health care students were more convinced that through interprofessional education they would achieve knowledge about other professions through interprofessional education.

### **5.3 Nursing students at four educational institutions**

This chapter presents characteristics of nursing students at four different educational institutions (sample 3), having modified curricula in the curriculum. In order to study *which interprofessional cultural capital characterises educational institutions of one specific profession*, a comparison between students' perceptions of interprofessionalism has been carried out. Three nurse education programmes were situated at HiO and one at HiAls, all having modified curricula, and the common core has been implemented as uniprofessional education.

#### **5.3.1 A general overview of the four selected nursing student groups**

Figure 9 shows an overview of the distribution of the nursing students at four educational institutions.

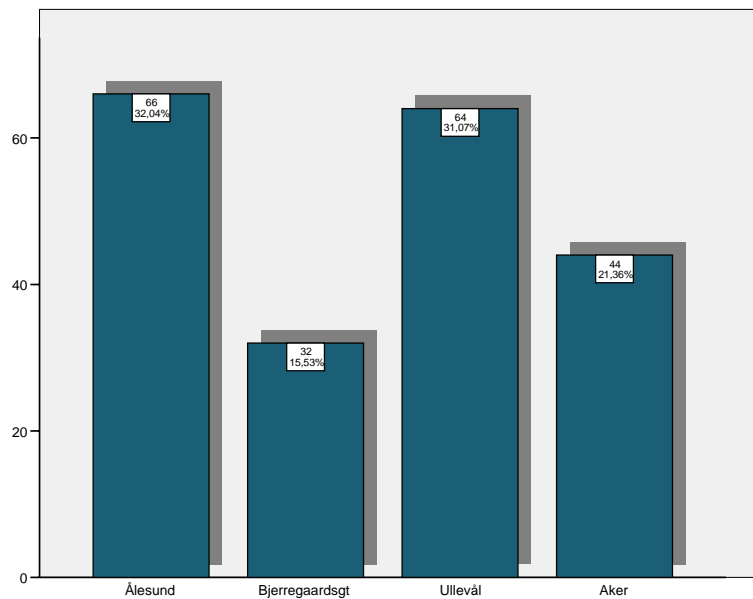


Figure 9: Distribution of the nursing students at ‘Modified’

The nursing student group at Ålesund University College was larger (66 students) than the other groups. That at Bjerragaardsgt., was the smallest (32 students).

The analysis showed that there were no statistical significant differences between the responses by the students in the four groups, concerning age and gender.

### 5.3.2 Analysis comparing students’ perceptions of interprofessionalism from four different nurse educational institutions

A general distribution of the answers, given by the nursing students at the four selected institutions, shows the following picture, with regard to their perception of interprofessionalism.

Table 17: The perceptions of interprofessionalism among nursing students with modified curricula

	Mean <sup>128</sup>	Strongly agree		Mildly agree		Mildly disagree		Strongly disagree	
		N	%	N	%	N	%	N	%
1. I will be better qualified as a health worker, after finishing my education if interprofessional education is included	1.90	33	16.4	156	77.6	12	6.0	0	0.0
2. Interprofessional education is not necessary in order to understand other related professions	2.92	1	0.5	47	23.5	120	60.0	32	16.0
3. Interprofessional education gives better knowledge about other professions	2.14	14	7.1	143	72.2	40	20.2	1	0.5
4. I feel that I would acquire knowledge about the roles in other professions through interprofessional education	1.84	39	19.5	154	77.0	7	3.5	0	0.0
5. Interprofessional education, leads to a holistic insight in health service	1.80	49	25.5	143	71.5	8	4.0	0	0.0
6. Knowledge about other health professions would make me a better health worker	1.84	42	21.1	148	74.4	7	3.5	2	1.0
7. I do not see the purpose of doing projects together with students from other profession-oriented studies	2.78	7	3.5	57	28.6	107	53.8	28	14.1
8. I find it interesting to have insight into other health professions	1.80	48	24.0	145	72.5	6	3.0	1	0.5
9. I do not see the value of teamwork across professional boundaries	2.88	3	1.5	46	23.1	122	61.3	28	14.1
10. I want to have more information about studies of other health professions	2.12	17	8.7	140	71.4	37	18.9	2	1.0

Table 17 shows that the majority of the nursing students agreed (strongly or mildly) with statements concerning interprofessional education e.g. “interprofessional education gives better knowledge about other professions” and “interprofessional education leads to a holistic insight in health care”. The students disagreed (mildly or strongly) with statements being negative directed like “interprofessional education is not necessary in order to understand other related professions” and “I do not see the purpose of doing projects together with students from other profession-oriented studies”.

<sup>128</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

There were no statistical significant differences between the responses by nursing students concerning the following statements:

- I will be better qualified as a health worker, after finishing my education if interprofessional education is included
- Interprofessional education is not necessary in order to understand other related professions
- Interprofessional education gives better knowledge about the roles in other professions through interprofessional education
- Interprofessional education, leads to a holistic insight in health service
- I do not see the purpose of doing projects together with students from other profession-oriented studies
- I do not see the value of teamwork across professional boundaries
- I want to have more information about studies of other health professions.

One-way variance analysis showed statistical significant differences between the responses by the students on three statements. These are presented in table 18.

Table 18: One-way variance analysis of the responses by nursing students with modified curricula at four educational institutions

<i>Variable</i>	<i>Sources</i>	<i>Degrees of freedom (df)</i>	<i>Sum of squares</i>	<i>Mean square</i>	<i>F</i>
4. I feel that I would acquire knowledge about the roles in other professions through interprofessional education	Between groups	3	2.432	0.811	4.133*
	Within groups	196	38.448	0.196	
	Total	199	40.880		
6. Knowledge about other health professions would make me a better health worker	Between groups	3	4.578	1.526	6.253**
	Within groups	195	47.593	0.244	
	Total	198	52.171		
8. I find I interesting to have insight into other health professions	Between groups	3	2.078	0.693	2.833*
	Within groups	196	47.922	0.245	
	Total	199	50.000		

\* = significant  $\leq 0.05$

\*\* = significant  $\leq 0.01$

Tables 19-21 present the perceptions from each of the student groups for those statements where differences were statistical significant, ranking the groups from the lowest to the highest mean. The average mean is indicated by the dotted line.

***I feel that I would acquire knowledge about the roles in other professions through interprofessional education***

Table 19: Average distribution of answers from nursing students at four institutions (ranked) and for the total distribution of the question concerning the students' perception about whether or not they felt that they would acquire knowledge about the roles in other professions through interprofessional education (question 4)

<i>Nurse educational institution</i>	<i>N</i>	<i>Mean</i> <sup>129</sup>	<i>Total mean</i>
Bjerregaardsgt.	32	1.69	
Ullevål	63	1.75	
			1.84
Aker	39	1.93	
Ålesund	65	1.95	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the nursing students coming from the four institutions (table 19). Table 19 ranks the student groups from those having the lowest to those having the highest mean. It shows that those at Bjerregaardsgt. were the student group that was most convinced about the importance of interprofessional education as a means of getting knowledge about the roles of other professions and the one situated farthest from the mean. The students at Ålesund were the least convinced group about the importance of interprofessional education as means of getting knowledge about the roles in other professions.

The mean for the nursing students at Bjerregaardsgt., corresponded to a value between 'strongly agree' and 'mildly agree' on the scale, while the mean for the students at Ålesund was located at level of 'mildly agree' on the scale.

***Knowledge about other health professions would make me a better health worker***

Table 20: Average distribution of answers from nursing students at four institutions (ranked) and for the total distribution on the question concerning the students' perception of whether or not knowledge about other health professions would make them a better health worker (question 6)

<i>Nurse educational institution</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Bjerregaardsgt.	32	1.59	
Ullevål	63	1.75	
			1.84
Ålesund	64	1.97	
Aker	40	2.00	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the nursing student coming from the four institutions (table 20). Table 20 ranks the student groups from those having the lowest to those having the highest mean. It

<sup>129</sup> 1-1.4 = strongly agree, 1.5 – 2.4 = mildly agree, 2.5 – 3.4 = mildly disagree, 3.5 – 4.4 strongly disagree

shows that those at Bjerregaardsgt. were the group that was most convinced about the importance of knowledge about other health professions as means of being a better health worker and were the one situated farthest from the mean. The students at Aker were least convinced about the importance of knowledge about other health professions as means of being a better health worker.

The mean for the nursing students at Bjerregaardsgt., corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for the students at Aker was located at the level of ‘mildly agree’ on the scale.

***I find it interesting to have insight into other health professions***

Table 21: Average distribution of answers from nursing students at four institutions (ranked) and for the total distribution on the question concerning the students’ perception of whether or not they found it interesting to have insight into other health professions (question 8)

<i>Nurse educational institution</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Bjerregaardsgt.	32	1.66	
Ullevål	63	1.71	
			1.80
Ålesund	64	1.89	
Aker	40	1.90	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the nursing student coming from the four institutions (table 21). Table 21 ranks the student groups from those having the lowest to those having the highest mean. It shows those at Bjerregaardsgt. were the group that were interested to have insight into other health professions and the one situated farthest from the mean. The students at Aker were least interest to have insight into other health professions.

The mean for the nursing students at Bjerregaardsgt., corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for the students at Aker was located at the level of ‘mildly agree’ on the scale.

***Summary***

*The results are summarised in table 22. It ranks the nursing students’ perception of interprofessionalism from four educational institutions. The nursing students from Aker and Ålesund tended to express themselves more negatively towards interprofessionalism compared with the students from Ullevål and Bjerregaardsgt., with regards to the three*

statements with statistical significant differences in the answers from the four groups. The students at Bjerregaardsgt. valued the outcome of interprofessional education more than the nursing students at the other educational institutions. The students at Aker and Ålesund were the least convinced groups about the value of interprofessional education, as a means of the importance of knowledge about other health professions (statement 6 and 8), and that this knowledge could be acquired through interprofessional activities (statement 4).

Table 22: Rank scaling of nursing student's perception of interprofessionalism at four educational institutions<sup>130</sup>.

Statements	4 Roles	6 Health worker	8 Insight
Educational institution			
Bjerregaardsgt.	+++	+++	+++
Ullevål	+++	+++	++
Ålesund	++	++	+
Aker	++	++	+

The nursing students at Bjerregaardsgt. were the most positive group about the importance of knowledge about other professions connected to being a better health worker and how interprofessional education could be a tool to achieve this knowledge compared with the students from the other educational institutions. This analysis of students' perceptions of interprofessionalism showed that different cultural capital tended to characterise educational institutions of one specific profession.

### 5.3.3 Nursing students' perception of interprofessionalism and biosocial variables

A one-way variance analysis of the student's perception of interprofessionalism compared with gender did not show statistical significant difference. Results from the one-way analysis, indicating statistical significant difference between the responses about interprofessionalism compared with age<sup>131</sup>, are presented in figure 10.

<sup>130</sup> Ranking scale: +++ = 1.70 - 1.84, ++ = 1.85 - 1.99, + = 2.00 - 2.14, - = 2.15 - 2.29, -- = 2.30 - 2.44, --- = 2.45 - 2.60 (1.70 are located between strongly agree and mildly agree, and 2.60 are located between mildly agree and mildly disagree).

<sup>131</sup> The age is linked to age at the entrance to the study.



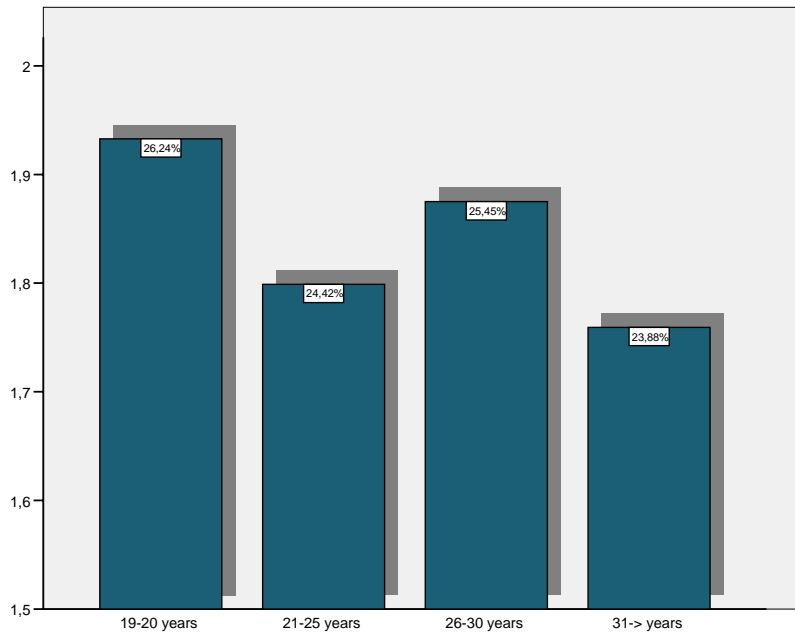


Figure 10: Students' response about the statement "I am interested to have insight into other health professions connected" with age

Figure 10 shows that the youngest students and the students between 26 and 30 years old considered it as less interesting to have insight into other health professions compared with the other age groups.

#### **5.4 Perceptions of interprofessionalism among students with modified and unmodified curricula at Oslo University College and Ålesund University College**

In this chapter I will describe characteristics of health care students at five health care programmes at HiO and HiAls, with unmodified curricula (sample 2 in figure 5). A first general overview of the selected population separated in four groups, are further distributed according to the students' age and gender followed by a description of their responses about interprofessionalism. By comparing perception of interprofessionalism among students with modified (sample 1 in figure 5) and unmodified curricula, the intention was to investigate *to what extent students with modified curriculum value interprofessionalism more highly than students with unmodified curriculum*. A one-way analysis of variance of the responses by students at five health care professions with modified and unmodified curricula shows the following picture.

### 5.4.1 A general overview of the five selected student groups at 'Unmodified'

Figure 11 shows an overview of the distribution of health care students, with unmodified curricula.

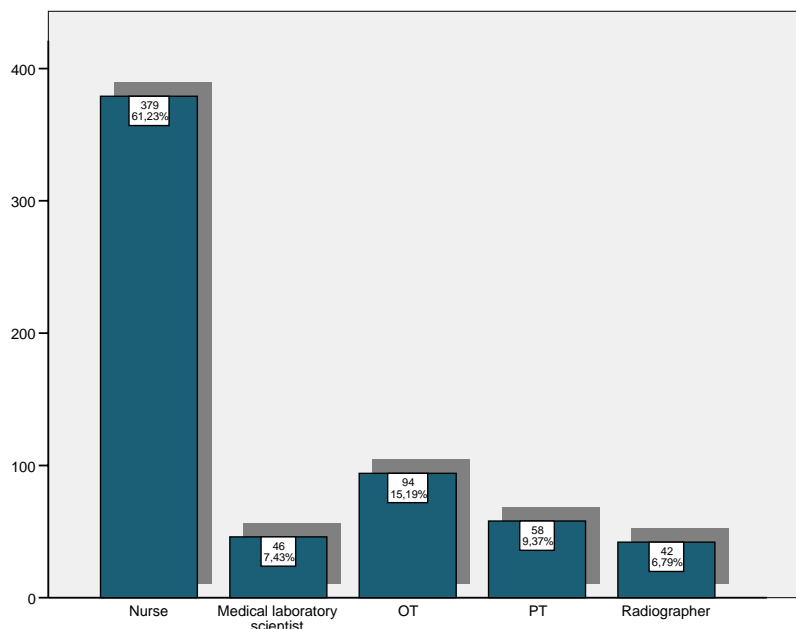


Figure 11: Distribution of the student groups

The nursing student group (379 students) was larger than the other groups together. The OT and radiography students belonged to the smallest (respectively 46 and 42).

### 5.4.2 Age

The distribution of student groups according to age is presented in table 23. A cross tabulation of the profiles of age among the students, showed a statistical significant difference between the groups (chi-square = 26.188, df = 8, p = 0.001).

Table 23<sup>132</sup>: Distribution of age and student groups (N = 598, 21 did not reply)

Age	Nursing		MLS		OT		PT		Radiography		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
21-25	157	43.3	32	57.1	22	52.4	44	47.8	25	55.6	280	46.8
26-30	130	35.8	16	28.6	9	21.4	44	47.8	10	22.2	209	35.0
> 30	76	20.9	8	14.3	11	26.2	4	4.4	10	22.2	109	18.2
Total	363	100	56	100	45	100	92	100	42	100	598	100

<sup>132</sup> In table 23, 6.6% (1) of the categories have a theoretical number lower than 5. Therefore the chi-square might not be valid. Nevertheless, the table presents data that might give an indication about the differences between the student groups concerning the distribution of age.

As shown in table 23, most of the students were young (46.8% were between 21 and 25 years old). The majority of the medical laboratory scientist, OT and radiography students were between 21 and 25 years old (respectively 57.1, 52.4 and 55.6 years old), while nursing students were older (56.7% were more than 25 years).

### 5.4.3 Gender

The distribution of the student groups according to gender is presented in table 24. A cross tabulation of the profiles of gender among the students, showed statistical significant differences between the student groups (chi-square = 20.20, df = 4, p = 0.000).

Table 24<sup>133</sup>: Distribution of gender and student groups (N = 601, 18 did not reply)

<i>Gender</i>	<i>Nursing</i>		<i>MLS</i>		<i>OT</i>		<i>PT</i>		<i>Radiography</i>		<i>Total</i>	
	N	%	N	%	N	%	N	%	N	%	N	%
Female	328	89.6	53	94.6	38	84.4	68	73.9	34	81.0	521	86.7
Male	38	10.4	3	5.4	7	15.6	24	26.1	8	19.0	80	13.3
Total	366	100	56	100	45	100	92	100	42	100	601	100

Table 24<sup>134</sup> shows that the selected population in total was dominated of a female population (86.7% are women). Most of the medical laboratory science students (94.6%) were women.

### 5.4.4 Perception of interprofessionalism among different health care students with unmodified curricula

A general distribution of the answers given by the students about their perception of interprofessionalism in five health care programmes at HiO and HiAls shows the following picture. Table 25 shows a general overview of the distribution of the answers given by the students at five health professions (nursing, OT, PT, radiography and medical laboratory science students).

<sup>133</sup> In table 24, 10.0% (1) of the categories have a theoretical number lower than 5. Therefore the chi-square might not be valid. Nevertheless, the table presents data that might give an indication about the differences between the student groups concerning the distribution of age.

<sup>134</sup> Because of rather small differences between the distributions of the gender among the student groups 'Modified' (table 4) and 'Unmodified' (table 23), further analysis concerning gender has not been carried out.

Table 25: The perception of interprofessionalism from students in five health care programmes, with unmodified curricula

<i>Variable</i>	<i>Mean</i> <sup>135</sup>	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>	
		<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. I will be better qualified as a health worker, after finishing my education if interprofessional education is included	1.94	93	15.6	450	75.5	48	8.1	5	0.8
2. Interprofessional education is not necessary in order to understand other related professions	2.82	7	1.2	158	26.7	362	61.1	65	11.0
3. Interprofessional education gives knowledge about other professions	2.25	21	3.6	409	69.7	148	25.2	9	1.5
4. I feel that I would acquire knowledge about the roles in other professions through interprofessional education	1.92	103	17.3	440	73.9	51	8.6	1	0.2
5. Interprofessional education, leads to a holistic insight in health service	1.88	115	19.3	437	73.6	41	6.9	1	0.2
6. Knowledge about other health professions would make me a better health worker	1.96	91	15.3	440	74.0	59	9.9	5	0.8
7. I do not see the purpose of doing projects together with students from other profession-oriented studies	2.71	30	5.1	170	28.9	330	56.1	58	9.9
8. I find it interesting to have insight into other health professions	1.88	112	18.1	443	74.8	34	5.8	30	0.5
9. I do not see the value of teamwork across professional boundaries	2.84	18	3.1	148	25.0	338	57.2	87	14.7
10. I want to have more information about studies of other health professions	2.15	42	7.1	435	73.2	106	17.8	11	1.9

Table 25 shows that most of the health care students agreed (strongly or mildly) with statements expressing a positive perception of interprofessional education e.g. “I find it interesting to have insight into other health professions” and “interprofessional education leads to a holistic insight in health service”. The students disagreed (mildly or strongly) with statements being negative directed like “interprofessional education is not necessary in order to understand other related professions” and “I do not see the purpose of doing projects together with students from other profession-oriented studies”.

<sup>135</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

### 5.4.5 One-way analysis comparing students' perception of interprofessionalism and different curricula

There were no statistical significant differences between the responses by the students with modified curricula (sample 1) and with unmodified curricula (sample 2) on the following statements:

- I will be better qualified as a health worker, after finishing my education if interprofessional education is included
- Interprofessional education is not necessary in order to understand other related professions
- Interprofessional education gives knowledge about other professions
- I feel that I would acquire knowledge about the roles in other professions through interprofessional education
- Interprofessional education, leads to a holistic insight in health service
- I find it interesting to have insight into other health professions
- I want to have more information about studies of other health professions

These statements express all perceptions concerning the importance of interprofessional education linked to having knowledge about other professions. The students with modified and unmodified curricula seemed to see the value of having knowledge about other health professions they in the future will have to cooperate with.

The one-way analysis showed statistical significant differences between the answers from students in the five selected health care programmes with modified and unmodified curricula (table 26).

Table 26: One-way variance analysis of responses by OT, PT, radiography, nursing and medical laboratory science students, with modified and unmodified curricula

<i>Variable</i>	<i>Sources</i>	<i>Degrees of freedom (df)</i>	<i>Sum of squares</i>	<i>Mean square</i>	<i>F</i>
6. Knowledge about other health professions would make me a better health worker	Between groups	1	1.268	1.268	4.494*
	Within groups	891	251.433	0.282	
	Total	892	252.701		
7. I do not see the purpose of doing projects together with students from other profession-oriented studies	Between groups	1	3.838	3.838	7.694**
	Within groups	884	441.015	0.499	
	Total	885	444.853		
9. I do not see the value of teamwork across professional boundaries	Between groups	1	2.035	2.035	4.430*
	Within groups	890	408.847	0.459	
	Total	891	410.882		

\* = significant  $\leq 0.05$

According to table 26, there were statistical significant differences between OT, PT, radiography, nursing and medical laboratory science students' expression of interprofessionalism, with modified and unmodified curricula on three statements. These results are shown in figure 12.

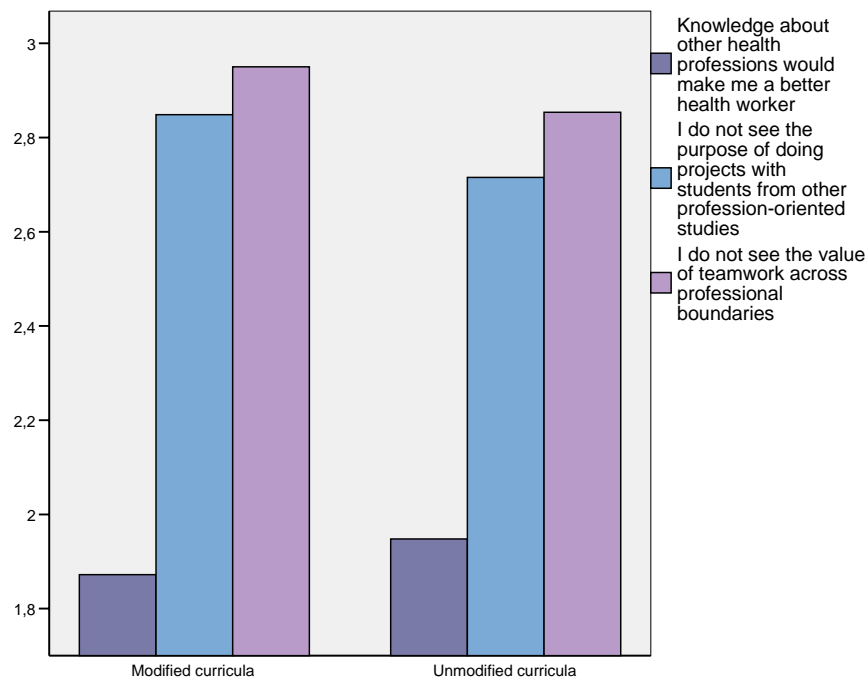


Figure 12: Students' responses to statements about interprofessionalism<sup>136</sup>

Figure 12 shows that students, with modified curricula, were the most convinced that knowledge about other health professions would make them a better health worker. This student group also saw the purpose of doing projects together with students from other profession-oriented studies and the value of working across professional boundaries.

### **Summary**

*The analysis of students' perceptions of interprofessionalism showed that students with modified curricula seemed to value interprofessionalism more highly than students with unmodified curricula.*

<sup>136</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

## **5.5 Analysis comparing students' perceptions of interprofessionalism and a common core in the curricula implemented as uniprofessional or interprofessional education at Oslo University College**

In this chapter I describe characteristics of allied health students with modified curricula (sample 4) and with unmodified curricula (sample 6) and nursing students with modified curricula (sample 5) and with unmodified curricula (sample 7) at HiO<sup>137</sup>. By comparing students' perception of interprofessionalism before and after the introduction of a common core, implemented as uniprofessional or interprofessional education within one organisation, the intention was to study *to what extent implementing the common core as interprofessional education was a precondition for improving students' habitus as health workers*.

The common core for all health care educations at HiO was implemented both as uniprofessional education in the nurse programme and interprofessional educations in the programme of allied health<sup>138</sup>.

### **5.5.1 A general overview of students in five health care programmes, with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education**

Figure 13 presents the overall distribution of nursing and allied health students with modified and unmodified curricula.

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<sup>137</sup> To compare the responses by students from educational programmes within one educational organisation, where the common core has been implemented differently, the HiO was chosen. The nurse and the medical laboratory science programme at HiAls had both implemented the common core as uniprofessional education.

<sup>138</sup> The OT, PT and radiographer programme have 30 credits as interprofessional education and the medical laboratory science programme has 15 credits as interprofessional education.

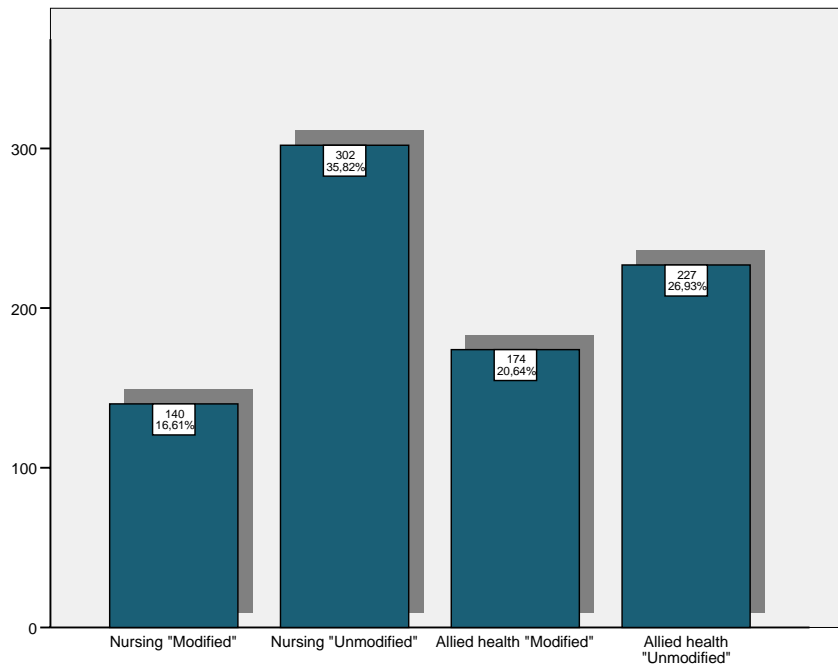


Figure 13: Distribution of the student groups

The nursing students with unmodified curricula (302 students) were the largest group. Those with modified curricula were the smallest (140 students).

### **5.5.2 One-way analysis comparing students' perception of interprofessionalism, with modified and unmodified curricula, and the common core implemented as unprofessional or interprofessional education**

A one-way variance analysis showed statistical significant differences between the responses by students in nursing and allied health care programmes at HiO, with modified and unmodified curricula, implemented as unprofessional or interprofessional education. These are presented in table 27.



Table 27: One-way variance analysis of health care students' responses in five educational programmes, with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education

<i>Variable</i>	<i>Sources</i>	<i>Degrees of freedom (df)</i>	<i>Sum of squares</i>	<i>Mean square</i>	<i>F</i>
1. I will be better qualified as a health worker, after finishing my education if interprofessional education is included	Between groups	3	7.677	2.559	10.792**
	Within groups	813	192.769	0.237	
	Total	816	200.446		
2. Interprofessional education is not necessary in order to understand other related professions	Between groups	3	5.226	1.742	4.514*
	Within groups	809	312.213	0.386	
	Total	812	317.439		
3. Interprofessional education gives knowledge about other professions	Between groups	3	4.871	1.624	5.823**
	Within groups	799	222.812	0.279	
	Total	802	227.684		
4. I feel that I will acquire knowledge about the different roles in other professions through interprofessional education	Between groups	3	8.147	2.716	11.195**
	Within groups	813	197.217	0.243	
	Total	816	205.364		
5. Interprofessional education, leads to a holistic insight in health service	Between groups	3	7.299	2.433	10.275**
	Within groups	810	191.811	0.237	
	Total	813	199.111		
6. Knowledge about other health professions will make me a better health worker	Between groups	3	3.992	1.331	4.650*
	Within groups	811	232.106	0.286	
	Total	814	236.098		
7. I do not see the purpose of doing projects together with students from other profession-oriented studies	Between groups	3	18.072	6.024	12.436**
	Within groups	803	388.979	0.484	
	Total	806	407.051		
8. I find it interesting to have insight into other health professions	Between groups	3	3.321	1.107	4.495*
	Within groups	811	199.715	0.246	
	Total	814	203.036		
9. I do not see the value of teamwork across professional boundaries	Between groups	3	13.424	4.475	9.905**
	Within groups	809	365.471	0.452	
	Total	812	378.895		
10. I want to have more information about studies of other health professions	Between groups	3	6.050	2.017	6.312**
	Within groups	807	257.810	0.319	
	Total	810	263.859		

\* = significant  $\leq 0.01$

\*\* = significant  $\leq 0.001$

Table 27 shows that there were statistical significant differences between the responses by the students about all the ten statements at the health care programmes with unmodified and modified curricula, and the common core implemented as either uniprofessional or interprofessional education.

Tables 28-38 present the perceptions from each of the student groups for those statements where differences were statistical significant, ranking the groups from the lowest to the highest mean. The average mean is indicated by the dotted line.

***I will be better qualified as a health worker, after finishing my education if interprofessional education is included***

Table 28: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as unprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they would be better qualified as a health worker, after finishing their education if interprofessional education was included (question 1)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Nurse 'Unmodified'	289	1.82	
Nurse 'Modified'	135	1.88	
			1.93
Allied health 'Modified'	174	1.96	
Allied health 'Unmodified'	219	2.05	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions, with modified and unmodified curricula (table 28).

Table 28 ranks the student groups from those having the lowest to those having the highest mean. It shows that nursing students with unmodified curricula constituted the group that was most convinced that they would be better qualified as a health worker, after finishing their education, if interprofessional education was included. The allied health students with unmodified curricula were least convinced that they would be better qualified as a health worker, after finishing their education if interprofessional education was included and were the group situated farthest from the mean.

The mean for the nursing students with unmodified curricula, corresponded to the value 'mildly agree' on the scale, and the mean for the allied health students with unmodified curricula was located at the level between 'mildly agree'.

The difference between the mean of the replies about whether or not they would be better qualified as a health worker after finishing their education if interprofessional education was included, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as unprofessional education.

***Interprofessional education is not necessary in order to understand other related professions***

Table 29: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as unprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not interprofessional education is necessary in order to understand other related professions (question 2)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Allied health 'Unmodified'	218	2.74	
			2.87
Allied health 'Modified'	173	2.91	
Nurse 'New'	135	2.92	
Nurse 'Unmodified'	287	2.92	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions, with modified and unmodified curricula (table 29).

Table 29 ranks the student groups from those having the lowest to those having the highest mean. It shows that allied health students with unmodified curricula constituted the groups that were least convinced about interprofessional education is necessary in order to understand other related professions and the one situated farthest from the mean. The nursing students, having unmodified and modified curricula were more convinced that interprofessional education is necessary in order to understand other related professions.

The mean for the allied health students with unmodified curricula corresponded to a value between 'mildly agree' and 'mildly disagree' on the scale, while the mean for the nursing students, having unmodified and modified curricula, was located at the level of 'mildly disagree'.

There was a difference between the mean of the replies about whether or not interprofessional education is necessary in order to understand other related professions from the allied health students with unmodified curricula and the allied health students with the common core implemented as interprofessional education. Among the nursing students with modified and unmodified curricula and the common core implemented as unprofessional education, there was no difference between the responses about this statement.

***Interprofessional education gives better knowledge about other professions***

Table 30: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not interprofessional education gives knowledge about other professions (question 3)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Nurse 'Modified'	132	2.08	
Nurse 'Unmodified'	281	2.18	
			2.21
Allied health 'Modified'	172	2.21	
Allied health 'Unmodified'	218	2.32	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions, with modified and unmodified curricula (table 30).

Table 30 ranks the student groups from those having the lowest to those having the highest mean. It shows that nursing students with modified curricula were the group that was most convinced about the importance of interprofessional education as means of getting knowledge about other professions and the one situated farthest from the mean. The allied health students with unmodified curricula were least convinced about the importance of interprofessional education as means of getting knowledge about other professions.

The mean for the nursing students with modified curricula corresponded to a value of 'mildly agree' on the scale, while the mean for the allied health students with unmodified curricula was located at the level between 'mildly agree' and 'mildly disagree'.

The difference between the mean of the replies about whether or not interprofessional education gives better knowledge about other professions, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as uniprofessional education.

***I feel that I will acquire knowledge about the different roles in other professions through interprofessional education***

Table 31: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception about whether or not they felt that they would acquire knowledge about the roles in other professions through interprofessional education (question 4)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Nurse 'Modified'	135	1.79	
Nurse 'Unmodified'	289	1.82	
			1.90
Allied health 'Modified'	174	1.93	
Allied health 'Unmodified'	219	2.04	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions, with modified and unmodified curricula (table 31).

Table 31 ranks the student groups from those having the lowest to those having the highest mean. It shows that nursing students with modified curricula were the group that was most convinced about the importance of interprofessional education as a means of getting knowledge about other professions' roles. The allied health students with unmodified curricula were least convinced about the importance of interprofessional education as means of getting knowledge about other professions' roles and were situated farthest from the mean.

The mean for the nursing students with modified curricula corresponded to a value of 'mildly agree' on the scale, and the mean for the allied health students with unmodified curricula was located at the level of 'mildly agree'.

The difference between the mean of the replies about whether or not they would acquire knowledge about the different roles in other professions through interprofessional education, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as uniprofessional education.

***Interprofessional education, leads to a holistic insight in health service***

Table 32: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not interprofessional education, leads to a holistic insight in health service (question 5)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Nurse 'Modified'	135	1.73	
Nurse 'Unmodified'	289	1.78	
			1.85
Allied health 'Modified'	172	1.87	
Allied health 'Unmodified'	218	1.99	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions, with modified and unmodified curricula (table 32).

Table 32 ranks the student groups from those having the lowest to those having the highest mean. It shows that nursing students with modified curricula were the group that was most convinced about the importance of interprofessional education as a means of getting a holistic insight in health service. The allied health students with unmodified curricula were least convinced about the importance of interprofessional education as a means of getting a holistic insight in health service and the group situated farthest from the mean on the scale.

The mean for the nursing students with modified curricula corresponded to a value between 'strongly agree' and 'mildly agree' on the scale, while the mean for the allied health students with unmodified curricula was located at the level of 'mildly agree'.

The difference between the mean of the replies about whether or not interprofessional education leads to a holistic insight in health service, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as uniprofessional education.

***Knowledge about other health professions will make me a better health worker***

Table 33: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as unprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not knowledge about other health professions would make them a better health worker (question 6)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Nurse 'Modified'	135	1.79	
Allied health 'Modified'	172	1.88	
Nurse 'Unmodified'	289	1.91	
			1.91
Allied health 'Unmodified'	219	2.00	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions, with modified and unmodified curricula (table 33).

Table 33 ranks the student groups from those having the lowest to those having the highest mean. It shows that nursing students with modified curricula constituted the group that was most convinced that knowledge about other health professions would make them a better health worker, and the one situated farthest from the mean on the scale. The allied health students with unmodified curricula were least convinced that knowledge about other health professions would make them a better health worker.

The mean for the nursing students with modified curricula corresponded to a value of 'mildly agree'. The mean for the allied health scientist students with unmodified curricula was located at the level of 'mildly agree'.

The difference between the mean of the replies about whether or not knowledge about other health professions would make them better health workers, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, corresponds with the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as unprofessional education.

***I do not see the purpose of doing projects together with students from other profession-oriented studies***

Table 34: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they saw the purpose of doing projects together with students from other profession-oriented studies (question 7)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Allied health 'Unmodified'	218	2.55	
			2.78
Nurse 'Modified'	134	2.83	
Nurse 'Unmodified'	283	2.85	
Allied health 'Modified'	172	2.94	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions with modified and unmodified curricula (table 34).

Table 34 ranks the student groups from those having the lowest to those having the highest mean. It shows that allied health students with unmodified curricula were the group that were least convinced about the purpose of doing projects with students from other professions and are the one farthest from the mean. The allied health students with modified curricula were most convinced about the purpose of doing projects with students from other professions.

The mean for the allied health students with unmodified curricula corresponded to a value between 'mildly agree' and 'mildly disagree' on the scale, while the mean for the allied health students with modified curricula was located at the level of 'mildly disagree'.

The difference between the mean of the replies about whether or not they saw the purpose of doing projects together with students from other profession-oriented studies, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as uniprofessional education.



***I find it interesting to have insight into other health professions***

Table 35: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they found it interesting to have insight into other health professions (question 8)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Nurse 'Modified'	135	1.76	
Nurse 'Unmodified'	288	1.82	
			1.85
Allied health 'Modified'	173	1.87	
Allied health 'Unmodified'	219	1.94	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions with modified and unmodified curricula (table 35).

Table 35 ranks the student groups from those having the lowest to those having the highest mean. It shows that nursing students with modified curricula were the group that was interest to have insight into other health professions and were the group, together with the allied health students with unmodified curricula, situated farthest from the mean. The allied health students with unmodified curricula were least interested to have insight into other health professions.

The mean for the nursing students with modified curricula corresponded to a value of 'mildly agree' on the scale, while the mean for the medical laboratory science students with unmodified curricula was located at the level of 'mildly agree'.

The difference between the mean of the replies about whether or not they found it interesting to have insight into other health professions, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as uniprofessional education.

***I do not see the value of teamwork across professional boundaries***

Table 36: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they saw the value of teamwork across professional boundaries (question 9)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Allied health 'Unmodified'	220	2.70	
			2.91
Nurse 'Modified'	134	2.93	
Nurse 'Unmodified'	147	2.97	
Allied health 'Modified'	173	3.04	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions with modified and unmodified curricula (table 36).

Table 36 ranks the student groups from those having the lowest to those having the highest mean. It shows that allied health students with unmodified curricula were the group that were least convinced about the value of teamwork across professional boundaries, and the one situated farthest from the mean. The allied health students with modified curricula were most convinced about the value of teamwork across professional boundaries.

The mean for the allied health students with unmodified curricula corresponded to a value between 'mildly agree' and 'mildly disagree' on the scale, while the mean for the allied health students with modified curricula was located at the level of 'mildly disagree'.

The difference between the mean of the replies about whether or not they saw the value of teamwork across professional boundaries, from the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the nursing students with modified and unmodified curricula and the common core implemented as uniprofessional education.

***I want to have more information about studies of other health professions***

Table 37: Average distribution of answers from health care students in five educational programmes with modified and unmodified curricula and the common core implemented as uniprofessional or interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they wanted to have more information about studies of other health professions (question 10)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Nurse 'Unmodified'	288	2.07	
Nurse 'Modified'	132	2.11	
			2.17
Allied health 'Unmodified'	220	2.25	
Allied health 'Modified'	171	2.26	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from five health care professions with modified and unmodified curricula (table 37).

Table 37 ranks the student groups from those having the lowest to those having the highest mean. It shows that nursing students with unmodified curricula were the group that was most convinced about needing more information about other health studies and the one situated farthest from the mean. The allied health students with modified curricula were least convinced about needing more information about other health studies.

The mean for the nursing students with unmodified curricula corresponded to a value of 'mildly agree' on the scale, while the mean for the allied students with unmodified curricula was located at the level between 'mildly agree' and 'mildly disagree'.

The difference between the mean of the replies about whether or not they wanted to have more information about studies of other health professions, from the nursing students with modified and unmodified curricula and the common core implemented as uniprofessional education, was greater than the difference between the mean of the perceptions of this statement among the allied health students with modified and unmodified curricula, and the common core implemented as interprofessional education.

***Summary***

*The results show that nursing students with modified curricula were more positive towards interprofessional education compared with the other groups, with the exception of one relevant statement: interprofessional education would improve the students' qualification*

*(statement 1). Nursing students with unmodified curricula were the most convinced group about interprofessional education as a way to improve their qualification. Conversely, the allied health student with modified curricula agreed more often that interprofessional education would improve their qualifications as health workers than the corresponding allied health care students with unmodified curricula.*

*The nursing students with modified curricula were convinced about the importance of achieving knowledge of other professions and that interprofessional education gave such knowledge (statements 3, 4, 6 and 8), and improved their insight in health care (statement 5). On the other hand, nursing students with modified curricula saw to a lesser degree the purpose of interprofessional work (statements 7 and 9), compared with nursing students with unmodified curricula.*

*The results reveal that allied health students with modified curricula and interprofessional education were more convinced about the importance of achieving knowledge of other professions, that interprofessional education gives this kind of knowledge (statements 2, 3, 4, 6 and 8), that interprofessional education would improve their qualifications as health workers (statements 1 and 5) and about the importance of interprofessional work (statements 7 and 9), than were the allied health students with unmodified curricula. Both the allied health and the nursing students, with modified curricula, expressed less interest in having more information about other studies, than did the student groups with unmodified curricula reported (statement 10).*

*The difference between the mean of the replies about how the allied health students with unmodified curricula with reference to eight of ten statements was greater than the difference between the mean of the perception of these statement among the nursing students with modified and unmodified curricula. However, table 37 shows that the difference between the mean of the replies from the nursing students with modified and unmodified curricula about wanting more information about other health studies was greater than the difference between the mean of the perceptions of this statement among the allied health students with modified and unmodified curricula.*

*The results are summarised in table 38. It ranks students' responses about interprofessionalism from five educational programmes with modified and unmodified*

curricula and the common core implemented as either uniprofessional education (nursing students), or as interprofessional education (allied health students).

The differences between the mean of the responses by the allied health students with modified and unmodified curricula were greater than the mean of the differences between the answers about the need of interprofessional education to have knowledge about other professions (statements 2 and 4) and the value of interprofessional work (statements 7 and 9), than the differences between the mean of the replies from the nursing students, with modified and unmodified curricula.

Table 38: Rank scaling of student's perception of interprofessionalism in five health care programmes with modified and unmodified curriculum and the common core implemented in different ways<sup>139</sup>

Statements	1 Better qualified	2 Understand other	3 Know- ledge	4 Roles	5 Holistic insight	6 Health Worker	7 Projects	8 Insight	9 Value	10 Info
Nurse 'Modified'	++	-	-	+++	+++	+++	-	+++	+	+
Nurse 'Unmodified'	+++	-	--	+++	+++	++	-	+++	+	+
Allied 'Modified'	+	-	--	++	+	+	+	++	++	-
Allied 'Unmodified'	-	--	---	-	+	-	---	++	--	-

The results from the empirical study showed that interprofessional education improved students' appreciation of interprofessional education as a means of acquiring knowledge and understanding of other professions' cultural capital, and encouraged them to believe that they were better prepared to perform as health workers. In addition, students participating in interprofessional education improved their awareness of working across boundaries.

This analysis of students' perceptions of interprofessionalism showed that implementing the common core as interprofessional education tended to be a precondition for improving students' habitus as health workers.

<sup>139</sup> Ranking scale: +++ = 1.70 - 1.84, ++ = 1.85 - 1.99, + = 2.00 - 2.14, - = 2.15 - 2.29, -- = 2.30 - 2.44, --- = 2.45 - 2.60 (1.70 are located between strongly agree and mildly agree, and 2.60 are located between mildly agree and mildly disagree). Items 2 (understand other), 7 (project) and 9 (value) has been recoded: Strongly agree = strongly disagree, mildly agree = mildly disagree, mildly disagree = mildly agree, strongly disagree = strongly agree.

## 5.6 Analysis comparing students' perceptions of interprofessionalism and duration of interprofessional education at Oslo University College

In this chapter characteristics of health care students with and with unmodified curricula and different duration of interprofessional education at HiO<sup>140</sup> are presented. In order to interpret *to what extent the duration of interprofessional pedagogic work produce a lasting habitus as health worker*, a comparison has been carried out between perceptions of interprofessionalism among OT, PT and radiography students with modified curricula and a longer duration of interprofessional education (sample 8) and OT, PT and radiography students with unmodified curricula (sample 10); the medical laboratory science students with modified curricula and a shorter duration of interprofessional education (sample 9) and medical laboratory science students with unmodified curricula (sample 11).

A distribution of the student groups is shown in figure 14.

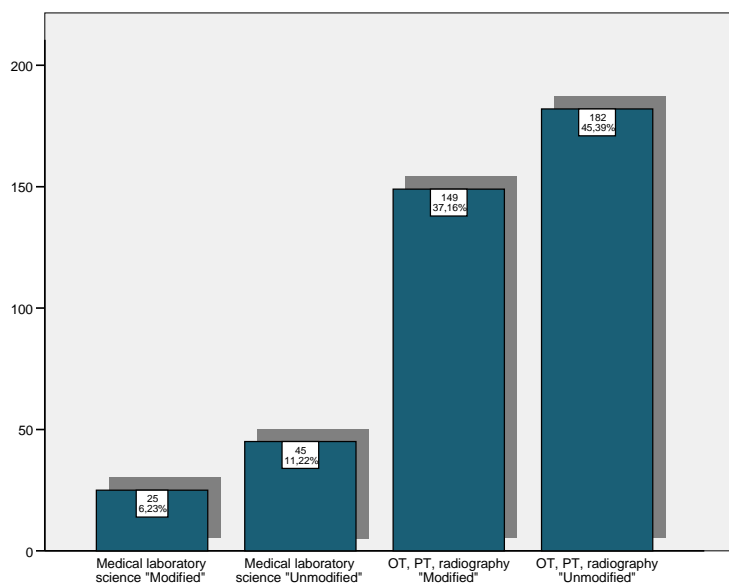


Figure 14: Distribution of the student groups

The allied professions group with unmodified curricula was the largest (182 students). The medical laboratory science group with modified curricula was to the smallest (25 students).

A one-way variance analysis showed statistical significant differences between the responses by students at four allied health programmes at HiO with unmodified curricula, and the

<sup>140</sup> OT, PT and radiography students participated at the VEKS I, II and III programme, while the medical laboratory science students participated at VEKS I and II programme.

responses by students at four allied health programmes at HiO with modified curricula and the common core implemented with a shorter duration of interprofessional education (medical laboratory science students) and a longer duration of interprofessional education (OT, PT and radiography students) for all items, except one: “interprofessional education gives knowledge about other professions”.

Table 39 shows the results from a one-ways variance analysis of the responses by allied health students with unmodified and modified curricula, and the common core implemented with different duration of interprofessional education. There exist statistical significant differences between responses by the OT, PT and radiography student and medical laboratory science students groups, with unmodified and modified curricula about nine statements.

Table 39: One-way variance analysis of health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education

<i>Variable</i>	<i>Sources</i>	<i>Degrees of freedom (df)</i>	<i>Sum of squares</i>	<i>Mean square</i>	<i>F</i>
1. I will be better qualified as a health worker, after finishing my education if interprofessional education is included	Between groups	3	3.081	1.027	4.550**
	Within groups	389	87.794	0.226	
	Total	392	90.875		
2. Interprofessional education is not necessary in order to understand other related professions	Between groups	3	7.005	2.335	6.376***
	Within groups	387	141.737	0.366	
	Total	390	148.743		
4. I feel that I will acquire knowledge about the different roles in other professions through interprofessional education	Between groups	3	1.991	0.664	2.777*
	Within groups	389	92.986	0.239	
	Total	392	94.977		
5. Interprofessional education, leads to a holistic insight in health service	Between groups	3	2.385	0.795	3.447*
	Within groups	386	89.013	0.231	
	Total	389	91.397		
6. Knowledge about other health professions will make me a better health worker	Between groups	3	2.877	0.959	3.433*
	Within groups	387	108.100	0.279	
	Total	390	110.977		
7. I do not see the purpose of doing projects together with students from other profession-oriented studies	Between groups	3	22.177	7.392	15.149***
	Within groups	386	188.359	0.488	
	Total	389	210.536		
8. I find it interesting to have insight into other health professions	Between groups	3	3.499	1.1166	5.440***
	Within groups	388	83.195	0.214	
	Total	391	86.694		
9. I do not see the value of teamwork across professional boundaries	Between groups	3	16.508	5.503	13.528***
	Within groups	389	158.225	0.407	
	Total	392	174.733		
10. I want to have more information about studies of other health professions	Between groups	3	3.288	1.096	3.349*
	Within groups	387	126.646	0.327	
	Total	390	129.934		

\* = significant  $\leq 0.05$

\*\* = significant  $\leq 0.01$

\*\*\* = significant  $\leq 0.001$

Tables 40 – 48 present the perceptions from each of the student groups for those statements where differences were statistical significant ranking groups from the lowest mean to the highest. The average mean is indicated by the dotted line.



***I will be better qualified as a health worker, after finishing my education if interprofessional education is included***

Table 40: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they would be better qualified as a health worker after finishing their education if interprofessional education was included (question 1)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT, PT, radiographer 'Modified'	149	1.95	
OT, PT, radiographer 'Unmodified'	176	2.01	
			2.02
Medical laboratory scientist 'Modified'	25	2.04	
Medical laboratory scientist 'Unmodified'	43	2.26	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 40).

Table 40 ranks the student groups from the group those having the lowest to those having the highest mean. It shows that OT, PT and radiography students with modified curricula constituted the groups that were most convinced that they would be better qualified as a health worker after finishing their education if interprofessional education was included. The medical laboratory science students with an unmodified curricula were least convinced that they would be better qualified as a health worker, after finishing their education, if interprofessional education was included and were the group situated farthest from the mean.

The mean for the OT, PT and radiography students with modified curricula corresponded to a value of 'mildly agree' on the scale, while the mean for the medical laboratory science students with unmodified curricula was located at the level between 'mildly agree' and 'mildly disagree'.

The difference between the mean of the replies about whether or not they would be better qualified as a health worker after finishing their education if interprofessional education was included, from the medical laboratory science students with modified and unmodified curricula, and a shorter duration of interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the OT, PT and

radiography students with modified and unmodified curricula and a longer duration of interprofessional education.

***Interprofessional education is not necessary in order to understand other related professions***

Table 41: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not interprofessional education is necessary in order to understand other related professions (question 2)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Medical laboratory scientist 'Unmodified'	43	2.56	
Medical laboratory scientist 'Modified'	24	2.63	
OT, PT, radiographer 'Unmodified'	175	2.78	
			2.82
OT, PT, radiographer 'Modified'	149	2.96	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 41).

Table 41 ranks the student groups from those having the lowest to those having the highest mean. It shows that medical laboratory science students with unmodified curricula constituted the group that was least convinced that interprofessional education is necessary in order to understand other related professions, and the one situated farthest from the mean. The OT, PT and radiography students with modified curricula were most convinced that interprofessional education is necessary in order to understand other related professions.

The mean for the medical laboratory science students with unmodified curricula corresponded to a value between 'mildly agree' and 'mildly disagree' on the scale, while the mean for OT, PT and radiography students having modified curricula was located at the level of 'mildly disagree'.

The difference between the mean of the replies about whether or not interprofessional education is necessary in order to understand other related professions from the OT, PT and radiography students with modified and unmodified curricula, and a longer duration of

interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the medical laboratory science students with modified and unmodified curriculum and a shorter duration of interprofessional education.

***I feel that I will acquire knowledge about the different roles in other professions through interprofessional education***

Table 42: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they felt that they would acquire knowledge about the roles in other professions through interprofessional education (question 4)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT, PT, radiographer 'Modified'	149	1.93	
Medical laboratory scientist 'Modified'	25	1.96	
			1.99
OT, PT, radiographer 'Unmodified'	176	2.01	
Medical laboratory scientist 'Unmodified'	43	2.16	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula, and the common core implemented with different duration of interprofessional education (table 42).

Table 42 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT, PT and radiography students with modified curricula were the groups that were most convinced about the importance of interprofessional education as a means of getting knowledge about other professions' role. The medical laboratory science students with unmodified curricula were least convinced about the importance of interprofessional education to get knowledge of other professions' roles, and were the group situated farthest from the mean.

The mean for the OT, PT and radiography students having modified curricula corresponded to a value of 'mildly agree' on the scale, and the mean for the medical laboratory science students with unmodified curricula was located at the level of 'mildly agree'.

The difference between the mean of the replies about the importance of interprofessional education as a means of getting knowledge about other professions' roles, from the medical laboratory science students with unmodified curricula and a shorter duration of

interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the OT, PT and radiography students with unmodified and modified curricula and a longer duration of interprofessional education.

***Interprofessional education, leads to a holistic insight in health care***

Table 43: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not interprofessional education, leads to a holistic insight in health service (question 5)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT, PT, radiographer 'Modified'	147	1.86	1.94
OT, PT, radiographer 'Unmodified'	175	1.95	
Medical laboratory scientist 'Modified'	25	1.96	
Medical laboratory scientist 'Unmodified'	43	2.12	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 43).

Table 43 ranks the students group from those having the lowest to those having the highest mean. It shows that OT, PT and radiography students with modified curricula were the groups that were most convinced about the importance of interprofessional education as a means of getting a holistic insight in health service. The medical laboratory science students with unmodified curricula were least convinced about the importance of interprofessional education as a means of getting a holistic insight in health service and were the group situated farthest from the mean.

The mean for the OT, PT and radiography students with modified curricula corresponded to a value of 'mildly agree' on the scale, and the mean for the medical laboratory science students with unmodified curricula was located at the level of 'mildly agree' on the scale.

The difference between the mean of the replies about the importance of interprofessional education as a means of getting a holistic insight in health service from the medical laboratory science students with unmodified curricula and a shorter duration of interprofessional

education, was greater than the difference between the mean of the perceptions of this statement among the OT, PT and radiography students, with unmodified and modified curricula and a longer duration of interprofessional education.

***Knowledge about other health professions will make me a better health worker***

Table 44: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not knowledge about other health professions would make them a better health worker (question 6)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT, PT, radiographer 'Modified'	148	1.85	1.95
OT, PT, radiographer 'Unmodified'	176	1.98	
Medical laboratory scientist 'Modified'	24	2.08	
Medical laboratory scientist 'Unmodified'	219	2.09	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 44).

Table 44 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT, PT and radiography students with modified curricula were the groups that were most convinced that knowledge about other health professions would make them a better health worker. The medical laboratory science students with unmodified curricula were least convinced that knowledge about other health professions would make them a better health worker, and were the group situated farthest from the mean.

The mean for the OT, PT and radiography students with modified curricula corresponded to a value of 'mildly agree' and the mean for the medical laboratory science students with unmodified curricula was located at the level of 'mildly agree' on the scale.

The difference between the mean of the replies about whether or not knowledge about other health professions would make them a better health worker, from the OT, PT and radiography students with unmodified curricula and a longer duration of interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the

medical laboratory science students with unmodified and modified curricula and a shorter duration of interprofessional education.

***I do not see the purpose of doing projects together with students from other profession-oriented studies***

Table 45: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they saw the purpose of doing projects together with students from other profession-oriented studies (question 7)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Medical laboratory scientist 'Unmodified'	43	2.44	
Medical laboratory scientist 'Modified'	24	2.46	
OT, PT, radiographer 'Unmodified'	175	2.57	
			2.72
OT, PT, radiographer 'Modified'	148	3.02	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 45).

Table 45 ranks the student groups from those having the lowest to those having the highest mean. It shows that medical laboratory science students with unmodified curricula constituted the group that was least convinced about the purpose of doing projects with students from other professions. The OT, PT and radiography students with modified curricula were most convinced about the purpose of doing projects with students from other professions and were the groups situated farthest from the mean on the scale.

The mean for the medical laboratory science students with unmodified curricula corresponded to a value between 'mildly agree' and 'mildly disagree' on the scale, while the mean for the OT, PT and radiography health students with modified curricula was located at the level of 'mildly disagree'.

The difference between the mean of the replies about whether or not seeing the purpose of doing projects with students from other professions, from the OT, PT and radiography students with unmodified curricula and a longer duration of interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the

medical laboratory science students with unmodified and modified curricula and a shorter duration of interprofessional education.

***I find it interesting to have insight into other health professions***

Table 46: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they found it interesting to have insight into other health professions (question 8)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT, PT, radiographer 'Modified'	135	1.76	
OT, PT, radiographer 'Unmodified'	288	1.82	
			1.91
Medical laboratory scientist 'Modified'	173	1.87	
Medical laboratory scientist 'Unmodified'	219	1.94	

There were significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 46).

Table 46 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT, PT and radiography students with modified curricula were the groups that were interested to have insight into other health professions, and were the student group situated farthest from the mean. Medical laboratory science students with unmodified curricula were less interested to have insight into other health professions.

The mean for the OT, PT and radiography students having modified curricula corresponded to a value of 'mildly agree' on the scale, and the mean for the medical laboratory science students with unmodified curricula was located at the level of 'mildly agree' on the scale.

The difference between the mean of the replies about whether or not they wanted insight into other health professions from the OT, PT and radiography students with unmodified curricula and a longer duration of interprofessional education was greater than the difference between the mean of the perceptions of this statement among the medical laboratory science students with unmodified and modified curricula and a shorter duration of interprofessional education.

***I do not see the value of teamwork across professional boundaries***

Table 47: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they saw the value of teamwork across professional boundaries (question 9)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
Medical laboratory scientist 'Modified'	24	2.63	
Medical laboratory scientist 'Unmodified'	44	2.64	
OT, PT, radiographer 'Unmodified'	176	2.72	
			2.86
OT, PT, radiographer 'Modified'	149	3.11	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 47).

Table 47 ranks the student groups from those having the lowest to those having the highest mean. It shows that medical laboratory science students with modified curricula constituted the group that was least convinced of the value of teamwork across professional boundaries. The OT, PT and radiography students with modified curricula were more convinced about the value of teamwork across professional boundaries and were the student groups situated farthest from the mean.

The mean for the medical laboratory science students with modified curricula corresponded to a value between 'mildly agree' and 'mildly disagree' on the scale, while the mean for the OT, PT and radiography students with modified curricula was located at the level of 'mildly disagree'.

The difference between the mean of the replies about whether or not seeing the value of teamwork across professional boundaries from the medical laboratory science students with unmodified and modified curricula and a shorter duration of interprofessional education, was greater than the difference between the mean of the perceptions of this statement among the OT, PT and radiography students with unmodified curricula and a longer duration of interprofessional education.



***I want to have more information about studies for other health professions***

Table 48: Average distribution of answers from health care students in four educational programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (ranked) and for the total distribution of the question concerning the students' perception of whether or not they wanted to have more information about studies for other health professions (question 10)

<i>Health care disciplines</i>	<i>N</i>	<i>Mean</i>	<i>Total mean</i>
OT, PT, radiographer 'Unmodified'	176	2.21	
OT, PT, radiographer 'Modified'	147	2.22	
			2.25
Medical laboratory scientist 'Unmodified'	44	2.39	
Medical laboratory scientist 'Modified'	24	2.54	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by students from four health care professions, with modified and unmodified curricula and the common core implemented with different duration of interprofessional education (table 48).

Table 48 ranks the student groups from those having the lowest to those having the highest mean. It shows that OT, PT, radiography students with unmodified curricula were the groups more convinced about needing more information about studies for other health professions. The medical laboratory science students with modified curricula were least convinced about needing more information about such studies and were the student group situated farthest from the mean.

The mean for the OT, PT and radiography students with unmodified curricula corresponded to a value of 'mildly agree' on the scale while the mean for the medical laboratory science students with modified curricula was located at the level between 'mildly agree' and 'mildly disagree'.

The difference between the mean of the replies about whether or not needing more information about other health studies from the medical laboratory science students with unmodified curricula and a shorter duration of interprofessional education, was greater than the difference between the mean of the perception of this statement among the OT, PT and radiography students with unmodified and modified curricula and a longer duration of interprofessional education.

### **Summary**

*According to these results, OT, PT and radiography and the medical laboratory science students participating interprofessional education regardless of its duration were more positive towards interprofessionalism compared with the corresponding groups with unmodified curricula with regards to seven of the statements with statistical significant differences in the answers from the four groups. The allied health students attending interprofessional education were more positive about the importance of achieving knowledge of other professions, that interprofessional education gives such knowledge (statements 2, 4, 6 and 8), that interprofessional education improve their qualifications as health workers (statements 1 and 5) and the value of doing projects with students from other professions (statement 7), compared with the corresponding student groups with unmodified curricula.*

*The OT, PT and radiography students with modified curricula and a longer duration of interprofessional activities were more convinced about the importance of working across boundaries (statement 9) than the corresponding student groups with unmodified curricula. The medical laboratory science students with a shorter duration of interprofessional education were less assured about the benefit of interprofessional work (statement 9), compared with the corresponding students with unmodified curricula. All the student groups with unmodified curricula wanted more information about other studies (statement 10) compared with the students having modified curricula.*

*The results are summarised in table 49. It ranks the responses by the allied health students, with modified and unmodified curricula and the common core implemented with different duration of interprofessional activities. The differences between the mean of the answers about interprofessionalism among the OT, PT and radiography students, with modified and unmodified curricula were greater than the mean of the differences between the replies about interprofessionalism from the medical laboratory science students with modified and unmodified curricula concerning the need of interprofessional education to understand other health professions (statement 2) and the importance of interprofessional work (statements 7 and 9).*

*The differences between the mean of the responses by medical laboratory science students with modified and unmodified curricula were greater than the difference between the mean of the answers from the OT, PT and radiography students with modified and unmodified*

curricula that they would acquire knowledge about other professions through interprofessional education (statement 4) and they would develop a broader professional cultural capital (statement 5). According to table 49, the difference between the mean of the replies from the medical laboratory science students with modified and unmodified curricula was greater than the difference between the mean of the responses about wanting more information about other health professions (statement 10), expressed by the OT, PT and radiography students with modified and unmodified curricula.

Table 49: Rank scaling of student's perception of interprofessionalism in four health care programmes with modified and unmodified curricula and the common core implemented with different duration of interprofessional education<sup>141</sup>

Statements	1 Better qualified	2 Under stand other	4 Roles	5 Holistic insight	6 Health worker	7 Projects	8 Insight	9 Value	10 Info
OT, PT, radiographer 'Modified' & longer duration of IPE	++	+	++	++	++	++	+++	++	-
OT, PT, radiographer 'Unmodified'	+	-	+	++	++	--	+++	-	-
MLS. 'Modified' & shorter duration of IPE	+	--	++	++	+	---	++	--	---
MLS. 'Unmodified'	-	--	-	+	+	---	++	--	--

In general, the OT, PT and radiography students with a longer duration of interprofessional education, compared with medical laboratory science students, were convinced about the importance of interprofessionalism. The result in this study shows that throughout a longer duration of interprofessional education the students became aware of the importance of interprofessional work and the importance to achieve an understanding of other health professions through interprofessional activities. On the other hand, a shorter duration of interprofessional activities improved the students' awareness of interprofessional education, as a means of having knowledge about other health professions and a way to develop a broader view of health care. Students with a shorter duration of interprofessional education were less eager to have additional information about other health professions, compared with

<sup>141</sup> Ranking scale: +++ = 1.70 - 1.84, ++ = 1.85 - 1.99, + = 2.00 - 2.14, - = 2.15 - 2.29, -- = 2.30 - 2.44, --- = 2.45 - 2.60 (1.70 are located between strongly agree and mildly agree, and 2.60 are located between mildly agree and mildly disagree). Items 2 (understand other), 7 (project) and 9 (value) has been recoded: Strongly agree = strongly disagree, mildly agree = mildly disagree, mildly disagree = mildly agree, strongly disagree = strongly agree.

*the other student groups. This analysis of students' perceptions of interprofessionalism showed that a longer duration of pedagogic work tended to produce a lasting habitus as health worker.*

### **5.7 Correspondence analysis of perceptions of interprofessionalism from OT and PT students at Oslo University College**

A correspondence analysis makes it possible to analyse together in one process a set of variables that have been analysed in previous analyses whether as variance analysis or by cross tables. The objects for correspondence analysis are twofold: to give an overview of results from the previous analyses of this theme and to seek eventually new correspondences between perceptions of interprofessionalism and students that have not been found during previous analyses. The intention by using this analysis was to have a closer understanding of occupational therapy and physiotherapy as two professions with some overlapping duties in health care.

This analysis distinguishes between differences and similarities between biosocial variables and perceptions that go into the analysis. It is about the OT and PT students in Oslo<sup>142</sup> (sample 12 in figure 6) and seeks correspondences between groups of perceptions of interprofessionalism, as active, principle variables that construct the analysis. Students are linked to these perceptions and the students' specific characteristics are added as illustrative or supplementary variables<sup>143</sup>.

#### **Variables in the correspondence analysis<sup>144</sup>**

The active, principle variables are the following:

- PT (PRF 1) (2 variables)
- OT (PRF 2) (2 variables)
- Interprofessional education is not necessary in order to understand other related professions (UND) (3 variables)
- Interprofessional education gives better knowledge about other professions (OCC) (3 variables)
- I feel that I would acquire knowledge about the roles in other professions through interprofessional education (ROL) (3 variables)

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<sup>142</sup> HiAls does not have programme for OT and PT.

<sup>143</sup> Supplementary variables give additional or supplementary information to the analysis.

<sup>144</sup> The students' perceptions were grouped in three response alternatives in order to have large enough and comparable size in the reply groups (see appendix 7). Thus the analysis is made on the basis of 16 variables.

- I want to have more information about studies of other health professions (DTU) (3 variables)

The supplementary variables are the following (biosocial variables):

- gender (SEX) (2 variables)
- age (AGE) (4 variables)

In addition, there are variables containing responses with replies below 5% included as supplementary variables. The selection of supplementary variables has been made after the analysis of the principle variables has been carried out. The supplementary variables do not contribute to the construction of the factor axis.

- I will be better qualified as a health worker, after finishing my education if interprofessional education is included (EDU) (3 variables)
- Interprofessional education, leads to a holistic insight in health service (VIE) (3 variables)
- Knowledge about other health professions would make me a better health worker (CMP) (3 variables)
- I do not see the purpose of doing projects together with students from other profession-oriented studies (PRO) (3 variables)
- I find it interesting to have insight into other health professions (VIW) (3 variables)
- I do not see the value of teamwork across professional boundaries (GRO) (3 variables)

### **Three factor axis**

**The first factor axis** (23.43 % of eigenvalue =0.42)<sup>145</sup> distinguished between perceptions of not seeing the value of interprofessional education (as regards to knowledge about other professions) and perceptions that to some extent see the value of interprofessional education (as regards to knowledge about other professions).

The negative side of the first axis regrouped perceptions concerning the students' point of view of interprofessionalism and it comprised perceptions that mildly agreed that interprofessional education is not necessary in order to understand other related professions [23]<sup>146</sup>. It comprised perceptions that disagreed: that interprofessional education gives better knowledge about other professions [19], that they wanted to have more information about other studies of other health professions [14], and that they felt that they would acquire knowledge about the roles in other professions through interprofessional education [12).

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<sup>145</sup> See appendix 7, showing a histogram of the eigenvalues in the matrix.

<sup>146</sup> The number in the brackets [ ] indicate the points' contributions to the particular factor axis. The most important contributions are those being above the average of all the contributions to the particular axis. In this analysis only contribution above the average 9 (100:11) are included. In the following this contributions are named 'a sufficient contribution'.

The positive side of the first axis gathered students' perceptions of interprofessionalism and composed of perceptions that mildly agreed that interprofessional education gives better knowledge about other professions [7].

**The second axis** (14.48 % of eigenvalue =0.26) distinguished between perceptions of the value of interprofessional education and perceptions expressing awareness of interprofessional education.

On the negative side of the axis occurred the students' perceptions of interprofessional education and it comprised perceptions that strongly agreed: that interprofessional education gives better knowledge about other professions [19], and that they wanted to have more information about other studies of other health professions [10]. It comprised perceptions that mildly agreed that they felt they would acquire knowledge about the roles in other professions through interprofessional education [16], and disagreed that interprofessional education is not necessary in order to understand other related professions [17].

The positive side of the second axis gathered perceptions of interprofessional education and it comprised perceptions that mildly agreed: that interprofessional education gives better knowledge about other professions [18], and that they wanted to have more information about other studies of other health professions [7].

**The third axis** (12.88 % of eigenvalue =0.23) distinguished between perceptions expressing a high degree of readiness for interprofessional education and perceptions indicating a less readiness for interprofessional education.

On the negative side of the third axis occurred the students' view on readiness for interprofessional education and it comprised perceptions that strongly agreed that they wanted to have more information about other studies of other health professions [13], and disagreed that interprofessional education is not necessary in order to understand other related professions [15].

The positive side of the third axis gathered students' perceptions of readiness for interprofessional education and it composed of perceptions that mildly agreed: that they felt that they would acquire knowledge about the roles in other professions through

interprofessional education [30] and that they wanted to have more information about other studies of other health professions [24].

**The fourth axis** (11.30 % of eigenvalue =0.20) distinguished between OT and PT students. On the negative side of the fourth axis occurred PT students [24] and composed of perceptions that disagreed: that interprofessional education is not necessary in order to understand other related professions [35], and that they felt that they would acquire knowledge about the roles in other professions through interprofessional education [13].

On the positive side of the fourth axis occurred OT students [11] (see appendix 7).

### **5.8 Hierarchical classification**

A hierarchical classification was made to identify the clouds or groups of perceptions in the space of 10 perceptions that the analysis found most homogeneous, and constituted the basis for regrouping the perceptions that were closest to each other and those that were situated farthest from each other.

The ten perceptions of the four statements about interprofessionalism were distinguished in two groups. One of the groups included OT students and perceptions valuing interprofessionalism, while the other group included PT students and the perceptions expressing less awareness of interprofessionalism.

The first main group involved PT students and gathered perceptions being more negative towards interprofessionalism and the perceptions were divided in three groups:

Group 1 involved PT students and perceptions that mildly agreed about the need for more information about other health professions. The group gathered 3 modalities (PRF1, DTU2, OCC2).

Group 2 comprised perceptions that, to some extent, agreed that interprofessional education is not necessary to understand other professions and disagreed to have more information about other health professions. The group gathered 2 modalities (UND2, DTU3).

Group 3 included perceptions that disagreed that through interprofessional education they would acquire knowledge about other health profession's roles and agreed that interprofessional education is necessary to understand other professions. The group gathered 2 modalities (ROL3, UND3).

The second main group involved OT students and gathered perceptions being more positive towards interprofessionalism and included one group:

Group 4 involved OT students and perceptions that agreed with the need to have more information about other health professions and that interprofessional education gives such knowledge. The group gathered three modalities (DTU1, OCC1, PRF2).

### ***5.9 The sixth first plans***

The most important differences and similarities between the OT and PT students' perceptions of interprofessionalism may sum up earlier finding and show new differences and similarities between the student groups.



### 5.9.1 First factor plan

The first factor plan, created from the first and the second factor axis, identified four dot clouds or groups.

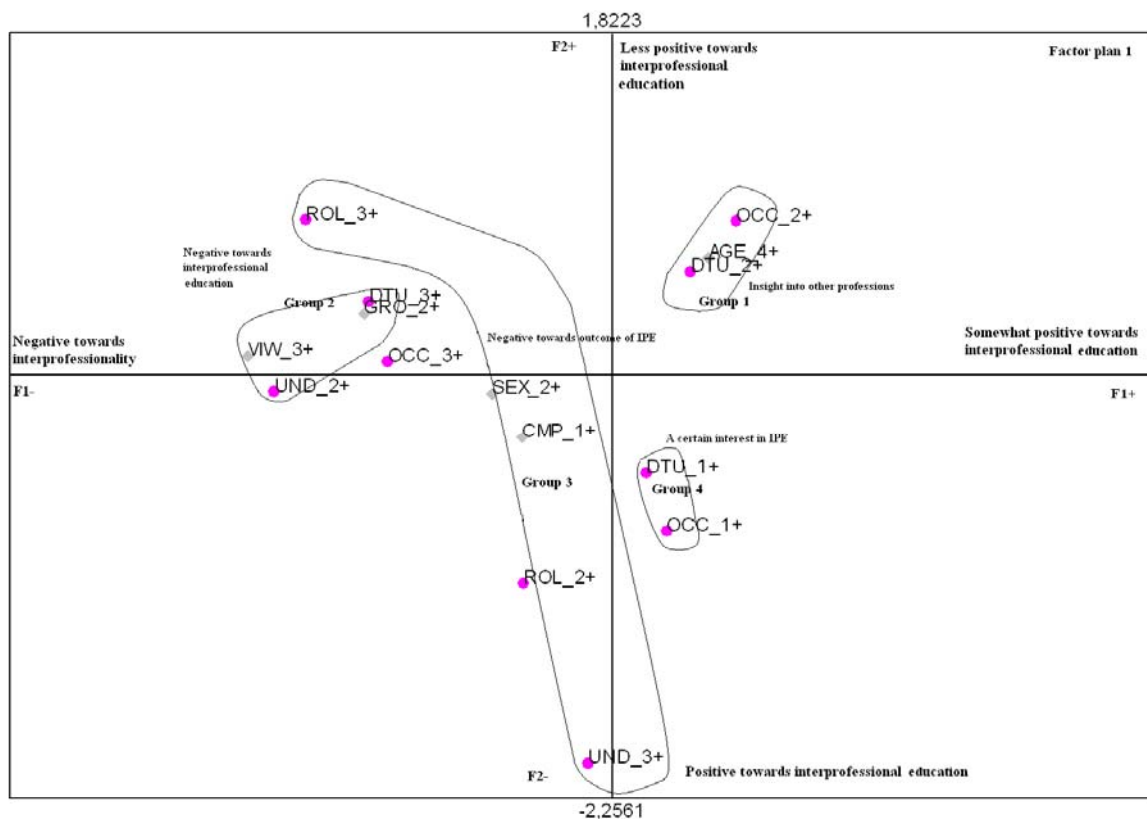


Figure 15: First factor plan

West-west in the first factor plan (figure 15), was situated at a zone of negative values on the first axis and negative and positive values on the second factor axis. The group appeared near the negative pole of the first axis that involved negative perceptions of interprofessionalism. In this group appeared perceptions being negative towards interprofessional education (**group 2**). The modalities from group 2 giving enough contributions<sup>147</sup> to at least one of the axes in the first factor plan, including perceptions from students that:

- disagreed that they wanted to have more information about studies of other health professions (DTU3)
- mildly agreed that interprofessional education is not necessary in order to understand other related professions (UND2)

<sup>147</sup> Only modalities that contributed to at least one of the factor axis, being greater than the average for all the contributions, are presented here. In the description of each of the group below, the contribution is named ‘a sufficient contribution’.

Significantly associated with this group were students who disagreed that they found it interesting to have insight into other health professions (VIW3), and mildly agreed that they did not see the value of teamwork across professional boundaries (GRO2).

West in the first factor plan was situated at a zone of negative values on the first axis and positive and negative values on the second axis. This group comprised perceptions being negative towards the outcome of interprofessional education (**group 3**). The modalities from group 3 giving enough contributions to at least one of the axis in the first factor plan, including perceptions from students that:

- disagreed that they feel that they would acquire knowledge about the roles in other professions through interprofessional education (ROL3)
- disagreed that interprofessional education is not necessary in order to understand other related professions (UND3).

Significantly associated with this group were students who strongly agreed that knowledge about other health professions would make them a better health worker (CMP1). Also male students (SEX2) were associated with this group.

South-east in the first factor plan was situated at a zone of positive values on the first axis and negative on the second axis. This group composed of perceptions expressing a certain interest in interprofessional education (**group 4**). The modalities from group 4 giving enough contributions to at least one of the axes of the first factor plan, including perceptions from students that:

- strongly agreed that interprofessional education gives better knowledge about other professions (OCC1)
- strongly agreed that they wanted to have more information about studies of other health professions (DTU1)

None of the supplemented variables was significantly associated with this group.

North-east in the first factor plan was situated at a zone of positive values both on the first and the second axis. This group consisted of perceptions concerning a certain insight into other professions (**group 1**). The modalities from group 1 giving enough contributions to at least one of the axis in the first factor plan, including perceptions from students that:

- mildly agreed that they wanted to have more information about studies of other health professions (DTU2)
- mildly agreed that interprofessional education gives better knowledge about other professions (OCC2)

Significantly associated with this group were students older than 30 years.

**Summary**

The first factor plan of this correspondence analysis distinguished between four groups of perceptions: students expressing perceptions about a certain insight into other professions (group 1); students being negative towards interprofessional education (group 2); students being negative towards the outcome of interprofessional education (group 3); and students expressing a certain interest in interprofessional education (group 4).

**5.9.2 Second factor plan**

The second factor plan, created from the first and the third factor axis, identified three dot clouds or groups.

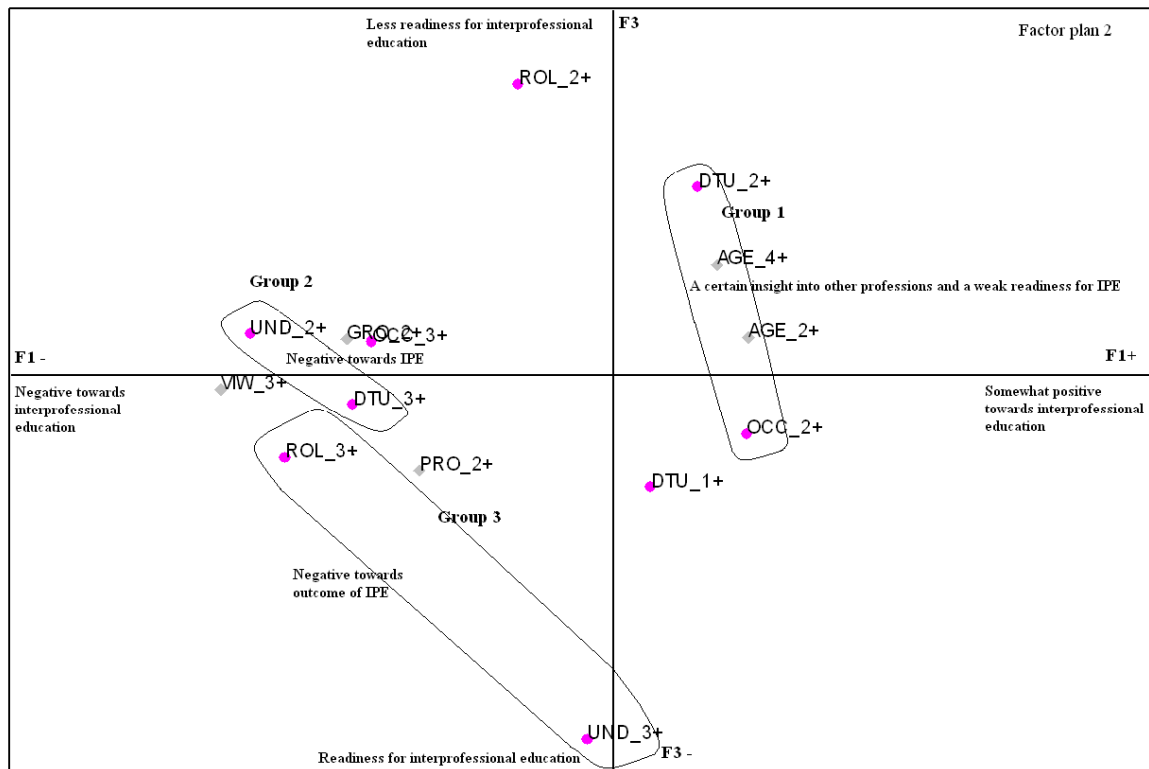


Figure 16: Second factor plan

West in the second factor plan (figure 16), was situated at a zone of negative values on the first axis and negative and positive values on the third factor axis. In this group appeared perceptions being negative towards interprofessional education (**group 2**). The modalities from group 2 giving enough contributions to at least one of the axes in the second factor plan included perceptions from students that:

- disagreed that they wanted to have more information about studies of other health professions (DTU3)
- mildly agreed that interprofessional education is not necessary in order to understand other related professions (UND2)

As in the first factor plan, associated with this group were students who disagreed that they found it interesting to have insight into other health professions (VIW3), and mildly agreed that they did not see the value of teamwork across professional boundaries (GRO2).

South - west in the second factor plan was situated at a zone of negative values both on the first and the third axis. This group comprised perceptions being negative towards the outcome of interprofessional education (**group 3**). The modalities from group 3 giving enough contributions to at least one of the axis in the second factor plan included perceptions from students that:

- disagreed that they felt that they would acquire knowledge about the roles in other professions through interprofessional education (ROL3)
- disagreed that interprofessional education is not necessary in order to understand other related professions (UND3).

Significantly associated with this group were students who mildly agreed that they did not see the purpose of doing projects together with students from other professions (PRO2).

East in the second factor plan was situated at a zone of positive values on the first axis and positive and negative values on the third axis. In this group appeared perceptions concerning a certain insight into other professions and a weak readiness for interprofessional education (**group 1**). The modalities from group 1 giving enough contributions to at least one of the axis in the second factor plan included perceptions from students that:

- mildly agreed that they wanted to have more information about other studies of other health professions (DTU2)
- mildly agreed that interprofessional education gives better knowledge about other professions (OCC2)

Significantly associated with this group were students between 21 and 25 years old and those over 30 years.

## Summary

The second factor plan of this correspondence analysis distinguished between three groups of perceptions: students expressing perceptions of a certain insight into other professions and a weak readiness for interprofessional education (group 1); students being negative towards interprofessional education (group 2); and students being negative towards the outcome of interprofessional education (group 3).

### 5.9.3 Third factor plan

The third factor plan, created from the second and the third factor axis, identified two dot clouds or groups.

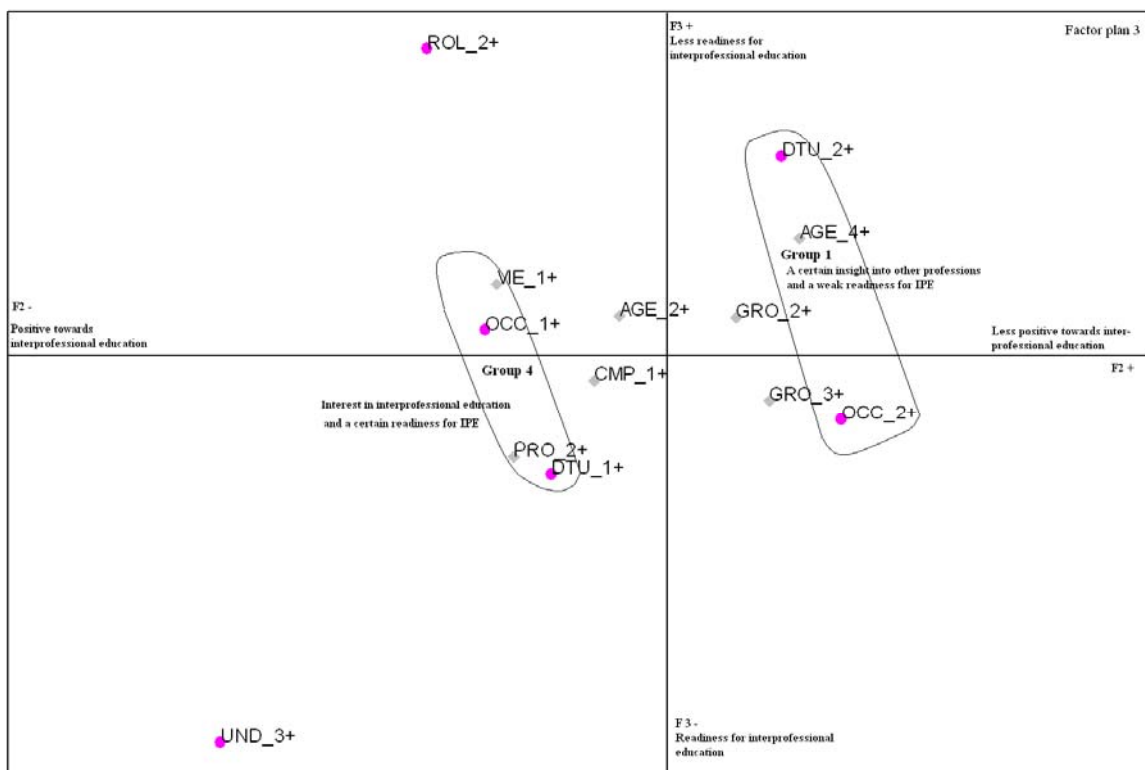


Figure 17: Third factor plan

West in the third factor plan (figure 17), was situated at a zone of negative values on the second axis and positive and negative values on the third axis. In this group appeared perceptions expressing interest in interprofessional education and a certain readiness for interprofessional education (**group 4**). The modalities from group 4 giving enough contributions to at least one of the axes in the third plan included perceptions from students that:

- strongly agreed that interprofessional education gives better knowledge about other professions (OCC1)
- strongly agreed that they wanted to have more information about studies of other health professions (DTU1)

Significantly associated with this group this group comprising students that strongly agreed that interprofessional education leads to a holistic insight in health service (VIE1), and mildly agreed that that they did not see the purpose of doing projects together with students from other professions (PRO2).

East in the third factor plan was situated at a zone of positive value on the second axis and positive and negative values in the third axis. This group comprised perceptions concerning a certain insight into other professions and a weak readiness for interprofessional education (**group 1**). The modalities from group 1 giving enough contributions to at least one of the axis in the third factor plan included perceptions from students that:

- mildly agreed that they wanted to have more information about studies of other health professions (DTU2)
- mildly agreed that interprofessional education gives better knowledge about other professions (OCC2)

Significantly associated with this group were students older than 30 years. Also associated with this group were students who mildly agreed and disagreed that they did not see the value of teamwork across professional boundaries (GRO2, GRO3).

### **Summary**

*The third factor plan of this correspondence analysis distinguished between two groups: students expressing perceptions of a certain insight into other professions and a weak readiness for interprofessional education (group 1); and students expressing a certain interest in interprofessional education and a certain readiness for interprofessional education (group 4).*

### 5.9.4 Fourth factor plan

The fourth factor plan, created from the first and the fourth axis, identified three dot clouds or groups.

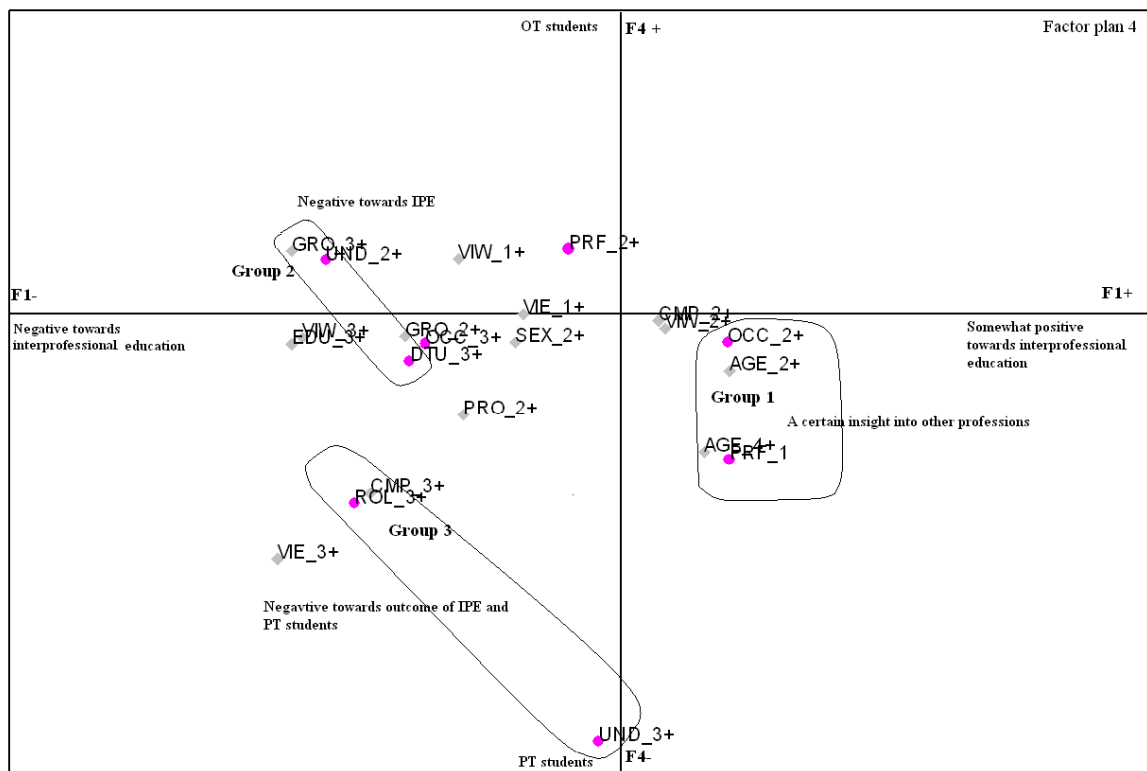


Figure 18: Fourth factor plan

South-east in the fourth factor plan (figure 18), was situated at a zone of positive values on the first axis and negative values on the fourth axis. This group comprised perceptions concerning a certain insight into other professions education (**group 1**). The modalities from group 1 giving enough contributions to at least one of the axis in the fourth factor plan included PT students and perceptions from students that: mildly agreed that interprofessional education gives better knowledge about other professions (OCC2)

Significantly associated with this group, as in the second factor plan, were students between 21 and 25 years and those over 30 years. Also associated with this group, were perceptions that mildly agreed that knowledge about other health professions would make them a better health worker (CMP2), and mildly agreed that they found it interesting to have insight into other health professions (VIW2).

South-west in the fourth factor plan was situated at a zone of negative value both on the first and the fourth axis. The group appeared near the negative pole of the fourth axis that involved PT students. This group comprised perceptions concerning outcome of interprofessional education (**group 3**). The modalities from group 3 giving enough contributions to at least one of the axes in the fourth plan included perceptions from students that:

- disagreed that they felt that they would acquire knowledge about the roles in other professions through interprofessional education (ROL3)
- disagreed that interprofessional education is not necessary in order to understand other related professions (UND3).

Significantly associated with this group were students who disagreed that knowledge about other health professions would make them a better health worker (CMP3). Also associated with this group were students who disagreed that interprofessional education leads to a holistic insight in health service (VIE3).

West in the fourth factor plan (figure 18), was situated at a zone of negative values on the first axis and negative and positive values on the fourth axis. In this group appeared perceptions being negative towards interprofessional education (**group 2**). The modalities from group 2 giving enough contributions to at least one of the axes in the fourth factor plan included perceptions from students that:

- disagreed that they wanted to have more information about studies of other health professions (DTU3)
- mildly agreed that interprofessional education is not necessary in order to understand other related professions (UND2)

Significantly associated with this group as in the first factor and the second plans, were students who mildly agreed and disagreed that they did not see the value of teamwork across professional boundaries (GRO2, GRO3). Also significantly associated with this group were students' perceptions that disagreed that they found it interesting to have insight into other health professions (VIW3), and disagreed that they would be better qualified as a health worker if interprofessional education was included (EDU3).

### **Summary**

*The fourth factor plan of this correspondence analysis, showed a separation between three groups: PT students and students expressing perceptions of a certain insight into other professions (group 1); students being negative towards interprofessional education (group 2); and students' perceptions of the outcome of interprofessional education (group 3).*



### 5.9.5 Fifth factor plan

The fifth factor plan, created from the second and the fourth axis, identified three dot clouds or groups.

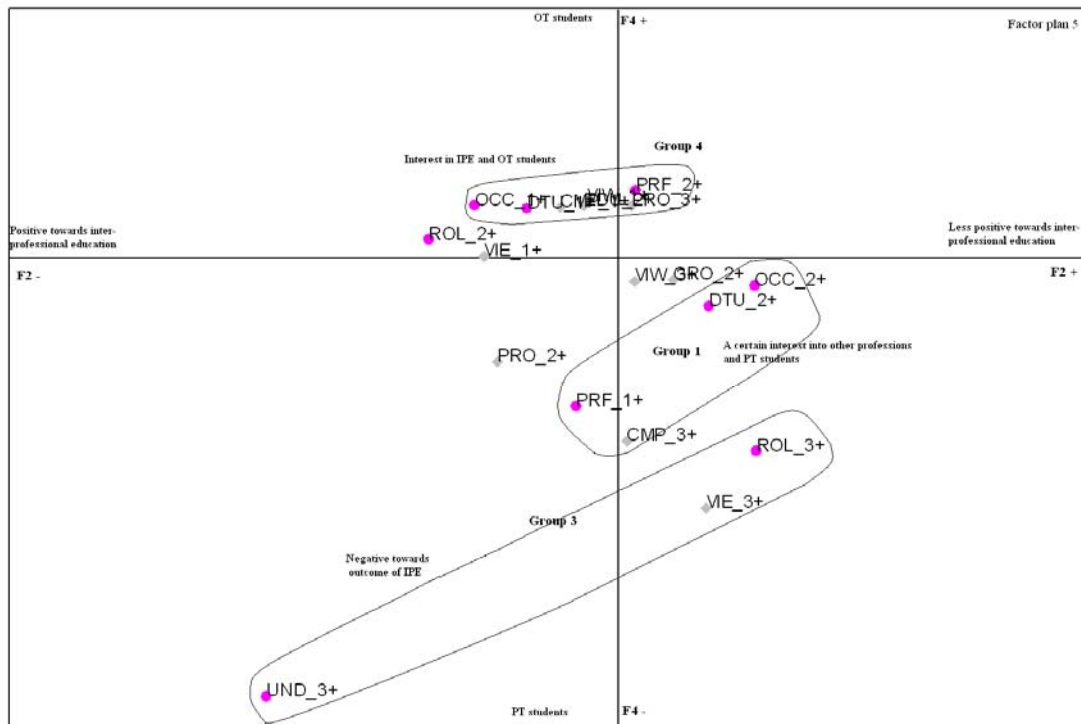


Figure 19: Fifth factor plan

South-east in the fifth factor plan (figure 19), was situated at a zone of positive and negative values on the second axis and negative values on the fourth axis. This group comprised perceptions concerning a certain insight into other professions and PT students (**group 1**). The modalities from group 1 giving enough contributions to at least one of the axis in the fifth factor plan included PT students and perceptions from students that:

- mildly agreed that they wanted to have more information about studies of other health professions (DTU2)
- mildly agreed that interprofessional education gives better knowledge about other professions (OCC2)

Associated with this group were students who disagreed that knowledge about other health professions would make them a better health worker (CMP3). Also associated with this group were students who disagreed that they found it interesting to have insight into other health professions (VIW3), mildly agreed that they did not see the value of teamwork across

professional boundaries (GRO2) and mildly agreed that they did not see the purpose of doing projects together with students from other professions (PRO2).

South in the fifth factor plan was situated at a zone of negative and positive value on the second axis and negative value on the fourth axis. The group appeared, as in the third factor plan, near the negative pole of the fourth axis that involved PT students. This group comprised perceptions being negative towards outcome of interprofessional education (**group 3**). The modalities from group 3 giving enough contributions to at least one of the axes in the fifth plan included perceptions from students that:

- disagreed that they felt that they would acquire knowledge about the roles in other professions through interprofessional education (ROL3)
- disagreed that interprofessional education is not necessary in order to understand other related professions (UND3).

Significantly associated with this group, as in the fourth factor plan, were students that disagreed that interprofessional education leads to a holistic insight in health service (VIE3).

North in the fifth factor plan (figure 19), was situated at a zone of negative and positive values on the second axis and positive values on the fourth axis. In this group appeared students with perceptions expressing interest in interprofessional education and OT students (**group 4**). The modalities from group 4 giving enough contributions to at least one of the axes in the fifth plan included OT students and perceptions that:

- strongly agreed that interprofessional education gives better knowledge about other professions (OCC1)
- strongly agreed that they wanted to have more information about studies of other health professions (DTU1)

Significantly associated with this group were students who strongly agreed that knowledge about other health professions would make them a better health worker (CMP1), strongly agreed that they found it interesting to have insight into other health professions (VIW1), mildly agreed that they would be better qualified as a health worker if interprofessional education was included (EDU2), and disagreed that they did not see the purpose of doing projects together with students from other professions (PRO3). Also associated with this group, as in the third factor plan, were students who strongly agreed that interprofessional education leads to a holistic insight in health service (VIE1).

### Summary

The fifth factor plan of this correspondence analysis revealed a distinction between three groups: students expressing a certain insight into other professions and PT students (group 1); students being negative towards the outcome of interprofessional education (group 3); and students being interest in interprofessional education and OT students (group 4).

### 5.9.6 Sixth factor plan

The sixth factor plan, created from the third and the fourth axis, identified three dot clouds or groups.

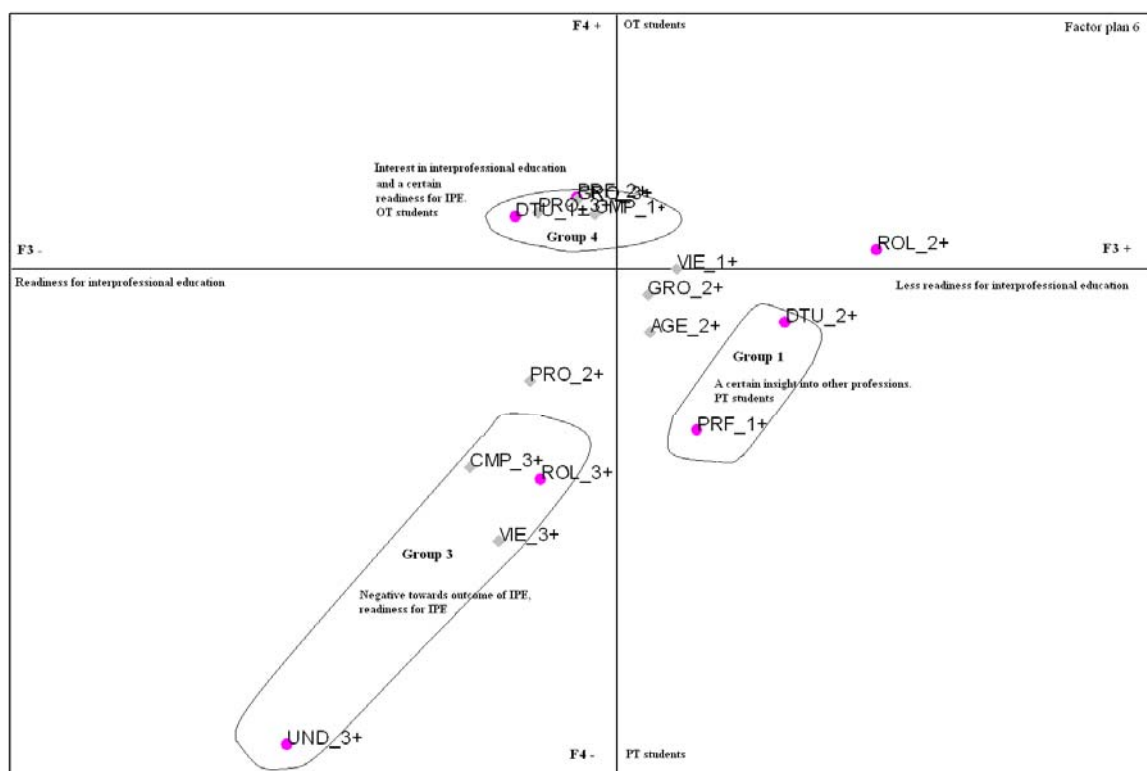


Figure 20: Sixth factor plan

East in the sixth factor plan (figure 20), was situated at a zone of positive on the third axis and negative values on the fourth axis. This group comprised perceptions expressing a certain insight into other professions and PT students (**group 1**). The modalities from group 1 giving enough contributions to at least one of the axis in the sixth factor plan included PT students and perceptions from students that mildly agreed that they wanted to have more information about other studies of other health professions (DTU2)

None of the supplemented variables was significantly associated with this group.

South-west in the fifth factor plan was situated at a zone of negative value on both the third and fourth axis. The group appeared, as in the fourth factor plan, near the negative pole of the fourth axis that involved PT students. This group comprised perceptions from students being negative towards the outcome of interprofessional education and PT students (**group 3**). The modalities from group 3 giving enough contributions to at least one of the axes in the sixth plan included perceptions from students that:

- disagreed that they felt that they would acquire knowledge about the roles in other professions through interprofessional education (ROL3)
- disagreed that interprofessional education is not necessary in order to understand other related professions (UND3).

Significantly associated with this group as in the fourth and fifth factor plans were students who disagreed that interprofessional education leads to a holistic insight in health service (VIE3). Also associated with this group were students' expressing perceptions that disagreed that knowledge about other health professions would make them a better health worker (CMP3).

North in the sixth factor plan (figure 20), was situated at a zone of negative values on the third axis and positive values on the fourth axis. In this group appeared students being interest in interprofessional education, a certain readiness for interprofessional education and OT students (**group 4**). The modalities from group 4 giving enough contributions to at least one of the axes in the sixth plan included OT students and perceptions that strongly agreed that they wanted to have more information about other studies of other health professions (DTU1)

Significantly associated with this group were students who strongly agreed that knowledge about other health professions would make them a better health worker (CMP1), disagreed that they did not see the purpose of doing projects together with students from other professions (PRO3) (as in the fifth factor plan), and disagreed that they did not see the value of teamwork across professional boundaries (GRO3).

### **Summary**

*The sixth factor plan of this correspondence analysis revealed a distinction between three groups: PT students and perceptions of a certain insight into other professions (group 1); students being negative towards the outcome of interprofessional education (group 3); and students expressing interest in interprofessional education, a certain readiness for interprofessional education and OT students (group 4).*

### **5.10 Summary of differences and similarities of students' perceptions of interprofessionalism**

The correspondence analysis showed that it is possible to identify students' expression of perceptions characterising four groups that clearly could be distinguished from each other. The main differences were first found between two main groups seeing and not seeing the value of interprofessional education.

A former appeared in all the six plans described best by the first and fourth axis and composed of *PT students seeing the meaning of working across boundaries and who seemed to be somewhat curious about interprofessional education. However, this student group was somewhat ambivalent about whether or not interprofessional education was the best way to achieve interprofessional cultural capital.* The group consisted of PT students emphasising the advantages of having insight into other professions, comprising students being less positive or somewhat positive towards interprofessionalism and students being less ready for interprofessional education.

To these perceptions were connected:

students between 21-25 years old and students over 30 years with perceptions that to some extent valued to have knowledge about other health professions; and perceptions that in some degree saw the need for interprofessional work.

A second group showed up in first, second, and fourth factor plans and was described best by the first factor axis and comprised *students emphasising the importance of being educated uniprofessionally and those who did not see the value of working across boundaries.* The group consisted of a group of students emphasising uniprofessionalism and comprised students who were negative towards interprofessionalism.

To these perceptions were connected:

perceptions that did not valued knowledge about other health professions; and did not see the need for interprofessional work.

A third group appeared in the first, second, fourth, fifth and sixth factor plans and was described best by the first, third and fourth factor axis and comprised *students emphasising that interprofessional education could give a limited interprofessional cultural capital*. This group emphasised the outcome of interprofessional education and comprised students that to some degree saw the value of interprofessional education in the meaning of giving a superficial knowledge of other health professions' cultural capital and students being somewhat ready for interprofessional education.

To these perceptions were connected:

PT students and perceptions expressing ambivalence about the outcome of interprofessional education.

A fourth group showed up in the first, third, fifth and sixth factor plan and was described best by the second and fourth factor axis and comprised *OT students emphasising the importance of interprofessional education and care*. The group consisted of OT students who emphasised interprofessionalism and especially interprofessional education.

To these perceptions were connected:

the importance of the outcome of interprofessional education.

*The correspondence analysis confirmed the results found from earlier analysis. In addition, the analysis gave a more nuanced picture of what characterised an OT and a PT student concerning their perceptions of interprofessionalism. The PT students were ambivalent about the outcome of interprofessional education. On the other hand, they were somewhat curious about interprofessional education. The OT students appreciated the advantage of interprofessional education, in means of developing professional cultural capital to work together with other health professions.*

## Part II

Part II of the study presents results from the inquiry among OT and PT students at Bergen University College (HiB) and the Karolinska Institutet (KI), Stockholm. In addition to information about the students' gender, age, and the section at upper secondary school, part II reveals the health care students' related occupational experience before and during the study. It shows the students' perception of features of the field of cultural capital in their own future profession and about characteristics of the field of the cultural capital in other health care professions.

### **5.11 A general description of the selected OT and PT population at Bergen University College and the Karolinska Institutet**

In this chapter I first describe characteristics<sup>148</sup> of OT and PT students at HiB and KI, Stockholm. The selected population, separated in four groups, is distributed according to the students' age, gender, and previous education, prior experience in health care before the starting of the study and concurrent with the study.

#### **5.11.1 A general overview of the distribution of four selected student groups**

Figure 21 shows an overview of the distribution of the four main student groups.

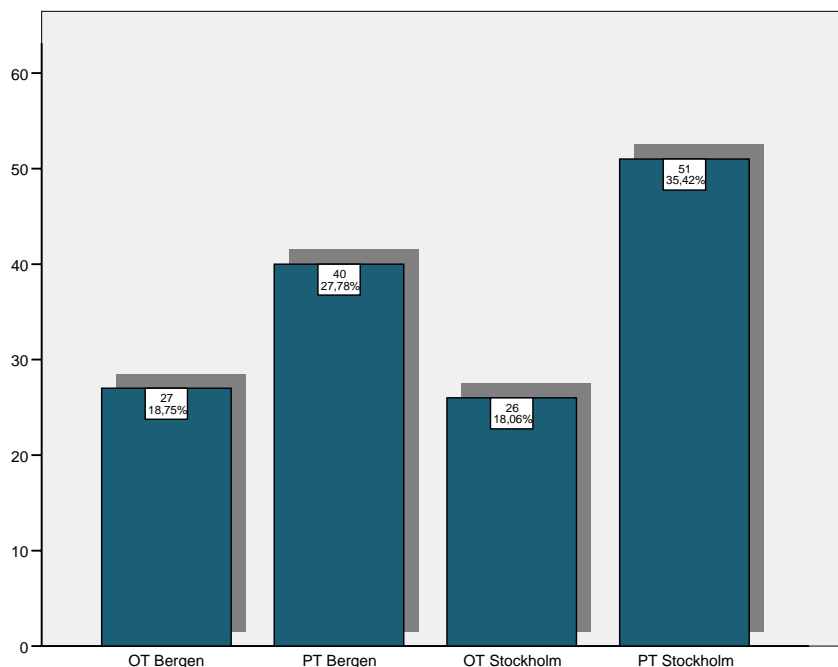


Figure 21: Distribution of the student group

<sup>148</sup> Variables with statements that may influence the students' perception of a health workers' capability are called 'characteristics'.

According to figure 21, the two OT student groups were almost equal in size (28 at HiB and 26 at KI). However, the PT student group at KI was larger (50 students) than the PT students at HiB (40 students).

The distribution of the students from these four groups by gender and age is followed by a similar division between the students' previous education at upper secondary school and by their experience in health care.

**5.11.2 Age**

The distribution of the four main student groups according to age is presented in table 50. A cross tabulation of the profiles of the students' age showed a statistical significant difference between the groups (chi-square = 34.97, df = 6, p ≤ 0.000).

Table 50:<sup>149</sup> Distribution of the student groups according to age (N = 142, 2 did not answered)

Age	OT				PT				Total	
	HiB		KI		HiB		KI		N	%
21-25 years	24	85.7	9	34.6	26	66.7	21	42.9	80	56.3
26-30 years	1	3.6	4	15.4	12	30.8	10	20.4	27	19.0
> 30 years	3	10.7	13	50.0	1	2.5	18	36.7	35	24.7
Total	28	100	26	100	39	100	49	100	142	100

As shown in table 50, the majority of the students were young (56.3% being between 21 and 25 years old). The OT student group at HiB was clearly younger than the other groups (85.7% being between 21 and 25 years old), while the OT student group at KI was older than the other groups (50% being more than 30 years old). The PT students at HiB were younger (2.5% being more than 30 years old) than the PT student group at KI (36.7% were more than 30 years old). In general, students from the two groups at HiB were younger than the two groups at KI.

<sup>149</sup> In table 50, 33% (4) of the categories have a theoretical number lower than 5. This concerns students aged between 26 and 30 and above 30 year. Therefore the chi-square might not be valid. Nevertheless, the table presents data that might give an indication about the differences between the student groups concerning the distribution of age.



### 5.11.3 Gender

A cross-table tabulation of the profiles of the students' gender showed a statistical significant difference between the four groups, distributed according to gender (chi-square = 16.97, df = 3,  $p \leq 0.001$ ). Table 51 shows the distribution of the students in four main groups, according to gender.

Table 51<sup>150</sup>: Distribution of the student groups according to gender (N = 141, 3 did not answered)

<i>Gender</i>	<i>OT</i>				<i>PT</i>				<i>Total</i>	
	<i>HiB</i>		<i>KI</i>		<i>HiB</i>		<i>KI</i>		<i>N</i>	<i>%</i>
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>		
Men	0	0.0	0	0.0	11	28.2	13	26.0	24	17.0
Women	26	100.0	26	100.0	28	71.8	37	74.0	117	83.0
Total	26	100	26	100	39	100	50	100	141	100

According to table 51, the selected population in total was dominated by a female population (83% women and 17% men). Men were not represented at all in the OT student selected groups.

### 5.11.4 Previous education

The distribution of the student groups, according to the section at upper secondary school the students had previously attended, showed a clear significant difference between the groups (chi-square = 28.93, df = 6,  $p \leq 0.000$ ). Table 52 shows the distribution of the students, according to the section at upper secondary education.

Table 52<sup>151</sup>: Distribution of the student groups according to the section at upper secondary school (N = 143, 1 did not answered)

<i>Upper secondary school</i>	<i>OT</i>				<i>PT</i>				<i>Total</i>	
	<i>HiB</i>		<i>KI</i>		<i>HiB</i>		<i>KI</i>		<i>N</i>	<i>%</i>
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>		
General oriented	24	85.7	7	26.9	32	82.1	34	68.0	97	67.8
Occupational oriented	4	14.3	19	73.1	7	17.9	16	32.0	46	32.2
Total	28	100	26	100	39	100	50	100	143	100

<sup>150</sup> In table 51, 25% (2) of the categories have a theoretical number lower than 5. Therefore the chi-square might not be valid. Nevertheless, the table presents data that might give an indication about the gender profile of the student groups. Siegel's recommendation is used for all the chi-square tests.

<sup>151</sup> In table 52, 12.5% (1) of the categories have a theoretical number lower than 5 and is not less than 1. This concerns students having occupation oriented section. Therefore the chi-square is valid and the distribution as the table shows, thus significant.

According to table 52, more than 80 % of the students at HiB had a traditional or academic section of educational study at upper secondary school before entering the study programme, while as many as almost three quarter of the OT students at KI had chosen an occupational the section at upper secondary level. Nearly 70% of the PT students at KI had a traditional section of education study at upper secondary school before starting their profession-oriented study.

### 5.11.5 Prior experience

The analysis showed that there were no statistical significant differences between the responses by the students in the four groups about the following statements:

- Occupational experience in health care before the start of the study
- Occupational experience in health care in parallel with the study
- Summer jobs during the study
- Duration of summer jobs during the study
- Occupational experience in health care during the semester
- Duration of summer jobs during the study

A cross-tabulation of the profiles of the duration of occupational experience in health care before the students entered the study programme showed a statistical significant difference between the students' responses in the four groups.

#### *Duration of occupational experience in health care before the start of the study*

Table 53 shows the distribution of the student groups, according to the duration of occupational experience in health service before they started their study (chi-square = 15.42, df = 6,  $p \leq 0.05$ ).

Table 53<sup>152</sup> : Distribution of the student groups according to duration of occupational experience before the study (N = 43, 141 did not have occupational experience before the study)

	<i>OT</i>		<i>PT</i>		<i>Total</i>	
	<i>HiB</i>	<i>KI</i>	<i>HiB</i>	<i>KI</i>		
<i>Duration of occupational experience before study (months)</i>	N	%	N	%	N	%
2 – 7	3	60.0	1	9.1	3	27.9
9 – 24	2	40.0	1	9.1	5	30.2
24 – 264	0	0.0	9	81.8	1	41.9
Total	5	100	11	100	9	100

Table 53 indicates that the students at HiB had a shorter duration of occupational experience acquired before they started the study, compared with the students at KI. The OT students at

<sup>152</sup> In table 53, 8.3% (7) of the categories have a theoretical number lower than 5. This concerns students having occupational branch of study in the secondary school. Therefore the chi-square might not be valid. Nevertheless, table shows data that might give an indication about the differences between the student groups.

KI had the longest occupational experience in health care before entering the study programme, out of all the four groups. This result coincides with the fact that OT students at KI were older than the other groups.

### **Summary**

*The distribution of the OT and PT students at HiB and KI was almost equal. There were more PT students at KI, compared with the corresponding students at HiB and men were absent as OT students, while one quarter of the PT students were men. Almost all the students at HiB had followed a traditional, or a more academic study programme, at upper secondary school level. Most of the PT students at KI had the corresponding background from upper secondary school as both the student groups at HiB, while most of the OT students at KI had chosen an occupation oriented section at upper secondary school prior to their study. The OT and PT students at HiB were younger than both the student groups at KI. Thus, both student groups at KI had a longer occupational practice before starting their professional education than the corresponding groups at HiB. Having experience from health care might influence the students' perception of their own and of other health professions' cultural capital.*

## **5.12 One-way variance analysis of the perceptions of own and of other profession's cultural capital**

The following chapter includes general description of the students' perception of OT's and PT's cultural capital. First, it shows how the OT and PT students estimate their own and the other profession's cultural capital. Next, in order to confirm whether or not *professional cultural capital is important as a guide to students' interprofessional cultural capital*, a comparison of students' perception of their own and of the other professions' cultural capital among OT and PT students at KI and HiB has been carried out. To study *to what extent the mode of interprofessional education affects students' interprofessional cultural capital*, a comparison of students' perceptions of their own and of the other professions' cultural capital has been carried out among students at KI and HiB, having different mode of interprofessional education.

### **5.12.1 Perceptions from students at Bergen University College and the Karolinska Institute of the OT's cultural capital**

Table 54 provides a general overview of how all the students expressed their view of an OT's cultural capital.

Table 54: General overview about how all the students estimate an OT's cultural capital

<i>OT</i>	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>		<i>Number</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. As an OT it is important to make the patient aware of his/her own body	45	32.9	68	49.6	23	16.8	1	0.7	137	100.0
2. As an OT it is important that the patients will be able to do most things for themselves in their daily life	106	77.4	26	19.0	4	2.9	1	0.7	137	100.0
3. As an OT it is important to inform the patient and his/her family of what he/she can or cannot do	65	47.1	65	47.1	6	4.4	2	1.4	138	100.0
4. In moving around it is important to find what the patient can manage/handle themselves	83	60.2	46	33.3	8	5.8	1	0.7	138	100.0
5. It is important that the patients help themselves rather than using facility/remedies	50	36.5	71	51.8	12	8.8	4	2.9	137	100.0
6. As an OT it is important to find out how things around him/her (i.e. home, work, surrounding areas) affect the patient	102	73.9	34	24.6	2	1.5	0	0.0	138	100.0
7. As an OT it is important to make the patient able to adapt to his/her environment (i.e. home, work, surrounding areas)	47	34.1	47	34.1	29	21.0	15	10.8	138	100.0
8. As an OT it is less important to adapt the environments (i.e. home, work, surrounding areas) to the patient	11	8.0	12	8.7	46	33.3	69	50.0	138	100.0
9. As an OT it is important to know that people develop through activities that seem to be meaningful	91	66.0	42	30.4	4	2.9	1	0.7	138	100.0
10. As an OT it is important to base the patient's activities on things which he/she needs to do in their daily life	100	72.5	32	23.2	5	3.6	1	0.7	138	100.0

Table 54 shows that most of the students agreed (strongly or mildly) with the statements connected to an OT's cultural capital. There was only one exception, namely that a larger part of the students disagreed with the following statement: "as an OT it is less important to adapt the environment to the patient".

### 5.12.2 Perceptions from students at Bergen University College and the Karolinska Institute of the PT's cultural capital

Table 55 provides a general overview of how all the students expressed their view of a PT's cultural capital.

Table 55: General overview of how all the students estimate a PT's cultural capital

<i>PT</i>	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>		Number	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. The PT must see people in relation to society	58	43.6	62	46.6	12	9.0	1	0.8	133	100.0
2. The PT must know which cognitive limitations result from a disability	71	53.4	55	41.3	5	3.8	2	1.5	133	100.0
3. The PT must know which movement limitations result from a disability	109	81.9	23	17.3	0	0.0	1	0.8	133	100.0
4. The PT must analyse the patients' fine movements technique	39	29.3	69	51.9	22	16.6	3	2.2	133	100.0
5. The PT must measure range of motion and muscle strength	95	71.4	35	26.3	3	2.3	0	0.0	133	100.0
6. The PT must perform a gait/walking analysis	105	78.9	25	18.8	2	1.5	1	0.8	133	100.0
7. The PT must improve the patient's mobility by exercise	80	60.2	45	33.8	8	6.0	0	0.0	133	100.0
8. The PT must think more preventively	85	63.9	44	33.1	3	2.3	1	0.8	133	100.0
9. The PT perceives themselves more as an educationist /teacher rather than a therapist	8	6.0	62	46.6	51	38.4	12	9.0	133	100.0
10. The PT must adjust needed facilities	24	18.2	77	58.3	25	19.0	6	4.5	132	100.0

Table 55 shows that most of the students agreed (strongly or mildly) with the cultural capital attributed to a PT as listed.

### 5.12.3 OT and PT students' perception of their own profession's cultural capital

Tables 56 and 57, show a general overview of the OT and PT students' perception of their own profession.

Table 56: General overview about how the OT students estimate an OT's cultural capital

	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>		<i>Number</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. As an OT it is important to make the patient aware of his/her own body	20	37.7	30	55.6	3	5.7	0	0.0	53	100.0
2. As an OT it is important that the patients will be able to do most things for themselves in their daily life	47	88.7	6	11.3	0	0.0	0	0.0	53	100.0
3. As an OT it is important to inform the patient and his/her family of what he/she can or cannot do	25	46.3	26	48.1	2	3.7	1	1.9	54	100.0
4. In moving around it is important to find what the patient can manage/handle themselves	41	75.9	13	24.1	0	0.0	0	0.0	54	100.0
5. It is important that the patients help themselves rather than using facility/remedies	26	48.1	27	50.0	1	1.9	0	0.0	53	100.0
6. As an OT it is important to find out how things around him/her (i.e. home, work, surrounding areas) affect the patient	48	88.9	6	11.1	0	0.0	0	0.0	54	100.0
7. As an OT it is important to make the patient able to adapt to his/her environment (i.e. home, work, surrounding areas)	16	29.6	16	29.6	16	29.6	6	11.2	54	100.0
8. As an OT it is less important to adapt the environments (i.e. home, work, surrounding areas) to the patient	2	3.7	1	1.8	21	38.9	30	55.6	54	100.0
9. As an OT it is important to know that people develop through activities that seem to be meaningful	45	83.3	9	16.7	0	0.0	0	0.0	54	100.0
10. As an OT it is important to base the patient's activities on things which he/she needs to do in their daily life	48	88.9	5	9.3	1	1.8	0	0.0	54	100.0

Table 56 shows that most of the OT students agreed (strongly or mildly) with the cultural capital attributed to an OT as listed, except for the one statement negatively directed: “as an OT it is less important to adapt the environments to the patient”.

Table 57: General overview of how the PT students estimate a PT's cultural capital

	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>		<i>Number</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. The PT must see people in relation to society	46	51.1	40	44.5	3	3.3	1	1.1	90	100.0
2. The PT must know which cognitive limitations result from a disability	59	65.6	30	33.3	0	0.0	1	1.1	90	100.0
3. The PT must know which movement limitations result from a disability	73	81.1	16	17.8	0	0.0	1	1.1	90	100.0
4. The PT must analyse the patients' fine movements technique	24	26.7	51	56.7	15	16.6	0	0.0	90	100.0
5. The PT must measure range of motion and muscle strength	62	68.9	26	28.9	2	2.2	0	0.0	90	100.0
6. The PT must perform a gait/walking analysis	69	76.7	20	22.2	2	1.1	0	0.0	90	100.0
7. The PT must improve the patient's mobility by exercise	51	56.7	34	37.8	5	5.5	0	0.0	90	100.0
8. The PT must think more preventively	65	72.2	23	25.6	1	1.1	1	1.1	90	100.0
9. The PT perceives themselves more as an educationist /teacher rather than a therapist	8	8.9	45	50.0	32	35.5	5	5.6	90	100.0
10. The PT must adjust needed facilities	18	20.0	61	67.8	11	12.2	0	0.0	90	100.0

Table 57 shows that most of the students agreed (strongly or mildly) with the cultural capital attributed to a PT as listed. Less than ten percent of the students strongly agreed that “the PT perceives themselves more as a teacher rather than a therapist”.

#### 5.12.4 OT and PT students' perception of the other profession's cultural capital

Tables 58 and 59, show a general overview of the OT and PT students' perception of the other profession's cultural capital.

Table 58: General overview about how the PT students estimate an OT's cultural capital

	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>		<i>Number</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. As an OT it is important to make the patient aware of his/her own body	25	27.8	38	45.2	20	23.8	1	1.2	84	100.0
2. As an OT it is important that the patients will be able to do most things for themselves in their daily life	59	70.2	20	23.8	4	4.8	1	1.2	84	100.0
3. As an OT it is important to inform the patient and his/her family of what he/she can or cannot do	40	47.6	39	46.4	4	4.8	1	1.2	84	100.0
4. In moving around it is important to find what the patient can manage/handle themselves	42	50.0	33	39.3	8	9.5	1	1.2	84	100.0
5. It is important that the patients help themselves rather than using facility/remedies	24	28.9	44	53.0	11	13.3	4	4.8	83	100.0
6. As an OT it is important to find out how things around him/her (i.e. home, work, surrounding areas) affect the patient	54	64.3	28	33.3	2	2.4	0	0.0	84	100.0
7. As an OT it is important to make the patient able to adapt to his/her environment (i.e. home, work, surrounding areas)	31	36.9	31	36.9	13	15.5	9	10.7	84	100.0
8. As an OT it is less important to adapt the environments (i.e. home, work, surrounding areas) to the patient	9	10.7	11	13.1	25	29.8	39	46.4	84	100.0
9. As an OT it is important to know that people develop through activities that seem to be meaningful	46	54.8	33	39.3	4	4.7	1	1.2	84	100.0
10. As an OT it is important to base the patient's activities on things which he/she needs to do in their daily life	52	61.9	27	32.1	4	4.8	1	1.2	84	100.0

Table 58 shows that most of the PT students agreed (strongly or mildly) with the cultural capital attributed to an OT as listed, except for the one statement negatively directed: “as an OT it is less important to adapt the environments to the patient”.



Table 59: General overview of how the OT students estimate a PT's cultural capital

	<i>Strongly agree</i>		<i>Mildly agree</i>		<i>Mildly disagree</i>		<i>Strongly disagree</i>		<i>Number</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
1. The PT must see people in relation to society	12	27.9	22	51.2	9	20.9	0	0.0	43	100.0
2. The PT must know which cognitive limitations result from a disability	12	27.9	25	58.2	5	11.6	1	2.3	43	100.0
3. The PT must know which movement limitations result from a disability	36	83.7	7	16.3	0	0.0	0	0.0	43	100.0
4. The PT must analyse the patients' fine movements technique	15	34.9	18	41.8	7	16.3	3	7.0	43	100.0
5. The PT must measure range of motion and muscle strength	33	76.8	9	20.9	1	2.3	0	0.0	43	100.0
6. The PT must perform a gait/walking analysis	36	83.7	5	11.7	1	2.3	1	2.3	43	100.0
7. The PT must improve the patient's mobility by exercise	29	67.4	11	25.6	3	7.0	0	0.0	43	100.0
8. The PT must think more preventively	20	46.5	21	48.8	2	4.7	0	0.0	43	100.0
9. The PT perceives themselves more as an educationist /teacher rather than a therapist	17	39.5	19	44.2	7	16.3	0	0.0	43	100.0
10. The PT must adjust needed facilities	6	14.3	16	38.1	14	33.3	6	14.3	43	100.0

Table 59 shows that most of the OT students agreed (strongly or mildly) with the cultural capital attributed to a PT as listed.

### 5.12.5 OT and PT students' perception of their own and of the other profession's cultural capital

A one-way variance analysis showed that there were no statistical significant differences between the responses by the OT and PT students about the following seven statements connected to an OT's and a PT's cultural capital:

- As an OT it is important to inform the patient and his/her family of what he/she can or cannot do
- As an OT it is important to make the patient able to adapt to his/her environment.
- The PT must know which movement limitations result from a disability
- The PT must analyse fine movements technique with the patient
- The PT must measure range of motion and muscle strength
- The PT must perform a gait/walking analyse
- The PT must improve the patient's mobility by exercise

These statements express all perceptions concerning skills that, in a way or another, are obviously linked to an OT's and to a PT's cultural capital. This fact also contributes to explain why the differences between the student groups' perceptions were small with regard to these statements.

The analysis showed statistical significant differences between the responses by the OT and PT student groups, regarding their response to 13 statements about an OT's and a PT's cultural capital, out of the eight statements about the OT's cultural capital and five statements concerning the PT's cultural capital. Tables 60 and 61, reveal a comparison between the OT and PT students' perceptions of their own and of the other profession's cultural capital, with regards to the mean and the number. The tables also show statistical significant differences between the student groups, concerning their perceptions of how they expressed themselves about these statements.

Table 60: Comparison of how OT and PT students in average estimate the OT's cultural capital<sup>153</sup>

	<i>OT students</i>		<i>PT students</i>	
	<i>Means</i>	<i>Number</i>	<i>Means</i>	<i>Number</i>
1. As an OT it is important to make the patient aware of his/her own body*	1.68	53	1.95	84
2. As an OT it is important that the patients will be able to do most things for themselves in their daily life*	1.11	53	1.36	84
4. In moving around it is important to find what the patient can manage/handle themselves**	1.24	54	1.61	84
5. It is important that the patients help themselves rather than using facilities/remedies**	1.54	54	1.89	83
6. As an OT it is important to find out how things around him/her (i.e. home, work, surrounding areas) affect the patient**	1.11	54	1.38	84
8. As an OT it is less important to adapt the environments to the patient (i.e. home, work, surrounding areas)*	2.50	54	2.23	84
9. As an OT it is important to know that people develop through activities that seem to be meaningful**	1.17	54	1.51	84
10. As an OT it is important to base the patient's activities on things which he/she needs to do in their daily life**	1.13	54	1.44	84

\* = significant  $\leq 0,05$

\*\* = significant  $\leq 0,01$

Table 60 shows that there were statistical significant differences between responses by the OT and PT students about eight statements connected to an OT's cultural capital.

The OT students seemed, to a larger extent, to agree with statements concerning their own profession compared with how the PT students estimated an OT's cultural capital. The statement that was the most negatively directed tends to be an exception: "as an OT it is less important to adapt the environments to the patient". The OT students seemed, in general, to be more convinced than the PT students about the importance for an OT to adapt the environments to the patient.

<sup>153</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

Table 61: Comparison of how OT and PT students in average estimate the PT's cultural capital<sup>154</sup>

	<i>OT students</i>		<i>PT students</i>	
	<i>Means</i>	<i>Number</i>	<i>Means</i>	<i>Number</i>
1. The PT must see people in relation to society**	1.93	43	1.53	90
2. The PT must know which cognitive limitations result from a disability***	1.86	43	1.36	90
8. The PT must think more preventively*	1.58	43	1.31	90
9. The PT perceives themselves more as an educationist/teacher rather than a therapist*	2.60	43	2.32	90
10. The PT must adjust needed facilities***	2.33	42	1.92	90

\* = significant  $\leq 0,05$

\*\* = significant  $\leq 0,01$

\*\*\* = significant  $\leq 0.001$

Table 61 shows that there were statistical significant differences between the OT students and the PT students concerning their perception of five statements about a PT's cultural capital.

The PT students seemed, to a larger extent, to agree with statements about their own professions compared with how the OT students estimated a PT's cultural capital.

### **Summary**

*The OT students' perceptions of their own profession seemed to be that an OT should raise the patients' consciousness about their own ability to be self-reliant, and that an OT should be aware that the society has some responsibility for the patient's daily life. However, the PT students were least convinced whether or not this characterises an OT's cultural capital. The PT students seemed to express themselves that a PT has a holistic view and a preventive role in health care. In addition, they experienced themselves to have some of an OT's skills, like adjusting facilities. On the other hand, the OT student groups were not assured this marked a PT's cultural capital.*

*The analysis of students' perceptions of their own and of the other professions' cultural capital showed that OT and PT students comprehended the cultural capital of their own and of the other professions differently. In other words, professional cultural capital tended to be important as a guide to students' interprofessional cultural capital.*

<sup>154</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

### **5.12.6 Perceptions from students at Bergen University College and the Karolinska Institutet of OT's and PT's cultural capital**

A one-way variance analysis showed that there were no statistical significant differences between the responses by the students at HiB and KI about the following statements connected to an OT's and a PT's cultural capital:

- As an OT it is important to make the patient aware of his/her own body
- As an OT it is important that the patients will be able to do most things for themselves in their daily life
- As an OT it is important to inform the patient and his/her family of what he/she can or cannot do
- It is important that the patients help themselves rather than using facility/remedies
- As an OT it is important to find out how things around him/her (i.e. home, work, surrounding areas) affect the patient
- As an OT it is important to know that people develop through activities that seem to be meaningful
- As an OT it is important to base the patient's activities things which he/she needs to do in their daily life
- The PT must see people in relation to society
- The PT must know which cognitive limitations result from a disability
- The PT must know which movement limitations result from a disability
- The PT must analyse the patient's fine movements technique
- The PT must measure range of motion and muscle strength
- The PT must perform a gait/walking analyse
- The PT must improve the patient's mobility by exercise
- The PT must think more preventively

The one-ways variance analysis showed statistical significant differences between the responses by the student groups at HiB and KI towards five statements concerning an OT's and a PT's cultural capital, out of the three statements about the OT's cultural capital, and two about the PT's cultural capital.

Tables 62 and 63 compare perceptions of an OT's and a PT's cultural capital, among students at HiB and KI, with regards to average means and number. The tables also indicate statistical significant differences between the student groups connected to how the students expressed their perceptions about the statements.

Table 62: Average perception of an OT's cultural capital from the students at HiB and KI<sup>155</sup>

	HiB		KI	
	Means	Number	Means	Number
4. In moving around it is important to find what the patient can manage/handle themselves *	1.31	64	1.59	74
7. As an OT it is important to make the patient able to adapt to his/her environment (i.e. home, work, surrounding areas)***	2.39	64	1.62	74
8. As an OT it is less important to adapt the environments to the patient (i.e. home, work, surrounding areas) **	2.44	64	2.24	74

\* = significant  $\leq 0,05$

\*\* = significant  $\leq 0,01$

\*\*\* = significant  $\leq 0.001$

According to table 62, there were a statistical significant difference between students at HiB and KI concerning three statements about an OT's cultural capital. The OT and PT students at HiB agreed to a larger extent with the first statement: "in moving around it is important to find what the patient can manage/handle themselves". On the other hand, the students at KI responded more positively on the two statements: "as an OT it is important to make the patient able to adapt to his/her environment" and "as an OT it is less important to adapt the environments to the patient".

Table 63: Average perception of a PT's cultural capital from the students at HiB and KI

	HiB		KI	
	Means	Number	Means	Number
9. The PT perceives themselves more like an educationist /teacher rather than a therapist**	2.66	68	2.15	65
10. The PT must adjust needed facilities*	2.24	68	1.86	64

\* = significant  $\leq 0.01$

\*\* = significant  $\leq 0.001$

According to table 63 there were statistical significant differences between the students' perception at HiB and KI of the following two statements about a PT's cultural capital: "the PT perceives themselves more like an educationist/teacher rather than a therapist" and "the PT must adjust needed facilities".

The student groups at KI seemed largely to agree with statements concerning a PT's cultural capital compared with how the two groups at HiB estimated a PT's cultural capital.

<sup>155</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

### **Summary**

*The students at KI seemed to be more convinced that an OT should adapt the patient to the society, compared with the students at HiB. The students groups at KI agreed more that an OT should make the patient to adapt to their environment and not the opposite, i.e. the environments to be adapted to the patient. The students at KI were more convinced that a PT has a role more like a teacher and that a PT has some of an OT's skills, like adjusting facilities, compared with the students at HiB.*

*The analysis of students' perceptions of their own and of the other professions' cultural capital showed that students at KI and HiB comprehended the cultural capital of their own and of the other's professions differently, i.e. the mode of interprofessional socialisation seemed to affect the students' interprofessional cultural capital.*

### **5.13 Students' expression about an OT and a PT's cultural capital – one-way variance analysis**

The following two chapters distinguish the students in four main groups, OT students at HiB, PT students at HiB, OT students at KI and PT students at KI, and show the students' responses to the 20 statements about an OT's and a PT's cultural capital. In order to confirm whether or not *the mode of interprofessional education or the cultural capital of a profession is important for students' interprofessional cultural capital*, a comparison of students' perception of their own and of the other professions' cultural capital among OT and PT students at KI and HiB has been carried out. By comparing students' perceptions of their own and the other professions' cultural capital connected to their former habitus, acquired through upper secondary school and work experience before and in parallel with the study within the field of health care, the intention was to gain an insight into *what extent a former habitus affects students' interprofessional cultural capital*.

#### **5.13.1 OT's cultural capital**

This chapter shows differences between the four student groups in their view on an OT's cultural capital. A one-way variance analysis showed no statistical significant difference between the responses by the four student groups on the following statement: "as an OT it is important that the patients will be able to do most things for themselves in their daily life".

The analysis showed statistical significant differences between the responses by the OT and PT student groups at HiB and KI on the following nine statements about an OT's cultural capital (table 64).

Table 64: One – way variance analysis of the distribution of perceptions of an OT's cultural capital from OT and PT students at HiB and KI

<i>OT</i>	<i>Sources</i>	<i>Degrees of freedom (df)</i>	<i>Sum of squares</i>	<i>Mean square</i>	<i>F</i>
1.As an OT it is important to make the patient aware of his/her own body	Between groups	3	5.777	1.926	4.27**
	Within groups	133	60.004	0.451	
	Total	136	65.781		
3. As an OT it is important to inform the patient and his/her family of what he/she can or cannot do	Between groups	3	3.259	1.086	3.15*
	Within groups	134	46.198	0.345	
	Total	137	29.457		
4. In moving around it is important to find what the patient can manage/handle themselves	Between groups	3	7.562	2.521	7.55***
	Within groups	134	44.757	0.334	
	Total	137	52.319		
5. It is important that the patients help themselves rather than using facilities/remedies	Between groups	3	4.325	1.442	3.60*
	Within groups	133	53.237	0.000	
	Total	136	57.562		
6. As an OT it is important to be find out how things around him/her (i.e. home, work, surrounding areas) affect the patient	Between groups	3	3.156	1.052	4.967**
	Within groups	134	28.380	0.212	
	Total	137	31.536		
7. As an OT it is important to make the patient able to adapt to his/her environments (i.e. home, work, surrounding areas)	Between groups	3	19.699	6.566	12.35***
	Within groups	134	71.235	0.532	
	Total	137	90.935		
8. As an OT it is less important to adapt the environments to the patient (i.e. home, work, surrounding areas)	Between groups	3	5.310	1.770	5.61***
	Within groups	134	42.313	0.316	
	Total	137	47.623		
9. As an OT it is important to know that human beings develop through activities that seem meaningful	Between groups	3	3.784	1.261	4.38**
	Within groups	134	38.622	0.288	
	Total	137	42.406		
10.As an OT it is important to base the patient's activities things which he/she needs to do in their daily life	Between groups	3	8.398	2.799	11.17***
	Within groups	134	33.573	0.251	
	Total	137	41.971		

\*p ≤ 0.05, \*\* p ≤ 0.01, \*\*\* p ≤ 0.001

Tables 65 - 73 present perceptions from each of four the student groups from those statements where differences were statistical significant is presented, ranking the group from the lowest mean to the highest mean. The average mean is indicated by the dotted line.

***As an OT it is important to make the patient aware of his/her own body***

Table 65: Arithmetic mean for reply frequencies from the four student groups (ranked) and for the total distribution of the question concerning the students' perceptions of: that it is important as an OT to make the patient aware of their own body (question 1)

<i>Student groups</i>	<i>N</i>	<i>Mean</i> <sup>156</sup>	<i>Overall mean</i>
OT at KI	26	1.42	1.85
OT at HiB	27	1.93	
PT at HiB	36	1.94	
PT at KI	48	1.96	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 65). Table 65 ranks the students from those having the lowest to those having the highest mean. It shows that OT students at KI constituted the group most convinced about the importance as an OT to make the patient aware of their own body and were the group situated farthest from the mean. On the other hand, the PT students at KI were the least convinced about the importance as an OT to make the patient aware of their own body.

The mean for the OT students at KI corresponded to a value between 'strongly agree' and 'mildly agree' on the scale, while the mean for the PT students at KI was located at the level of 'mildly agree' on the scale.

***As an OT it is important to inform the patient and his/her family of what he/she can or cannot do***

Table 66: Arithmetic mean for reply frequencies from the four student groups (ranked) and for the total distribution of the question concerning the students' perceptions of: that it is important as an OT to inform the patient and their family of what they can do or cannot do (question 3)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
PT at HiB	36	1.39	1.59
OT at KI	26	1.46	
OT at HiB	27	1.71	
PT at KI	49	1.73	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 66). Table 66 ranks the students from those having the lowest to those having the highest mean. It shows that PT students at HiB constituted the group most convinced about the importance for an OT to inform about what the patient can do or cannot do and were the group situated farthest from the mean. On the

<sup>156</sup> 1-1.4 = strongly agree, 1.5 - 2.4 = mildly agree, 2.5 - 3.4 = mildly disagree, 3.5 - 4.4 = strongly disagree.



other hand, the PT students at KI were the least convinced about the importance for an OT to inform about what the patient can do or cannot do.

The mean for the PT students at HiB corresponded to a value level between ‘strongly agree’ and ‘mildly agree’ on the scale, and the mean for the PT students at KI was located at the level between ‘strongly agree’ and ‘mildly agree’.

***In moving around it is important to find what the patient can manage/handle themselves***

Table 67: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students’ perceptions of: when moving around it is important to find what the patient can handle themselves (question 4)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
OT at HiB	27	1.15	
OT at KI	26	1.31	
PT at HiB	36	1.42	
			1.46
PT at KI	49	1.76	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 67). Table 67 ranks the students from those having the lowest to those having the highest mean. It shows that OT students at HiB constituted the group most convinced about the importance to find what the patients can do themselves when moving around and were the group situated farthest from the mean. On the other hand, the PT students at KI were the least convinced about the importance to find what the patient can do themselves when moving around.

The mean for the OT students at HiB corresponded to a value ‘strongly agree’ on the scale, while the mean for the PT students at KI was located at the level between ‘strongly agree’ and ‘mildly agree’.

***It is important that the patients help themselves rather than using facilities/remedies***

Table 68: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students’ perception of: that it is important that the patients help themselves rather than using facility (question 5)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
OT at HiB	27	1.52	
OT at KI	26	1.54	
			1.75
PT at HiB	36	1.89	
PT at KI	48	1.90	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 68). Table 68 ranks the students from those having the lowest to those having the highest mean. It shows that OT students at HiB constituted the group most convinced about the importance for letting the patients help themselves rather than using facility and were the group situated farthest from the mean. On the other hand, the PT students at KI were the least convinced about the importance for letting the patients help themselves rather than using facilities.

The mean for the OT students at HiB corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for the PT students at KI was located at the level of ‘mildly agree’.

***As an OT it is important to be find out how things around affect him/her (i.e. home, work, surrounding areas) the patient***

Table 69: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students’ perceptions of: that it is important as an OT to find out how things around affect the patient (question 6)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
OT at KI	26	1.04	
OT at HiB	27	1.19	
			1.28
PT at HiB	36	1.28	
PT at KI	49	1.45	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 69). Table 69 ranks the students from those having the lowest to those having the highest mean. It shows that OT students at KI constituted the group most convinced about the importance for an OT to find out how things around affect the patient and were the group situated farthest from the mean. The PT students at KI were the least convinced about the importance for an OT to find out how things around affect the patient.

The mean for the OT students at KI corresponded to a value ‘strongly agree’ on the scale, while the mean for the PT students at KI was located at the level between ‘strongly agree’ and ‘mildly agree’.

***As an OT it is important to make the patient able to adapt to his/her environments (i.e. home, work, surrounding areas)***

Table 70: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students' perceptions of about: that it is important as an OT to make the patient to adapt to their own environment (question 7)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
PT at KI	49	1.63	
OT at KI	26	1.69	
			2.09
PT at HiB	36	2.53	
OT at HiB	27	2.70	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 70). Table 70 ranks the students from those having the lowest to those having the highest mean. It shows that PT students at KI constituted the group most convinced about the importance for an OT to help the patient to adapt the environment. On the other hand, the OT students at HiB were the least convinced about the importance for an OT to make the patient able to adapt to the environment and were the group situated farthest from the mean.

The mean for the OT students at KI corresponded to a value between 'strongly agree' and 'mildly agree' on the scale, while the mean for the PT students at KI was located at the level between 'mildly agree' and 'mildly disagree'.

***As an OT it is less important to adapt the environments (i.e. home, work, surrounding areas) to the patient***

Table 71: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students' perceptions of: that it is less important as an OT to adapt the environments to the patient (question 8)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
PT at KI	48	2.49	
			2.75
OT at HiB	27	2.89	
PT at HiB	36	2.89	
OT at KI	27	2.92	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 71). Table 71 ranks the students from those having the lowest to those having the highest mean. It shows that PT students at KI constituted the group most convinced about the importance for an OT not to adapt the environment to the patient and were the group situated farthest from the mean. On the other

hand, the OT students at KI were the least convinced about the important for an OT not to adapt the environments to the patient.

The mean for the PT students at KI corresponded to a value between ‘mildly agree’ and ‘mildly disagree’ on the scale, while the mean for the OT students at KI was located at the level of ‘mildly disagree’.

***As an OT it is important to know that human beings develop through activities that seem meaningful***

Table 72: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students’ perceptions of: that it is important as an OT to know that human beings develop through activities that seem meaningful (9)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
OT at HiB	27	1.15	
OT at KI	26	1.19	
			1.38
PT at HiB	36	1.47	
PT at KI	49	1.53	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 72). Table 72 ranks the students from those having the lowest to those having the highest mean. It shows that OT students at HiB constituted the group the most convinced about the importance for an OT to know that human beings develop through meaningful activities and were the group situated farthest from the mean. On the other hand, the PT students at KI were the least convinced about the importance for an OT to know that human beings develop through meaningful activities.

The mean for the OT students at HiB corresponded to a value ‘strongly agree’ on the scale, while the mean for the PT students at KI was located at the level between ‘strongly agree’ and ‘mildly agree’.

***As an OT it is important to base the patient's activities things which he/she needs to do in their daily life***

Table 73: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students' perceptions of: that it is important about: as an OT to base the patient's activities on things which they need to do in their daily life (question 10)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
OT at KI	26	1.00	
PT at HiB	36	1.17	
OT at HiB	27	1.26	
			1.32
PT at KI	49	1.63	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 73). Table 73 ranks the students from those having the lowest to those having the highest mean. It shows that OT students at KI constituted the group most convinced that an OT should relate activities to the patient's daily life and were the group situated farthest from the mean. On the other hand, the PT students at KI were the least convinced about an OT should base the activities to patient's daily life.

The mean for the OT students at KI corresponded to a value 'strongly agree' on the scale, while the mean for the PT students' responses at KI are located at the level between 'strongly agree' and 'mildly agree'.

***Summary***

*The results are summarised in table 74. It shows that the OT students at KI expressed that an OT has a kind of preventive role, a role often characterising a PT (statements 1 and 3), while the PT students at KI were least convinced that an OT has a preventive role. The OT students, both at KI and HiB, agreed more about the importance of letting the patient help themselves (statements 4 and 5), compared with the PT students. The PT students at KI seemed to be less convinced that an OT should find out how the surroundings affect the patient than the other groups (statement 6. The OT and PT students at KI indicated that an OT should be aware that both the patient and the society are responsible for the patient's welfare (statement 7). The two OT groups were also convinced about the importance for an OT to base the patient's activity to meaningful, daily doings (statements 9 and 10).*

Table 74: Rank scaling of students' perceptions of an OT's cultural capital<sup>157</sup>

Question	1. <i>AWA</i> Aware	3. <i>INF</i> Inform	4. <i>CAN</i> Moving	5. <i>FAC</i> Help themselves	6. <i>SUR</i> Affect	7. <i>FIT</i> Patient adapt	8. <i>ADA</i> Adapt environm.	9. <i>EVO</i> Evolve	10. <i>DAY</i> Daily
Student groups									
OT at KI	++	++	+++	++	+++	+	---	+++	+++
OT at HiB	+	+	+++	++	+++	---	---	+++	+++
PT at HiB	+	++	++	+	+++	--	---	++	+++
PT at KI	-	+	+	+	++	++	--	++	++

The empirical study showed that both the OT student groups perceived that an OT has to help the patients to be self-reliant. On the other hand, the two student groups at HiB were more convinced that the society is responsible for the patient's wellbeing, while the OT and PT students at KI were more aware that the patients themselves are responsible for managing their daily life, compared with the student groups at HiB. The OT students at KI comprehended their future role in health care to be more preventively, compared with the other three student groups. The differences, however, between the responses by the OT and PT students might be greater than the difference between the educational institutions in Bergen and Stockholm. In this way, both professional cultural capital and the mode of interprofessional socialisation tended to affect students' interprofessional cultural capital.

### 5.13.2 PT's cultural capital

This chapter will show differences between the perceptions of a PT's cultural capital from the four student groups.

There were no statistical significant differences between the students' perceptions of the responses by the four student groups regarding the following five statements:

- The PT must know which movement limitations result from a disability
- The PT must analyse fine patients' movement technique
- The PT must measure range of motion and muscle strength
- The PT must perform a gait/walking analyses
- The PT must improve the patient's mobility by exercise

These statements express all perceptions that are linked to a PT's skills and may be well-known for all the four student groups. This may explain why the differences between the perceptions from the four groups were not higher than the variance within the groups.

<sup>157</sup> Ranking scale: +++ = 1-1.3, ++ = 1.4-1.6, + = 1.7-1.9, - = 2.0-2.2, -- = 2.3-2.5, --- = 2.6-2.8.

The one-way variance analysis showed statistical significant differences between the responses by the OT and PT student groups at HiB and KI about five statements about a PT's cultural capital (table 75).

Table 75: One-way variance analysis of the distribution of perceptions of a PT's cultural capital from OT and PT students at HiB and KI

<i>PT</i>	<i>Sources</i>	<i>Degrees of freedom (df)</i>	<i>Sum of squares</i>	<i>Mean Square</i>	<i>F</i>
1. The PT must see people in relation to society	Between groups	3	6.893	2.298	6.06**
	Within groups	129	48.882	0.379	
	Total	132	55.774		
2. The PT must know which cognitive limitations result from a disability	Between groups	3	7.973	2.658	8.74**
	Within groups	129	39.30	0.304	
	Total	132	47.203		
8. The PT must think more preventively	Between groups	3	3.017	1.006	3.54*
	Within groups	129	36.652	0.284	
	Total	132	39.669		
9. The PT perceives themselves more as an educationist rather than a therapist	Between groups	3	8.843	2.948	9.65**
	Within groups	129	39.413	0.306	
	Total	132	48.256		
10. The PT must adjust needed facilities	Between groups	3	10.268	3.423	9.88**
	Within groups	128	44.360	0.347	
	Total	131	54.629		

\*  $p \leq 0,05$

\*\*  $p \leq 0,001$

Tables 76 - 80 present the perceptions from each of the student groups for those statements where differences were statistically significant ranking the group from the lowest mean to the highest mean. The average mean is indicated by the dotted line.

***The PT must see people in relation to society***

Table 76: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students' perception of: that the PT must see people in relation to society (question 1)

<i>Student groups</i>	<i>N</i>	<i>Mean</i> <sup>158</sup>	<i>Overall mean</i>
PT at HiB	40	1.43	
PT at KI	51	1.63	
			1.66
OT at KI	15	1.67	
OT at HiB	27	2.07	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 76). Table 76 ranks the students from those having the lowest to those having the highest mean. It shows that PT students at HiB

<sup>158</sup> 1-1.4 = strongly agree. 1.5 – 2.4 = mildly agree, 2.5 – 3.4 = mildly disagree, 3.5 – 4.4 strongly disagree.

constituted the group most convinced about the PT must see people in a broader perspective in the society. The OT students at HiB were the least convinced of all the student groups that the PT must see people in relation to society and were the group situated farthest from the mean.

The mean for the PT students at HiB corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for OT students at HiB are located at the level of ‘mildly agree’ on the scale.

***The PT must know which cognitive limitations result from a disability***

Table 77: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students’ perception of: that the PT must know which cognitive limitations result from a disability (question 2)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
PT at KI	51	1.33	
PT at HiB	40	1.40	
			1.52
OT at KI	15	1.67	
OT at HiB	27	1.96	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 77). Table 77 ranks the students from those having the lowest to those having the highest mean. It shows that PT students at KI constituted the group most convinced about the PT must have knowledge about cognitive limitations connected to a disability. The OT students at HiB were the least convinced of all the student groups that the PT must have knowledge about cognitive limitations connected to a disability and were the group situated farthest from the means.

The mean for the PT students at HiB corresponded to a value between ‘strongly agree’ and ‘mildly agree’ on the scale, while the mean for the OT students at HiB are located at the level of ‘mildly agree’ on the scale.



***The PT must think more preventively***

Table 78: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students' perception of: that the PT must think more preventively (question 8)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
PT at HiB	40	1.23	
PT at KI	50	1.36	
			1.39
OT at KI	15	1.53	
OT at HiB	28	1.61	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 78). Table 78 ranks the students from those having the lowest to those having the highest mean. It shows that PT students at HiB constituted the group most convinced that the PT must have a preventive role. The OT students at HiB were the least convinced of all student groups about the PT must have a preventive role and were the group situated farthest from the mean.

The mean for the PT students at HiB corresponded to a value 'strongly agree' on the scale stage, while the mean for the OT students at HiB are located at the level between 'strongly agree and 'mildly agree' on the scale.

***The PT perceives themselves more as an educationist rather than a therapist***

Table 79: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students' perception of: that the PT perceives themselves more as an educationist rather than a therapist (question 9)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
PT at KI	51	2.12	
OT at KI	15	2.33	
			2.41
PT at HiB	40	2.60	
OT at HiB	27	2.74	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 79). Table 79 ranks the students from those having the lowest to those having the highest mean. It shows that PT students at KI constituted the group most convinced about the PT have a role as a teacher. The OT students at HiB were the least convinced of all the student groups that the PT has a role as a teacher and were the group situated farthest from the mean.

The mean for the PT students at KI corresponded to a value level ‘mildly agree’ on the scale stage, while the mean for the OT students at HiB are located at the level between ‘mildly agree’ and ‘mildly disagree’ on the scale.

***The PT must adjust needed facilities***

Table 80: Arithmetic mean for reply frequencies from four student groups (ranked) and for the total distribution of the question concerning the students’ perception of: that the PT must adjust needed facilities (question 10)

<i>Student groups</i>	<i>N</i>	<i>Mean</i>	<i>Overall mean</i>
OT at KI	14	1.79	
PT at KI	51	1.90	
PT at HiB	40	1.98	
			2.05
OT at HiB	27	2.59	

There were statistical significant differences between the arithmetic mean of the distribution of the responses by the four student groups (table 80). Table 80 ranks the students from those having the lowest to those having the highest mean. It shows that OT students at KI constituted the group most convinced about the PT must adjust needed facilities. The OT students at HiB were the least convinced of all the student groups that the PT must adjust needed facilities and were the group situated farthest from the mean.

The mean for the OT students at KI corresponded to a value ‘mildly agree’, while the mean for the OT students at HiB are located at the level between ‘mildly agree’ and ‘mildly disagree’ on the scale.

***Summary***

*The results are summarised in table 81. It shows that PT students at HiB and KI agreed that a PT has a holistic view of health care (statements 1 and 2). The OT students at HiB were the least convinced of all the student groups, that a PT has a holistic view on the patient. Both the PT student groups comprehended a PT to have has a preventive role in health care (statement 8). The PT students at KI were more convinced, compared with the other groups, that the PT perceive themselves more as a teacher than a therapist (statement 9). Both the PT and OT students at HiB somewhat disagreed that a PT has to adjust facilities (statement 10).*

Table 81: Rank scaling of students' understanding of the PT's cultural capital<sup>159</sup>

Questions	1.	2.	8.	9.	10.
Student groups	REL	COG	PRE	TEA	ADJ
	Relation	Cognitive	Preventive	Teacher	Adjust
PT at KI	++	+++	+++	-	+
PT at HiB	++	++	+++	---	-
OT at KI	+	+	++	--	+
OT at HiB	-	-	++	---	---

*The results from the empirical study showed that the PT and OT student group at KI perceived a PT to have some skills similar to that, which often characterise an OT. The OT students at HiB were the least convinced group that a PT to some extent has some of an OT's skills. The differences between the responses by the students from the educational institutions in Bergen and Stockholm seemed to be smaller than the difference between the OT students and PT students. In other words, both professional cultural capital and the mode of interprofessional socialisation seemed to affect students' interprofessional cultural capital.*

### 5.13.3 OT's and PT's cultural capital and biosocial variables

A one-way variance analysis did not show statistical significant differences between the responses by the four student groups on the following statements:

- As an OT it is important to inform the patient and his/her family of what he/she can or cannot do
- As an OT it is less important to adapt the environments to the patient
- As an OT it is important to know that people develop through activities that seem to be meaningful
- The PT must know which cognitive limitations result from a disability
- The PT must know which movement limitations result from a disability
- The PT must perform a gait/walking analyse

The one-way variance analysis did not show any statistical significant difference between the students' responses about an OT's and a PT's cultural capital and duration of their occupational experiences in health care during study and summer job.

The results of the analysis indicated statistical significant differences between the responses by the student groups about OT's and PT's cultural capital connected to age, the section at upper secondary school, occupational experience before and parallel with the study and summer job.

<sup>159</sup> Ranking scale: +++ = 1-1.3, ++ = 1.4-1.6, + = 1.7-1.9, - = 2.0-2.2, -- = 2.3-2.5, --- = 2.6-2.8.

To illustrate the results from the one-way variance analysis showing statistical significant differences between the responses by the students about OT's and PT's cultural capital, about some biosocial variables, I have chosen to describe the results in figures 22-28.

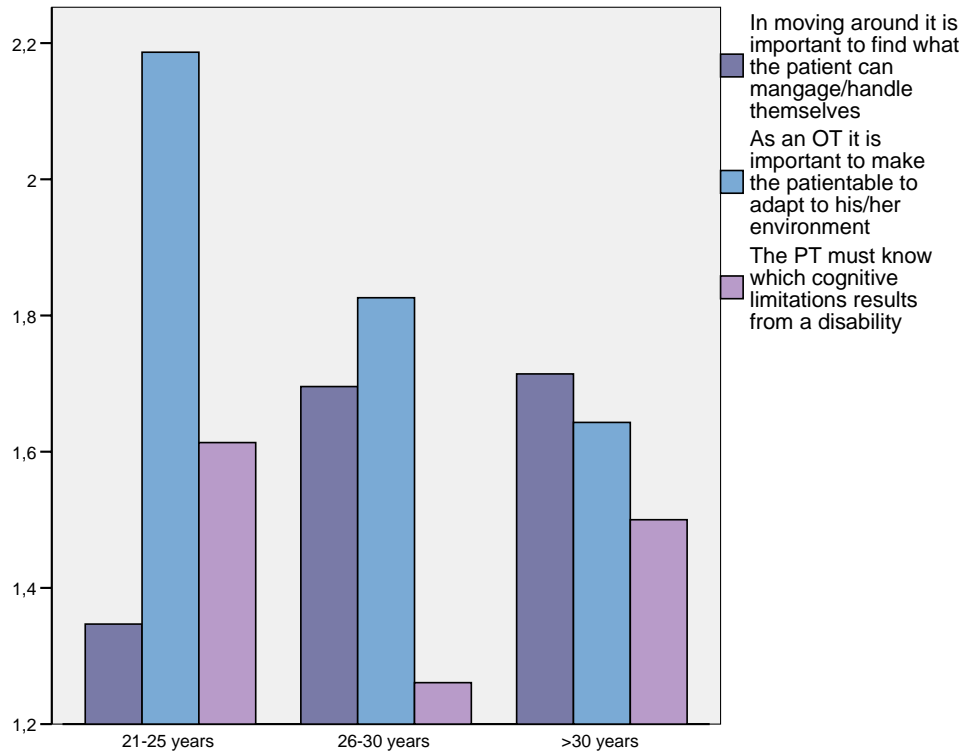


Figure 22: Students' perceptions of an OT and a PT's cultural capital according to age<sup>160</sup>

Figure 22 shows that younger students were more convinced than the older ones that it is important to make the patient self-reliant, while older students agreed more than the younger ones about the importance to make the patient able to adapt to their environment. The student group aged between 26 to 30 years agreed more that a PT has knowledge about the cognitive limitation results from a disability, compared with the other groups.

<sup>160</sup> 1 = strongly agree, 2 = mildly agree, 3 = mildly disagree, 4 = strongly disagree.

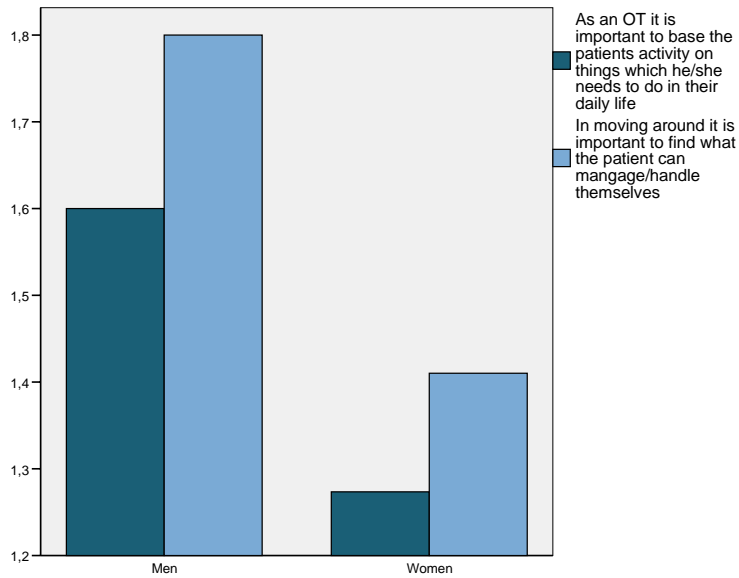


Figure 23: Students' perceptions of an OT's cultural capital according to gender

Figure 23 shows that women were more convinced than men, about the importance to relate the patient's activities on things they are doing in their daily life, and to find what the patient can manage.

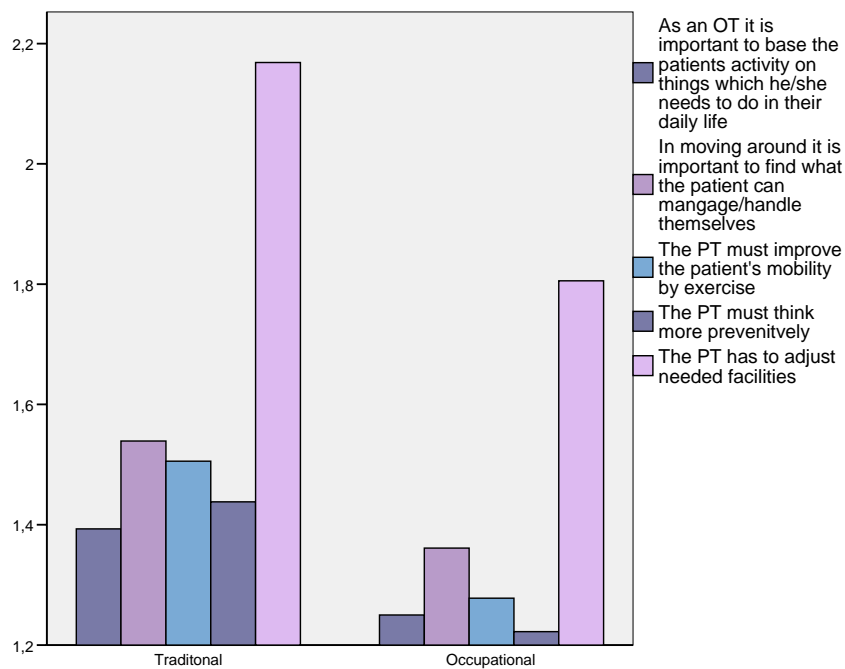


Figure 24: Students' perception of an OT's and a PT's cultural capital according to the section at upper secondary school

Figure 24 shows that students having an occupational section at upper secondary school were more convinced about the importance to find out how things around affect the patient and the importance to find what the patient can manage themselves, compared with students passing a traditional section at upper secondary school. Students with an occupational oriented section at upper secondary school agreed to a larger extent that a PT needs to improve the patient’s mobility by exercise, that a PT thinks more preventively and that a PT adjusts needed facilities than students graduating a traditional section.

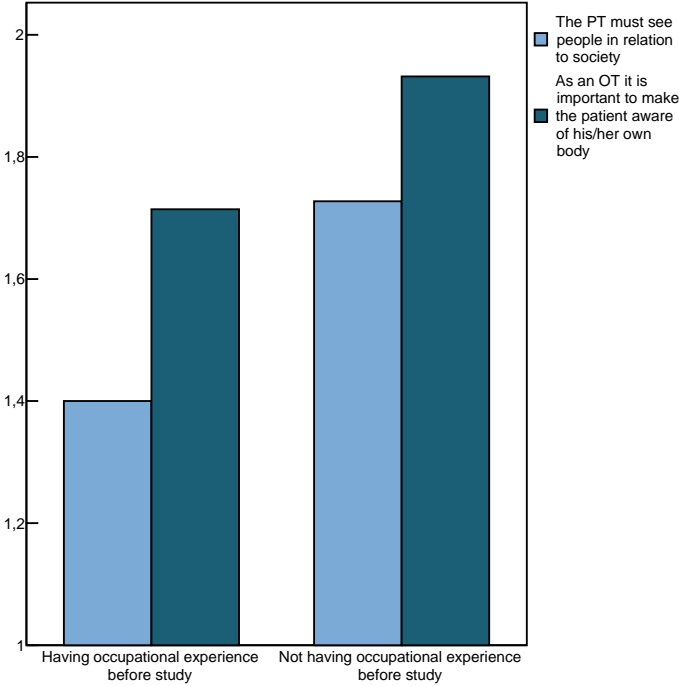


Figure 25: Students’ perception of an OT’s and PT’s cultural capital according to occupational experience before study

Figure 25 shows that students having occupational experience in health care before starting the study, agreed more than those not having such experience beforehand, the importance to make the patient aware of their own body and that a PT sees people in relation to society.

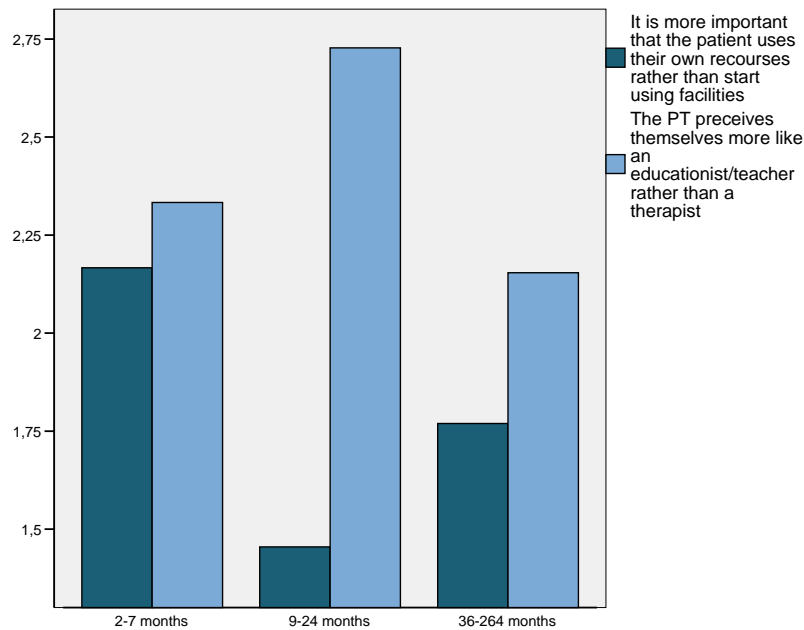


Figure 26: Students' perception of an OT's and a PT's cultural capital according to duration of occupational experience before study

Figure 26 shows that students having a middle long (9 to 24 months) duration of occupational experience in health care before they started their health care studies were more convinced about the importance that the patients help themselves rather than using facilities, compared with students with a shorter and a longer duration of such a practise. Students with a rather short (2-7 months) duration of occupational experience in health service before the study were the least convinced student group that it is import that the patient helps themselves rather than using facilities.

Students having the longest (36-264 months) duration of occupational experience before starting their studies agreed, to a greater extent, that the PT perceives themselves as an educationist, compared with students having a shorter occupational experience. Students with a middle long (9 to 24 months) duration of occupational experience in health care before they started the study were less convinced that a PT perceives themselves more like an educationist than students having longer or shorter duration of such experience.

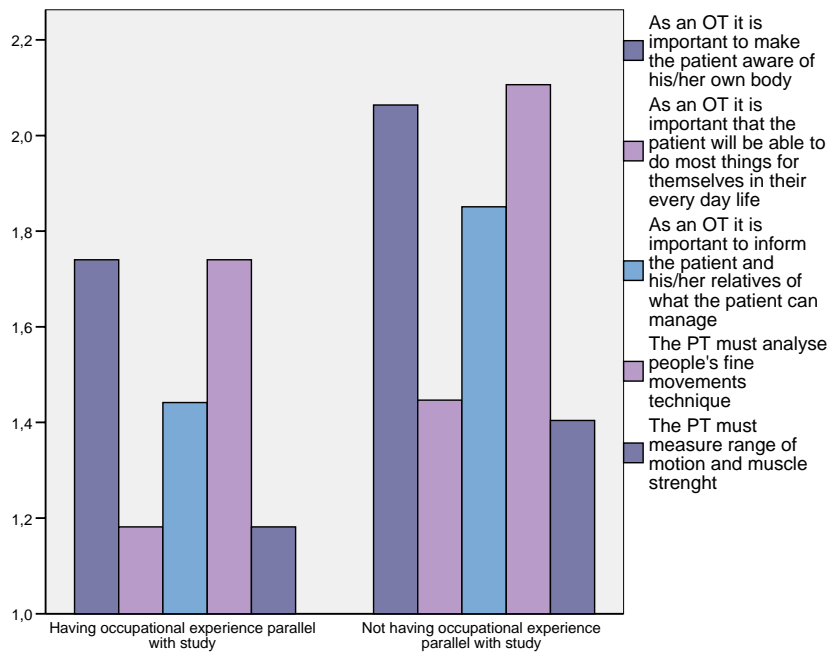


Figure 27: Students' perception of an OT's and a PT's cultural capital connected with having occupational experience in parallel with study

Figure 27 shows that students with experience in health care in parallel with the study agreed more, compared with students lacking this kind of experience that it is important to make the patient aware of their own body, that it is important that the patients will be able to do most things for themselves in their daily life, and that it is important to inform the patient and their relatives what they can do or not. These students were the most convinced group that a PT analyses the patient's fine movement technique and a PT measures range of motion and muscle strength.



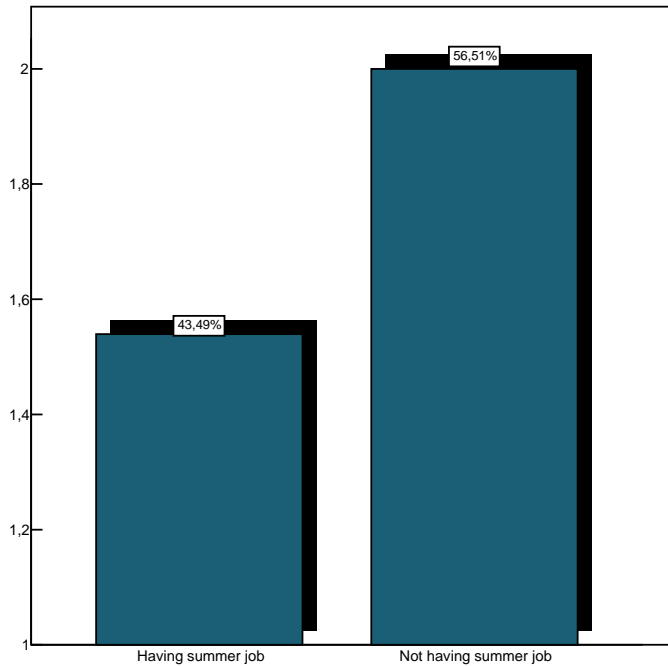


Figure 28: Students' perceptions of the statement "The PT must see people in relation to society" connected with summer job

Figure 28 shows that students with summer job in health care agreed to a larger extent that a PT sees people in relation to society, compared with students such experience.

### **Summary**

*The results revealed that students who were younger, female students, were in an occupational section at upper secondary school, have longer duration of experience before starting their professional studies and with job experience in health care concurrent with their studies agreed more that an OT has to make the patient be self-reliant, compared with students who were older, male students, students having studied in a general education section, had shorter experience before entering the study and did not have job experience in health care in parallel with study.*

*Older students and those who had studied in an occupational section at upper secondary school, were more convinced that the OT has to take into account the environments' influence on the patient than younger students and those who had been in a more traditional or academic section. Female students agreed that an OT has to make the patients' activities meaningful, compared with male students.*

*Students with occupational experience in health service before their studies were more convinced that the PT has a holistic view than those lacking occupational experience in health care before. Students with a longer duration of job experience before entering the study agreed that the PT has a role more like a teacher than a therapist, compared with students with shorter duration of job experience before entering the study.*

*Students, having studied in an occupational section in an upper secondary school and with occupation experience concurrent with study seemed to have a wider understanding of a PT's cultural capital than those passing a more traditional section.*

*The results of the empirical analysis showed that biosocial variables had an impact on students' perceptions of the cultural capital of their own and of the other profession. In other words, a former habitus affects students' interprofessional cultural capital.*

#### **5.14 Correspondence analysis of perceptions from OT and PT students at Bergen University College and the Karolinska Institutet concerning their own and of the other profession's cultural capital**

The objects of this analysis are: to summarise the results from the previous analyses of this theme; and to seek eventually new correspondences between perceptions and students that have not been found by the previous analyses. This analysis distinguishes between differences and similarities between biosocial variables and perceptions that go into the analysis. The correspondence analysis about the OT and PT students at HiB and KI and their perceptions of their own and of the other professions' cultural capital seeks correspondences between groups of perceptions of students' own and of the others' cultural capital, as active principle variables that construct the analyses. Students are linked to these perceptions and their specific characteristics are added as illustrative or supplementary variables.

### **Variables in the correspondence analysis<sup>161</sup>**

The active principle variables are the following<sup>162</sup>:

- OT at HiB (PRC 1) (2 variables)
- PT at HiB (PRC 2) (2 variables)
- OT at KI (PRC 3) (2 variables)
- PR at KI (PRC 4) (2 variables)
- As an OT it is important to make the patient aware of his/her own body (AWA) (3 variables)
- It is important that the patients help themselves rather than using facility/remedies (FAC) (3 variables)
- As an OT it is important to make the patient able adapt to his/her environment (i.e. home, work, surrounding areas) (FIT) (3 variables)
- As an OT it is less important to adapt the environments (i.e. home, work, surrounding areas) to the patient (ADA) (3 variables)
- The PT must see people in relation to society (REL) (3 variables)
- The PT must analyse patients' fine movements technique (FIN) (3 variables)
- The PT must adjust needed facilities (ADJ) (3 variables)

The supplementary variables are the following (biosocial variables):

- Gender (SEX) (2 variables)
- Age (AGE) (3 variables)
- Upper secondary school (STU) (2 variables)
- Having occupational experience before study (EXB) (2 variables)
- Duration of occupational experience before study (DUR) (3 variables)
- Having occupational experience in parallel with study (EXP) (2 variables)
- Summer job (SUM) (2 variables)

In addition are variables containing responses with replies below 5 % included as supplementary variables:

- As an OT it is important that the patients will be able to do most things for themselves in their daily life (THE) (3 variables)
- As an OT it is important to inform the patient and his/her family of what he/she can or cannot do (INF) (3 variables)
- In moving around it is important to find what the patient can manage/handle themselves (CAN) (3 variables)
- As an OT it is important to find out how things around him/her (i.e. home, work, surrounding areas) affect the patient (SUR) (3 variables)
- As an OT it is important to know that people develop through activities that seem to be meaningful (EVO) (3 variables)
- As an OT it is important to base the patient's activities on things which he/she needs to do in their daily life (DAY) (3 variables)
- The PT must know which cognitive limitations result from a disability (3 variables)
- The PT must know which movement limitations result from a disability (3 variables)

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<sup>161</sup> The students' perceptions were grouped in three response alternatives in order to have large enough and comparable size in the reply groups (see appendix 8). Thus the analysis is made on the basis of 29 constructed variables from 7 questions.

<sup>162</sup> To include the variable, each of the response replies in the variable is containing > 6 that means >10 %.

- The PT must measure range of motion and muscle strength (3 variables)
- The PT must perform a gait/walking analyse (3 variables)
- The PT must improve the patient's mobility by exercise (3 variables)
- The PT must think more preventively (3 variables)
- The PT perceives themselves more as educationist/teacher rather than a therapist (3 variables)

The selection of supplementary variables has been made after the analysis of the principle variables has been carried out.

### **Three factor axis**

**The first factor axis** (12.94 % of eigenvalue = 0.30)<sup>163</sup> distinguished between a rather health promotion or preventive, holistic ideology/thinking and a rather treatment oriented ideology or thinking.

The negative side of the first axis regrouped perceptions that concern the students' perceptions of a PT, and compromised perceptions that strongly agreed that: "the PT must see the patient in relation to the society" [9]<sup>164</sup>. It composed of perceptions that disagreed that "the PT must adjust needed facilities" [8]. The negative side of the first axis covered students' view concerning an OT with perceptions that strongly agreed: that "as an OT it is important to make the patient aware of his/her own body" [9] and that "as an OT it is important to make the patient adapt to his/her environment" [4].

The positive side of the first axis showed OT students at HiB [17] and PT and OT students' perceptions of a PT's cultural capital and compromised perceptions that strongly agreed that "the PT has to adjust needed facilities" [13]. It comprised perceptions that disagreed: that "the PT needs to see human being in relation to society" [12] and that "the PT needs to analyse fine movements technique with patient" [5]. The positive side of the second axis also covered students' perceptions concerning an OT's role that disagreed that "as an OT it is important to make the patient adapt to his/her environment" [9]; and mildly agreed that "as an OT it is important to make the patient aware of his/her their own body" [5].

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<sup>163</sup> See appendix 8, showing a histogram of the eigenvalues in the matrix.

<sup>164</sup> The number in the brackets [ ] indicate the points' contributions to the particular factor axis. The most important contributions are those being above the average of all the contributions to the particular axis. In this analysis only contribution above the average 5 (100:22) are included. In the following this contributions are named 'a sufficient contribution'.

**The second axis** (10.99 % of eigenvalue = 0.25) distinguished between OT students at KI and PT students at KI and distinguished between the perceptions of whether or not the patient should be self-reliant.

On the negative side of the axis occurred PT students at KI [10] and the students' perceptions of a PT's cultural capital and comprised perceptions that mildly agreed: that "the PT needs to see human being in relation to society" [7], and that "the PT has to adjust needed facilities [6]". Also students' perceptions of the OT's cultural capital were found that disagreed that: "as an OT it is important to make the patient aware of his/her own body" [9], that "it is important that the patients help themselves rather than using facility/remedies" [5] and that "as an OT it is less important to adapt the environments to the patient" [5].

The positive side of the second axis showed OT students at KI [17] and gathered students' perceptions of the OT's role and composed of perceptions that strongly agreed: that "it is important that the patients help themselves rather than using facility/remedies" [8] and that "as an OT it is important to make the patient aware of his/her own body" [8].

**The third axis** (9.64 % of eigenvalue = 0.22) distinguished between PT students at HiB and PT and OT students at KI and separated perceptions that the society are responsible for the patient and perceptions that both the patient and the society are responsible for the patient's wellbeing.

On the negative side of the third axis occurred OT students at KI [8] and PT students at KI [7] and the students' perceptions of an OT' cultural capital and it comprised perceptions that mildly agreed that "as an OT it is important to make the patient adapt to the environment" [9] and disagreed that "as an OT it is less important to adapt the environments to the patient" [14].

On the positive side of the third axis were situated PT students at HiB [22] and gathered students' perceptions concerning a PT's role that strongly agreed that "the PT must see human being in relation to society" [7]. The positive side of the third axis also covered students' perceptions of the OT's role and composed of perceptions that disagreed: that "as an OT it is important to make the patient adapt to the environment" [11] and that "as an OT it is

important the patients help themselves rather than using facility/remedies” [6] (see appendix 8).

### **5.15 Hierarchical classification**

A hierarchical classification is made to identify the clouds or groups of perceptions in the space of 17 perceptions that the analysis found most homogeneous and that constituted the basis for regrouping the perceptions that were closest to each other and those that were situated farthest from each other.

The 17 perceptions of the seven statements about an OT’s and a PT’s cultural capital were first distinguished into two great groups. One of the group included PT students at HiB and KI and the perceptions expressing strongly agreements towards the statements, arguing that an OT should encourage the patient to manage (empower) their own situation and that a PT has a holistic view. The other group composed of OT students at HiB and KI and the perceptions expressing some disagreement that an OT should encourage the patient to manage their daily life and some disagreement that a PT has a holistic view.

The first main group involved PT students at KI and HiB and gathered perceptions that saw the patient integrated in the society and community, i.e. agreed that an OT should encourage the patient to manage their daily life and mildly agreed that the PT has a holistic view. The perceptions were divided into the following three groups:

Group 1 included PT students at KI and perceptions that mildly agreed that an OT has to be aware that the patient in some degree is responsible for the improvement of their situation and that a PT has a more holistic view. The group gathered 3 modalities (PRC4, FIT2, REL2).

Group 2 comprised perceptions that strongly or mildly agreed that an OT should encourage the patient to manage their daily life. The group gathered 2 modalities (FAC1, AWA2).

Group 3 involved PT students at HiB and perceptions that expressed strongly or mildly agreement that a PT has a more holistic view and has some of an OT’s skills. The group gathered 3 modalities (REL1, PRC2, ADJ2).

The second main group included OT students at HiB and KI and perceptions about treatments of the patient, expressing that an OT has to be aware that both the patient and the society are responsible for the improvement of patient's situation and that a PT has less holistic view and less analytic skills, or a more narrow view of a PT's cultural capital. The perceptions were separated into the following three groups:

Group 4 included OT students at HiB and perceptions that expressed a strongly agreement that a PT has some of an OT's duties and disagreed that an OT should improve the patient's ability to be self-reliant. The group gathered 3 modalities (ADJ1, PRC1, FIT3).

Group 5 comprised perceptions that disagreed that an OT should give the patient some responsibility to manage their daily life and disagreed that a PT has analytic skills and holistic view. The group gathered 5 modalities (REL3, ADA3, FIN3, AWA3).

Group 6 involved OT students at KI and perceptions that expressed strongly agreement that an OT should improve the patient's ability to be self-reliant. The group gathered 3 modalities (AWA1, PRC3, FIT1).

### ***5.16 The three first factor plans***

The most important differences and similarities between the students' perceptions about their own and of the other's cultural capital can constitute a summing up of earlier findings, and may show new differences and similarities within and between the student groups.

#### **5.16.1 First factor plan**

The first factor plan was created from the first and the second factor axis and identified four dot clouds or groups.

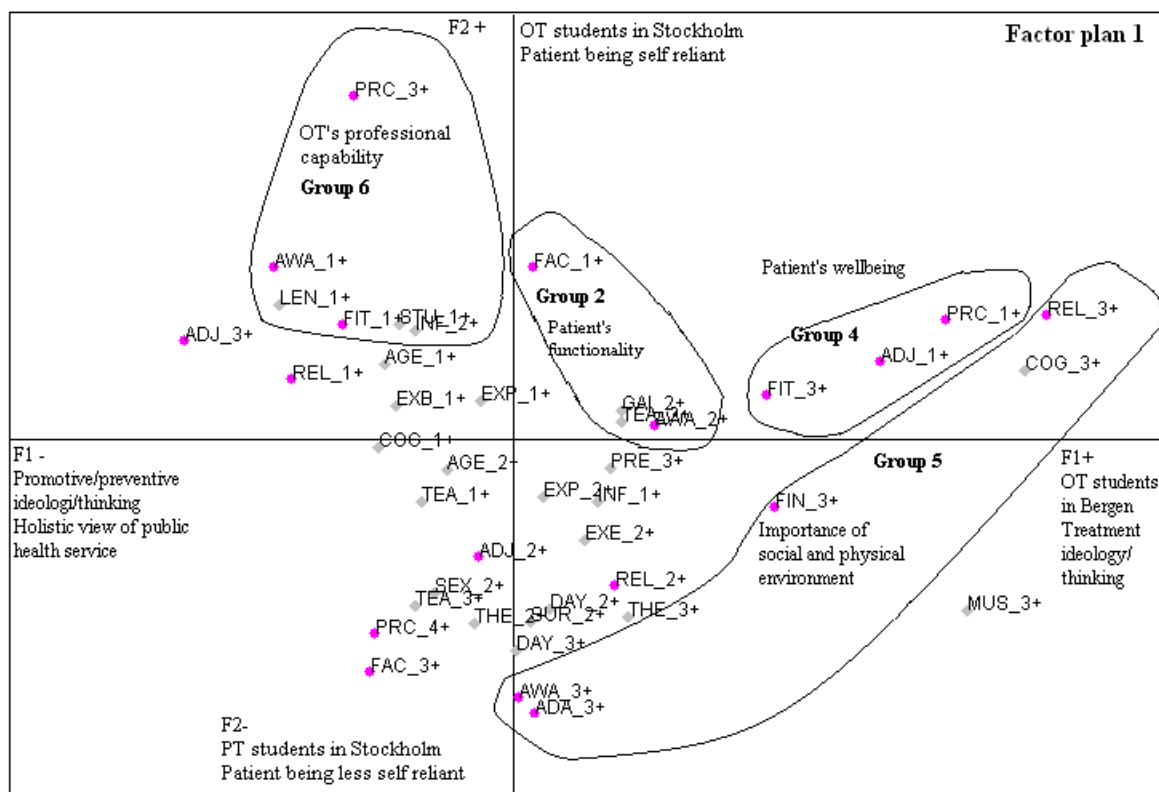


Figure 29: First factor plan

North-west in the first factor plan (figure 29) was situated at a zone of negative values on the first axis and positive values on the second factor axis. The group was near the positive pole of the second axis that involved OT students at KI and perceptions that the patient should be self-reliant. In this group appeared OT students at KI and students with perceptions concerning the OT's professional capability (**group 6**). The modalities from group 6 giving enough contributions<sup>165</sup> to at least one of the axes in the first factor plan included perceptions from students that:

- strongly agreed that as an OT it is important to make the patient aware of his/her body (AWA1)
- strongly agreed that as an OT is it important to make the patient adapt to his/her environment (FIT1)

Significantly associated with this group were students with a traditional or academic section in an upper secondary school (STU1) and with a short (2 - 7 months) occupational experience before starting their studies (LEN1). Also students who expressed perceptions that mildly

<sup>165</sup> Only modalities that contributed to at least one of the factor axis, being greater than the average for all the contributions, are presented here. In the description of each of the group below, the contribution is named 'a sufficient contribution'.



agreed that “as an OT it is important to inform the patient and the family what he/she can or cannot do” (INF2) were associated with this group.

North-east in the first factor plan (figure 29) was situated at a zone of positive values on both the first and the second axis. This group comprised perceptions concerning knowledge about the patient’s functionality (**group 2**). The modalities from group 2 giving enough contributions to at least one of the axes of the first factor plan included perceptions from students that:

- strongly agreed that it is important that the patients help themselves rather than using facility/remedies (FAC1)
- mildly agreed that as an OT it is important to make the patient aware of his/her body (AWA2)

Significantly associated with this group were students with perceptions that mildly agreed: that “the PT must perform a gait analysis” (GAI2), and that “the PT perceives themselves more as an educationist/teacher rather than a therapist” (TEA2).

North-east-east in the first factor plan was situated at a zone of positive values on both the first and the second axis. The group appeared near the positive pole of the first axis that involved OT students at HiB and treatment ideology. This group comprised OT students at HiB and students' perceptions that society is responsible for the patients’ wellbeing (**group 4**). The modalities from group 4 giving enough contributions to at least one of the axes the first factor plan included perceptions from students that:

- strongly agreed that PT must adjust facilities (ADJ1)
- disagreed that as an OT is it important to make the patient adapt to his/her environment (FIT3)

None of the supplementary variables were associated significantly with this group.

South-east in the first factor plan was situated at a zone of positive values on the first axis and of positive and negative values on the second axis. This is a group comprising students’ perceptions about the importance of social and physical environment (**group 5**). The modalities from group 5 giving enough contributions to at least one of the axes the first factor plan included perceptions from students that:

- disagreed that the PT must see people in relation to society (REL3)
- disagreed that the PT must analyse fine movements technique with the patients (FIN3)

- disagreed that as an OT it is important to make the patient aware of his/her body (AWA3)
- disagreed that as an OT it is less important to adapt the environment to the patient (ADA3)

Significantly associated with this group were students expressing perceptions that disagreed that: “as an OT it is important that the patients will be able to do most things for themselves in their daily life (THE3); and that “the PT must know which cognitive limitations results from a disability” (COG3).

***Summary***

*The first factor plan of this correspondence analysis distinguished between four groups of perceptions: students expressing perceptions about the patient’s functionality (group 2); OT students at HiB and students’ perceptions that the society are responsible for the patient’s wellbeing (group 4); perceptions of the importance of social and physical environment (group 5); and OT students at KI and students expressing perceptions of an OT’s professional capability (group 6).*

### 5.16.2 Second factor plan

Second factor plan was created from the first and the third factor axis and identified three dot clouds or groups.

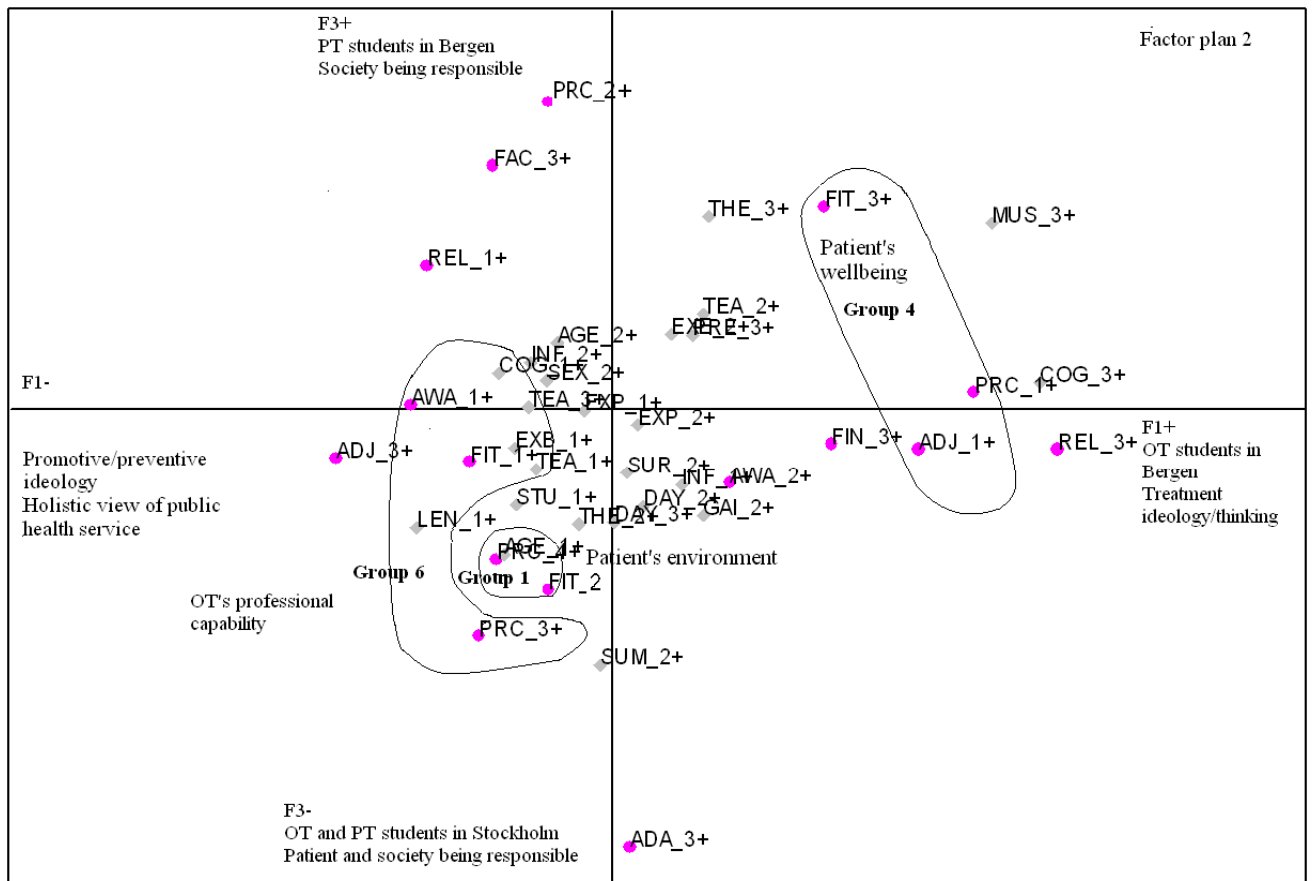


Figure 30: Second factor plan

West on the second plan (figure 30) appeared again **group 6** situated at a zone of negative on the first factor axis, and negative and positive values on the third axis. This group comprised OT students at KI and students' perception about the OT's professional capability. The modalities from group 6 giving enough contributions at least one of the axes in the second factor plan included perceptions from students that:

- strongly agreed that as an OT it is important to make the patient aware of his/her body (AWA1)
- strongly agreed that as an OT it is important to make the patient adapt to his/her environment (FIT1)

Significantly associated with this group were students having occupational experience before they started their studies (EXB1) and short (2-7 months) occupational experience before starting the study (LEN1) (as in the first factor plan). Also students who strongly agreed (TEA1) and disagreed (TEA3) that “the PT perceive themselves more like an educationist/ teacher rather than a therapist”, and strongly agreed that “the PT must know which cognitive limitations results from a disability” (COG1) were associated with this group.

South-west in the second plan was situated at a zone of negative values both on the first and the third factor axis. In this group appeared PT students at KI and students’ perceptions concerning the patient’s environment (**group 1**). The modality from group 1 giving enough contributions at least one of the axes in the second factor plan included perceptions from students that: mildly agreed that as an OT it is important to make the patient adapt to his/her environment (FIT2)

Significantly associated with this group were students being between 21 and 25 years (AGE1).

**Group 4** appeared in the east of the second plan, and was situated at a zone of positive values on the first axis and negative and positive values on the third factor axis. This group was near the positive pole of the first axis that involved treatment ideology/ thinking and comprised OT students at HiB and students’ perceptions about the patient’s wellbeing. The modalities from group 4, giving enough contributions at least one of the axes in the second plan included perceptions from students that:

- strongly agreed that PT must adjust facilities (ADJ1)
- disagreed that as an OT it is important to make the patient adapt to his/her environment (FIT3)

None of the supplementary variables were associated significantly with this group.

### **Summary**

*The second factor plan of this correspondence analysis distinguished between three groups: PT students at KI and perceptions about the patient’s environment (group 1); OT students at HiB and students’ perceptions expressing that the society is responsible for the patient wellbeing (group 4); and OT students at KI and students expressing perceptions of the OT’s professional capability (group 6).*

### 5.16.3 Third factor plans

The third factor plan was created from the second and the third axis and identified three dot clouds or groups.

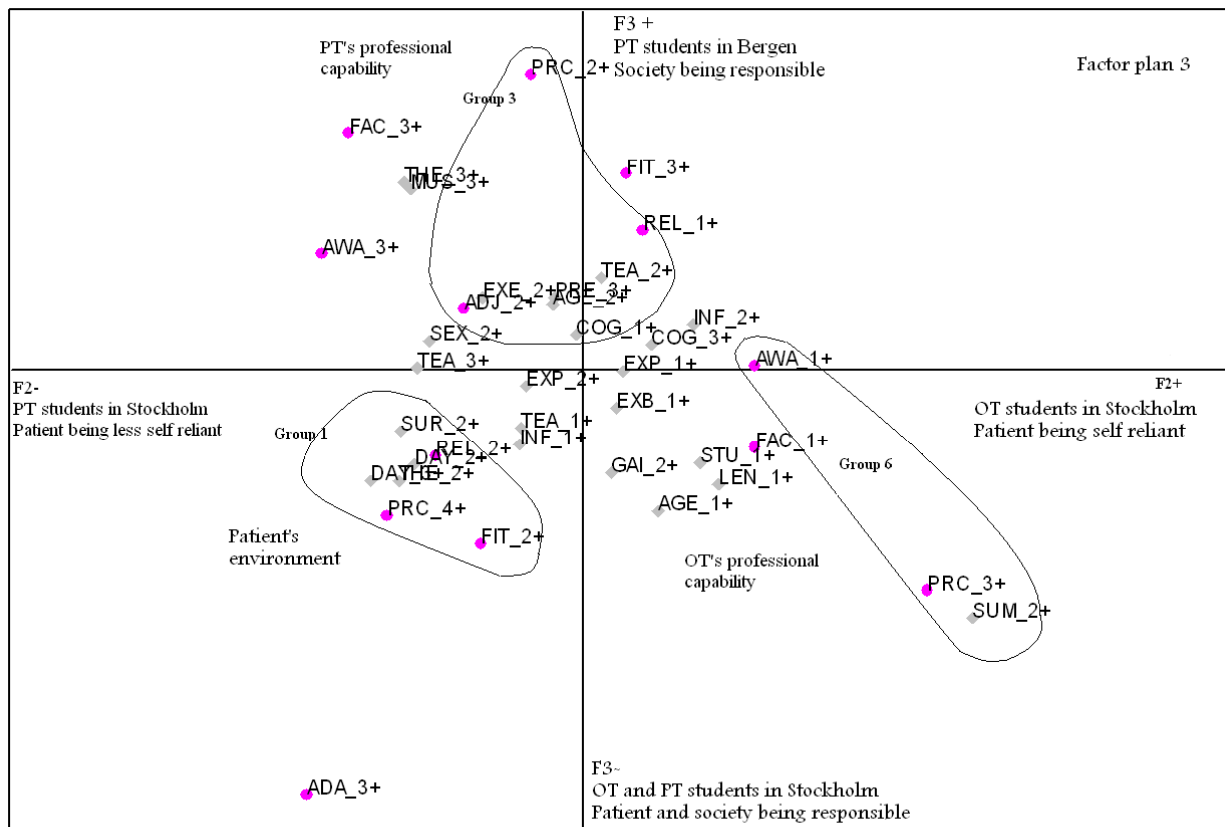


Figure 31: Third factor plan

In the north of the third plan, was situated at a zone of negative and positive values on the second and positive axis on the third axis (figure 31). The group appeared near the pole of the positive pole of the third factor axis that involved PT students at HiB and perceptions that the society is responsible for the patient. This group comprised PT students at HiB and students' perception concerning the PT's professional capabilities (**group 3**). The modalities from group 3 giving enough contribution at least one of the axes in the third factor plan/level included perceptions from students that:

- strongly agreed that the PT must see people in relation to society (REL1)
- mildly agreed that PT must adjust facilities (ADJ2)

Significantly associated with this group were students being between 26 and 30 years (AGE2) and students expressing perceptions that mildly agreed: that “as an OT it is important that the

patients will be able to do most things for themselves in their daily life” (THE2) and that “the PT must improve the patient’s mobility by exercise” (EXE2). Associated with this group were women (SEX2) and perceptions that disagreed: that “the PT must think more preventively” (PRE3) and that “the PT must measure range of motion and muscle strength” (MUS3).

East in the third factor plan (figure 31) appeared **group 6** and was situated at a zone of positive values on the second axis and negative and positive values on the third axis. In this group appeared OT at KI students and students’ perception of the OT’s professional capability. The modalities from group 6, giving enough contributions at least one of the axes in the third factor plan included perceptions from students that strongly agreed that “as an OT it is important to make the patient aware of his/her body” (AWA1)

Significantly associated with this group were students that did not have summer job during the study (SUM2).

As in the second factor plan, **group 1** appeared in the south-west in the third factor plan and was situated a zone of negative values both on the second and the third axis. This group comprised PT students at KI and students’ perceptions concerning the patient’s environment. The modality from group 1, giving enough contributions at least one of the axes in the third factor plan included perceptions from students that:

- mildly agreed that as an OT it is important to make the patient adapt to his/her environment (FIT2)
- mildly agreed that the PT must see people in relation to society (REL2)

Significantly associated with this group were students expressing perceptions that mildly agreed (DAY2) and disagreed (DAY3) that “as an OT it is important to base the patient’s activities on things which they need to do in their daily life”. Associated with this group were perceptions that mildly agreed: that “as an OT it is important that the patients will be able to do most things for themselves in their daily life” (THE2); and that “as an OT it is important to find out how things around him/her affect the patient” (SUR2).

### **Summary**

*The third factor plan of this correspondence analysis distinguished between three groups: the PT at KI students and students’ perceptions about the patient’s environment (group 1); PT students at HiB and students expressing perceptions of the PT’s professional capability (group 3); and the OT at KI students and the OT’s professional capability (group 6).*

### **5.17 Summary of differences and similarities of students' perceptions of own and others cultural capital**

The correspondence analysis showed that it is possible to identify student's expression of perceptions with characteristics connected to six groups that clearly could be distinguished from each other. The main differences were found between two groups: students who emphasised treatments ideology/thinking and students who emphasised promoting/preventing ideology and a holistic view of health care.

A former group appeared in the second and the third factor plans and was described best by the third factor axis and comprised *young PT students at KI who emphasised the society's role as a sort of protective. However, the students in this group somewhat perceived that the patient has some responsibility for their own wellbeing. This group seemed to have an extended or idealised view of an OT's and a PT's cultural capital.*

The group consisted of PT students at KI, with a holistic view of the patient and students who emphasised on the patient's environment, on preventive work, the need for the patient to be self-reliant, and that both the society and the patient are responsible for the patient's wellbeing. The students in the group emphasised that a PT, in some degree, has a holistic view on the patient.

With these perceptions were associated:

students being between 21 and 25 years with perceptions that an OT is aware of how the society influences the patient.

In the first factor plan a second group showed up and was best described by the first and second factor axis and comprised *students perceiving that, with some kind of treatment, the patient should manage their daily life.* The group comprised students who emphasised the patient's functionality, the patient to be self-reliant and on treatment ideology. Students in this group perceived that an OT should make the patient help themselves.

With these perceptions were associated:

students who perceived that a PT has some analytical skills, and that a PT, to some extent, behave more like a teacher than a therapist.

A third group appeared in the third factor plan and was best described by the third factor axis and comprised *middle young PT students at HiB, emphasising, in some degree, the skills as*

*an important part of a PT's cultural capital and that for an OT, the most important duty is to organise the environment to make the patient managing their daily life.* The group consisted of PT students at HiB with perceptions who emphasised a PT's professional cultural capital, and perceived that the society is responsible for the patient. With this group was associated students expressing that a PT, to some extent, has somewhat of an OT's duty, like adjusting facilities.

With these perceptions were associated:

female students being between 26 and 30 years with perceptions that an OT should, to a less degree, help the patient to help themselves and that a PT does not have a preventive role in the society.

In the first and second factor plans a fourth group appears, that was best described by the first factor axis and composed of *OT students at HiB perceiving a PT to have limited cultural capital and that for an OT it is important to organise the environment in the best way for the patient.* The group consisted of OT students at HiB who emphasised patient's wellbeing, and that the society is responsible for the patient's wellbeing. The focus in this group was on treatment ideology. This group expressed that the PT has some of an OT's duty and that an OT should in a less degree help the patient to adapt to the society.

A fifth group appeared in the first factor plan and was described best of the first factor axis and comprised *students having more focus on the importance of the environment than on the patient themselves.* The students in this group emphasised the importance of the social and the physical environment, with focus on treatment ideology and did not emphasise the need for the patient to be self-reliant. The group comprised students with perceptions that an OT has a less preventive role, that an OT should not adapt the patient to the society, that a PT has a narrow view of the patient and that a PT has less analytic skills.

With these perceptions were associated:

students who perceived an OT to have a less informative role, and that a PT has less knowledge about cognitive subjects connected to the patient.

A the sixth group appeared in both the first, second and the third factor plans and was best described by the first factor axis and comprised *OT students at KI with a broader, or more idealistic view of their own professions' cultural capital and this tended also to concern their view of a PT's cultural capital.* The group consisted of students who emphasised an OT's



cultural capital and perceptions expressing a holistic view of health care, with focus on preventive work, and perceptions emphasising that both the society and the patient are responsible for the patient's wellbeing and the need for the patient to be self-reliant. In this group were students with perceptions that an OT has a preventive role and that an OT should adapt the patient to the society.

With these perceptions were associated:

students with a traditional section at an upper secondary school, having short occupational experience in health care, and students who perceived that a PT has knowledge about the cognitive subjects connected to the patient, and that, to some extent, an OT has an informative role in the health care.

The PT and OT students at HiB emphasised the society to be responsible for the patient's wellbeing. The PT and OT students at KI had a more holistic view of health service, compared with the student groups at HiB. In addition, the results give an indication that the OT and PT students at KI had a more preventive ideology, while the OT and PT students at HiB emphasised the importance of the treatment and caring aspect of health care.

Perceptions connected to the PT students at KI expressed to some extent that an OT has to be aware of how the environment affects the patient, while perceptions linked to the PT students at HiB agreed to a less degree that an OT should encourage the patient to do most things themselves. The PT students at HiB did not agree that a PT has analytic skills and a preventive role in health care. On the other hand, the OT students at KI were convinced that an OT should encourage the patient to manage their daily life. The OT students at HiB expressed that a PT in less degree has skills that generally characterise a PT.

*The correspondence analysis confirmed the results found from earlier analyses. In addition, a picture of what characterises students connected to the different clustering of perceptions of an OT's and a PT's cultural capital was revealed. The OT, with less experience in health care and younger PT students at KI, comprehended that both society and the patient are responsible for the patient's wellbeing. The OT and PT students at KI perceived an OT and a PT to have an extensive knowledge of health care, while the PT at HiB, being 'middle-aged', had a more narrow view and may be also more realistic, especially about an OT's cultural capital, but to some extent also of a PT's cultural capital. The OT students at HiB, on the other hand, perceived an OT and a PT to have the patient at the centre and that the cultural*

*capital of an OT and a PT are more confined. The analysis showed that the mode of interprofessional education and a former habitus affect the students' interprofessional cultural capital. The findings will be discussed according to earlier research and the theoretical founded assumptions in the next chapter.*

## 6. Discussion

Bourdieu's theory about the educational system prompts questions about the pedagogic action, pedagogic authority, the pedagogic work and the educational system associated with the introduction of a common core in a modified curriculum in the subfield of practice of interprofessional education. The theoretical discussion explores the following assumptions that:

- 1) professional cultural capital in the educational institutions is important as guidance for development of the students' interprofessional cultural capital and habitus
- 2) interaction facilitates the improvement of students' professional habitus as health workers
- 3) mode and duration of interprofessional education affect students' interprofessional cultural capital and habitus

Results of the empirical studies as well as from the studies of previous research on the field are discussed in this chapter according to the questions raised during the theoretical analyses and with reference to each of these assumptions. Assumption four, about whether or not a student's former habitus influences the student's interprofessional cultural capital and habitus, is discussed as specific dimensions within the other assumptions.

### ***6.1 Professional cultural capital in the educational institutions is important as guidance for development of the students' interprofessional cultural capital and habitus***

To explore this proposition, first, the professional cultural capital's importance is discussed as a guide to students' interprofessional cultural capital and habitus, and second whether or not it are possible to argue that different cultural capital characterise educational institutions of one specific profession.

#### **6.1.1 Professional cultural capital is important as a guide to students' interprofessional cultural capital and habitus**

Health care professions represent a variety of cultural capital and practical approaches, some having caring relations with patient as well as with other professions, while other have limited relations with patient and/or with other professions (see table 1). The cultural capital of a profession has to be seen, according to theories and the empirical data in this study, in both a historical as well as a social and cultural perspective.

The cultural capital dominating a profession is not static and its context has to be taken into consideration when revisions are made to its curriculum. As the power relations between the constituent groups (chapter 5.3) influence the revision of the curricula and determine which professional cultural capital is imposed in various health care programmes, a question has been raised about *which interprofessional cultural capital will be expressed by different health professions* on the execution of pedagogic action.

The increased focus on collaboration problems existing in health care, for example, due to poor communication and rivalry among health professions, probably has given the students insight into the need for interprofessionalism. This may be the reason why the health care students in this study in general seemed to have a positive disposition towards interprofessionalism.

The result of the first part of the empirical study about students' perceptions of interprofessionalism at HiO and HiAls showed that the students, being imposed the professional cultural capital, acknowledged that, by having knowledge about other professions' cultural capital they might acquire a holistic view about health care and thus improve their qualification as health workers (chapter 5.2.4). The students seemed to agree, to some extent, that interaction with students from other health care programmes is a precondition for improving their understanding of other health care professions and argued for interprofessional education to occur.

However, even if the students saw the need for having knowledge about other professions, the data revealed that they also agreed that this insight or interprofessional cultural capital will not necessarily be obtained throughout interprofessional education. This perception could be seen as an implicit expression of a lack of willingness by students to participate in interprofessional education and might be explained by a fear that interprofessional education will be at the expense of their profession specific learning. On the other hand, the students expressed interest in having additional knowledge about other health professions.

Further, the empirical study showed that the cultural capital of a profession differed in accordance with the variation of the professions' duties and performance in health care (chapter 5.2.4), or in Bourdiean terminology, in accordance with characteristics of the

dominating professional cultural capital in health care programme, reproduced and transferred from one generation to another. As the students are socialised into the knowledge, skills, values, norms and attitudes, on which the professions rest and the cultural capital of a profession, such differences increased the variation of how the students valued interprofessionalism, and thus, also have an impact on which degree to the students understood their prospective roles as health workers.

In this study the difference between the students' perception of interprofessionalism reflected the variation, concerning the importance of professional cultural capital, being worthy to impose and inculcate as a pedagogic action, within the health professions. The material also showed that the OT students with a habitus characterised by having relation towards both patients and other health professions (table 1), appreciated interprofessionalism more than students from the other health professions. This corresponds with Ness (1999:27-29) who argues that the OT's approaches to health care is an interactive process and solution oriented way of resolving problems and that the OT's way of identifying problems often is based upon interprofessional collaboration. Thus, the cultural capital inculcated during the OT students' socialisation process is marked by a broader and complementary approach to improve the patients' wellbeing.

The nursing profession represents a cultural capital characterised by caring, given that nurses have extensive caring relations with patients, as well as relations with other professions in health care. In accordance with the central role as organisers in health care allotted to the nurse profession, the material in the empirical study showed that the habitus of the nursing students valued the outcome of interprofessional education to a greater extent than the PT, radiography and medical laboratory science students. On the other hand the PT students, having extensive relations with patients, seemed to be positive towards to work with other health professions.

As a PT often works in interprofessional groups in hospitals, their perception revealed an example of how the cultural capital of a profession improves students' habitus as health workers. However, the PT students were least convinced than the other students that interprofessional education gives knowledge about the cultural capital of other health professions. This perception can be interpreted as a meaning that the PT students, even if they saw the benefit of working across boundaries, they were less interested in attending

interprofessional education. Through having an extensive individual work situation in their future professional exercise with less relation to other professions, this seemed to have influenced the PT students' habitus.

The result of the empirical study also revealed (chapter 5.2.5), that men to a higher degree than women disagreed with a similar statement: "that one acquires knowledge about the other professions' roles through interprofessional education". As there were more men among the PT students than in the other groups, the reason for the more negative perception of interprofessional education, could be related to gender habitus and not only to the cultural capital of the profession, i.e. be explained by a supposition that men are carrying different cultural capital than women. However, the gender issue will not be further developed in the study.

Compared with the other student groups (chapter 5.2.4), the analysis showed that the medical laboratory science students, having followed the programme of VEKS I and II and been exposed to less interprofessional education than the OT, PT and radiography students, as background for their pedagogic work, were more negative towards interprofessionalism and especially negative towards working across boundaries, compared with the other groups. The explanation may be the following: medical laboratory scientists' work mainly takes place at medical laboratories in hospitals and some of the health workers<sup>166</sup> in this group do not see a patient during their daily work. Therefore, it may be understandable if the habitus of these students was less relational oriented, compared with the habitus of the other students.

The collaboration between medical laboratory scientist and other professions, mainly doctors and nurses within a hospital, is limited as the students also may have experienced during their placements. These students might also have observed that medical laboratory scientists to a less degree than other professions, through their practice, expressed a cultural capital characterised by interprofessionalism and that this experience might have influenced the students' perceptions of interprofessionalism. Another possible interpretation can be that because of this student group, participating in parts of the interprofessional activities at HiO, limited to VEKS I and II, they could become less aware of interprofessionalism, and therefore became less positive towards interprofessionalism compared with the presence of students in

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<sup>166</sup> Like medical laboratory scientist working at pathologic and microbiologic laboratories.

other groups. This corresponds with Fallsberg and Wijma (1999) and their research, which reported that this group was the least positive towards development of their own role. The authors concluded that students representing caring professions, who will collaborate closely in the future, have the highest expectations of working in group and development of their own professional role and that these expectations were satisfied.

The medical laboratory science students, together with the radiography students, were to a lesser degree than the other students convinced about the importance of interprofessional education to improve their cultural capital as health workers and thereby their interprofessional cultural capital as a part of their professional cultural capital. The reason may be that both student groups have limited relations with other professions. Findings from this empirical study correspond with research by Bjørke and Haavie (2002:109), which showed that the technical oriented students had more reservations towards VEKS than the other groups. In addition, it seems as these two student groups associated with diagnostic work<sup>167</sup> were less interested in having additional information about studies of other health professions, than students in the other groups.

Results from the correspondence analysis about OT and PT students at HiO revealed that the OT students appreciated the advantage of interprofessional education and work, while the PT students had more reservations about the outcome of interprofessional education than the other groups (chapter 5.9.4, 5.9.5 and 5.9.6). On the other hand the PT students seemed to be somewhat curious about learning across boundaries.

However, the cultural capital dominating occupational therapy was marked by having more caring relations compared with the cultural capital of physiotherapy. Even if the OT and PT have some overlapping tasks, for example in relation to the rehabilitation of patients, physiotherapy is a more independent or individual profession (Hofoss 1980:59) often working at clinics alone or with other PTs, than OTs. An OT, on the other hand, mostly operates in interprofessional groups at institutions or in nursing home care.

Differences in the professional cultural capital of an OT and a PT, and how they perceived the cultural capital of their own and of others' professions, were also confirmed by the result from

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<sup>167</sup> Medical laboratory scientist and radiographer with post-qualifying education also work with treatment of the patient, like radient therapy.

the second part of the empirical analysis about OT and PT students at HiB and KI concerning their interprofessional cultural capital (chapter 5.12.3 and 5.12.4). The OT students at both educational institutions understood their future profession to have a preventive role in health care, a role often linked to the cultural capital of physiotherapy. To help the patient to be self-reliant characterises the professional cultural capital of occupational therapy at both educational institutions. For an OT to be aware of how the society affects the patient and to base the activities around the patient, in order to be meaningful, also describe the group habitus of the two OT student groups. The PT students, however, were least convinced that this is about such traits being characteristic of the cultural capital of an OT.

The professional cultural capital being imposed PT students at both HiB and KI indicated that a PT has a preventive role and a role like a teacher. In addition the two PT student groups agreed that the cultural capital of physiotherapy includes some of an OT's skills. The PT students understood their future profession's cultural capital to have a holistic view. However, this perception was more associated with the 'middle age' students than other age groups. As students' habitus is shaped by earlier experiences and former habitus, one might expect that age will indirectly influence the students' later habitus.

Female students were convinced that an OT helps the patient to be self-reliant and that an OT bases the patients' activities on issues being meaningful (chapter 5.13.3). As all the OT students were female, the result might be connected to a possible specific gender habitus rather than to the cultural capital of the profession. This proposition is supported by the fact that men perceived an OT's cultural capital differently from women.

The data from the empirical study showed that differences in professional cultural capital enhance the variation between the students' perception of interprofessionalism and the understanding of the cultural capital of their own and of other professions as *theoria* and knowledge in practice. This corresponds with Pollard et al. (2005:265) who suggest that professional socialisation has a particularly strong influence on students' attitudes to collaborative learning and working. Therefore in this study differences between the students' degree of a habitus as health workers and interprofessional cultural capital give an example of how the student groups' habitus is based on the socialisation process and on the cultural capital of a profession.



When students, having extensive relations with patients and other professions during their study, valued interprofessionalism higher than students being less relational oriented, the cultural capital dominating a profession seems to be important for the inculcation of the students' professional habitus as well as their interprofessional cultural capital. Viewed thus, this situation can be seen as an example of how an influential group decides which cultural capital is worthy to reproduce in different profession-oriented studies.

### **6.1.2 Different cultural capital characterising educational institutions of one specific profession**

Education, as Petersen (1999:52) says, shapes the individuals' disposition and the different educational institutions become tools in the reproductions' strategy. The educational system, within its constraints, gives guidance for designing the syllabus, connected to the approved curricula. So, even if health education programme have identical national curriculum, this does not imply that different educational institutions have a homogenous syllabus. The directors of the study and the teachers are given an important degree of freedom in their pedagogic authority linked to their job when it comes to determine which knowledge, skill and attitude to be included in the syllabus as well as in the hidden curriculum, and thus to determine which professional cultural capital to reproduce.

The results of the empirical study confirmed that the cultural capital of nursing represents a profession characterised by caring and relations. Not unexpectedly the empirical study revealed that all the nursing students at HiO and HiAls valued interprofessionalism as an important part of the study programme (chapter 5.3.2). Further, the data showed that these students in general acknowledged that, by having knowledge about other professions' cultural capital, would help them to acquire a holistic view of health care and thus to improve their professional qualification.

Findings from the study also revealed that the nursing students to a certain degree agreed that interaction with other students is a precondition for improving their understanding of the cultural capital of other health care professions, and therefore constitute a necessity for interprofessional activities. However, even if the nursing students saw the need for having knowledge about other professions, they tended to suggest that this would not necessarily be obtained by participating in interprofessional education. This perception could be interpreted as an implicit expression of a limited willingness to participate in interprofessional activities.

On the other hand, the nursing students wanted to have additional knowledge about other professions.

The results revealed a distinction between the perceptions of interprofessionalism among the nursing students at the four educational institutions in Oslo and Ålesund. The educational institutions seem to be the dominant constitutive groups in the health educational field when setting the agenda about which cultural capital that is to be imposed. Therefore, one can see a wide variation in the syllabi content across institutions leading to the same qualifications.

In general, the habitus of nursing students at Bjerregaardsgt. was more oriented towards interprofessionalism, compared with students from the other educational institutions. This can be explained by the fact that characteristics of their professional cultural capital are marked by having a broader view of other professions' impact on health care than students coming from Ullevål, Aker and Ålesund.

At the time that the nursing students completed their study, the director of the Aker nurse education was the only director of the involved institutions holding a university degree within nurse science at master level (Granum, V. pers. comm.). It might be that focus on *nursing* has influenced the debate between the teachers at the educational institutions. If so, a 'narrow view' of health care could become the dominant cultural capital. This could constitute an example of how discourses about health care could influence the ideology in a nurse educational institution. It might happen that this could be one explanation why the Asker student group together with the nursing students at Ålesund, were less positive towards interprofessionalism than the two other groups.

As the director of the study and the teachers at the nurse education at Ålesund did not welcome interprofessional education, one may question if they also have an ambivalent attitude towards interprofessionalism. This is an example of how central agents at Aker and Ålesund, given the legitimate right or freedom to impose which knowledge, skills and attitudes they deemed to be important, or which professional cultural capital to transfer, influenced the students' perceptions of interprofessional education and thus their habitus.

Another point that might explain the distinction between the students' perception is that the nursing students at Aker and Ålesund had their placements at small hospitals. In opposite,

students at Bjerregaardsgt. and Ullevål practised respectively at the National Hospital and the Ullevål University Hospital, two large hospitals in the capital of Norway with a high degree of specialisations. The nurses working at Aker Hospital<sup>168</sup> and at Ålesund Hospital, where students from Aker and Ålesund had their placements, were mostly recruited from the same nurse education programmes, or expressed in Bourdiean terms, *the corps of agents is educated in homogenous, specialised health care education*. When the tutors at the placements have a cultural capital almost homogenous to the cultural capital at the educational system, this might have reinforced the professional cultural capital being inculcated in the educational institutions.

The nurses and tutors at Bjerregaardsgt. and Ullevål are recruited from various nurse education programmes in Norway, as well as from abroad, and therefore do not represent a homogenous cultural capital as a nurse. This situation might have influenced the students' habitus in placements and have given them a broader view on health care. In such an understanding one can conclude that the professional cultural capital, dominating in a hospital where students practice, influenced the students' perceptions of health care and of interprofessionalism.

Another question to be raised is to what extent the nursing students' habitus can be explained by their childhood and adolescence, i.e. by their first habitus, or by another former habitus, for instance a school habitus. Students from Bjerregaardsgt. and Ullevål are probably mostly from the city of Oslo, while the students at Ålesund and Aker come from more rural parts of Norway. In this way, the students' former habitus could give indications that may explain why those from more urban areas were more convinced about the importance of interprofessionalism, and had an understanding of their habitus that also included a generic health worker dimension, than students from more rural regions. However, this question has not been a part of this study and will therefore not be further developed.

The results of analysis in the empirical study give reason to conclude that the nursing students at Bjerregaardsgt., and to some extent Ullevål, valued interprofessional education to acquire knowledge about other health professions and that this knowledge would improve their cultural capital as health workers. The nursing students at Aker and Ålesund, on the other

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<sup>168</sup> Aker Hospital, now University Hospital of Aker has earlier been a more local hospital.

hand, were more ambivalent about whether this was true or not. When the nursing students at Bjerregaardsgt. saw the value of having knowledge about other professions, they also expressed an interest in having insight into other professions' cultural capital.

Although the cultural capital dominating a profession, the result from this study gives reason to conclude that an identical curriculum does not necessarily result in homogeneous professional cultural capital. The data from the empirical study gave an example about how different educational institutions represent different professional cultural capital. The director of the study programme, given authority to decide which professional cultural capital to be transferred, the professional cultural capital at the hospitals where the students practised, and students' former habitus, may all influence the students' professional habitus.

The result from the empirical study revealed that constituent groups define in an implicit and/or an explicit way which professional cultural capital is being worthy to inculcate at the educational institutions and therefore determine how the students comprehended their future role in health care. In this way, political wishes with no coercion, for example to implement interprofessional education, in order to improve interaction between students from various health care study programmes, could be underestimated because educational authority has the power to set the agenda for what is worthy to be transformed.

## ***6.2 Interaction facilitates the improvement of the students' professional habitus as health workers***

Introducing a common core in the curricula for the health and social programme could be seen as an economic benefit for health care educations, by letting the students from various professions learn side by side. The intention by introducing the modified curricula was to initiate interprofessional education corresponding to stage three in the development of professional education (see figure 1). So, the question is if the idea was to go beyond interprofessional education, towards stage four, with pan or trans- professional education in order to achieve a more flexible workforce in the field of health and social care.

On the other hand such a political intervention could be a foundation for interaction and contact between the students from various reference groups, where the students learn from and about each other and thus may improve their habitus as health workers, as a way to

modernise health care. Such interprofessional initiatives, Areskog (1995:132) argues, need to be *an established part of government policy* in order to provide the political imperative to successfully establish and embed it within educational institutions. As no political demands for implementing interprofessional education followed the introduction of the revised curricula, the educational institutions have the power to exert a symbolic violence to select or neglect the common core implemented as interprofessional education. In order to determine whether interaction facilitates or not the improvement of the students' professional habitus, the following discussion will be outlined.

Whether the power relations determine the interprofessional cultural capital associated with the common core in the curricula of health care educational programme, expressed in the syllabus, or not, will be shown. Further, interactive learning methods that characterise the involved interprofessional education will be outlined. Based on the results of the empirical study, the question will be raised whether or not students who have modified curricula, valued interprofessionalism more than students with unmodified curricula. Another question to be discussed, based on the findings, is whether or not the common core being implemented as interprofessional education is a precondition for improving the students' habitus as health workers.

### **6.2.1 The power relations determine the interprofessional cultural capital, connected to the common core, expressed in the syllabus**

According to Barr's typology of interprofessional education (chapter 2.4.2), the common core in the curricula, could, in my opinion, be seen as a common content, even though the objectives include to have knowledge about other profession (see figure 3). The political decided intention might have been to introduce a comparative content, while the reality is that most of the health care education programmes have implemented the common core as uniprofessional activities. Viewed thus, the introduction of a common core has partly fulfilled the political desire to introduce interprofessional education and interaction between students from various professions, subject to different jurisdiction.

Collaboration and interaction with students from health care programmes with various theoretical, practical and methodological approaches, and variations in ways to understand the reality and ways of thinking, gives the students insight into other professional groups and alternative approaches. Contrary to being in a normative group, as a reference group, together

with students from the same, homogeneous professional education, a comparison or interprofessional reference group will challenge the student's cultural capital when students categorise themselves (chapter 2.6.1) and gives possibilities for developing Aristotle's praxis to fulfil the tasks the society ordain. Interaction and close face-to-face contact, as preconditions for interprofessional education, gives the students a view of themselves from the outside, a sort of mirroring; as a health worker and a more specialised profession. Interprofessional socialisation implies development of collaborative cultural capital through practice, or *phronesis*, in addition to *theoria* and *praxis* in order to perform as a health worker (chapter 2.5.1). This gives possibilities for the students to act – or fight<sup>169</sup> – in an interprofessional pedagogic subfield.

By introducing the common core in the curricula for all health and social educational programme the policy makers in Norway, as well as in Canada and the UK, drive the interprofessional agenda (Barr et al. 2005:107). Unlike Canada and the UK, the Norwegian policy makers did not allocate funding in order to facilitate the implementation of the common core as interprofessional education. No requirements have been enforced.

Implementation of interprofessional education can be problematic, Reeves et al. (2002:38) point out, *practical difficulties of joint timetabling across different educational institutions, parity of students numbers, joint course validation, differences in professional accreditation and accountability to a larger number of stakeholders must all be overcome*. Norman (2005:121) underlines the importance of ensuring that small numbers of students from the allied health professions not are overwhelmed by hoards of nursing and medical students when introducing interprofessional courses.

Implementing the common core in the curricula has been resisted by some of the implicated professions. As Bjørke and Haavie (2004:23) argue, if pressures to keep the profession independent is central, and the need for, or the importance of collaboration is not a subject of importance, the foundation for common learning across boundaries is correspondingly weak. In the description of the common core (see chapter 2.3.2), no requirement about interprofessional education is expressed, only a limited encouragement to organise the themes interprofessionally.

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<sup>169</sup> As Barr et al. (2005:118) point out, interprofessional education values collaboration over competition and *it works to constrain and counter the harmful of excessive competition within a wider collaborative framework*.

When introducing the idea of a common core, some professions, like medical laboratory science, decided that only 15 of the 30 common credits should be included in the modified curriculum for this profession. One argument made by the Directors of Study explaining this situation, may be that the cultural capital of medical laboratory science is dominated by natural sciences paying less attention to social relations. By excluding half of the common credits, i.e. 15 credits concerning knowledge about the welfare state, the interprofessional cultural capital explicit in the curriculum of this profession is less expressed compared with the interprofessional cultural capital in the curricula of the other allied health care professions included in this study. The situation can be seen as an example of how influential groups determine the degree of a common core in the curriculum.

Looking at how the common core has been handled by different health professions at HiO and HiAls gives the impression that it has been received and treated differently, within both organisations and within the professions involved. This could be explained because agents in the subfield of health care studies can select and exclude parts of the curriculum depending on what the agents at the health care programmes comprehended as important, e.g. whether or not the students should achieve knowledge and understanding of other health professions' cultural capital.

The Faculty of Nursing at HiO was critical towards introducing a common core in the curriculum, arguing that this could result in an increased emphasise on general knowledge to the detriment of specialist knowledge for nursing (Kvangarsnes 2005:93). Concerned to protect the profession, nursing education at HiO has, according to Bjørke and Haavie (2004:23), shown limited interest in collaboration with other health professions and resisted collaboration with the Faculty of Health Science regarding a joint arrangement of the common core<sup>170</sup>. At the Faculty of Health Science at HiO, the common core in the curriculum was organised as VEKS I, II and III (table 2) where the PT, OT and radiography students took part in the VEKS I, II and III programme, while the medical laboratory science students participated at VEKS I and II.

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<sup>170</sup> The Faculty of Business, Public administration and Social work at HiO refused to collaborate about a common organisation of the general part in the educational programme (Bjørke & Haavie 2004:23).

Bjørke and Haavie (2004:115) and Osnes (2002:10) all point out that a precondition for having success when introducing new pedagogic courses within an educational institution is that the programme must be deeply rooted in each educational system. This seems to be lacking in the professional programme for nursing when it comes to interprofessionalism at the involved health care institutions in this study. If then the nursing education, because of a larger number of agents or stakeholders than the allied health education, dominated the communication between the agents at different health care educations, they were in a position to decide which cultural capital that was worthy to be reproduced. Or, it might be that the lack of security about one's own professional cultural capital and habitus is one of the main reasons why the involved nursing programme has implemented the topics in the common core as uniprofessional education.

At HiAls, my own experience is that, as a director of the medical laboratory science at that time, the nursing education was the dominating group within the subfield of health care studies when the discussion about the common core was brought up among the two health care programmes. Stakeholders within the nursing study, given the pedagogic authority to select and exclude which professional cultural capital to reproduce, determined to implement the common core as uniprofessional courses. Therefore the medical laboratory science programme at HiAls was 'forced' to implement the common core as uniprofessional courses. The agents from nursing argued that the difference between medical laboratory science and nursing culture was too great to have some kind of the common core organised as interprofessional education.

The introduction of a common core could be seen as a political tool to implement interprofessional education as a part of the modernisation process in health and social care, within the limitations of the institutions' own resources. Some educational programmes have succeeded in organising the common core as interprofessional education at HiO, while other programmes they decided to ignore the recommendation to establish interprofessional education. This is an example of how this could be done, because the agents being stakeholders at the different educational programmes have been delegated the power to decide which cultural capital are been worthy to impose, i.e. if the common core of the curriculum should be expressed as a foundation for interaction between students in the syllabi.



However, as I understand the situation, it might be seen as an example of how power relations between the profession-oriented studies determined the process of implementing the common core and thus neglected a political desire to improve interactive learning among health care students from various reference groups.

### **6.2.2 Interactive learning methods characterise interprofessional education**

Can then courses across boundaries included in this study be understood as interprofessional or multiprofessional education (see chapter 2.2.1). Interaction and contact between students from different programmes requires a large number of instructors (Gilbert 2005:94). As no extra funding came with the introduction of the common core in the curriculum, this may be one reason why only six of 31 health and social educations decided to implement the common core as interprofessional activities.

By interacting with students from other health care studies and working towards common goal, students may achieve knowledge and understanding about the professional cultural capital of other health professions (as *energeia* or knowledge in practice). Acquisition to fulfil a specific habitus is constituted and changed in the meeting with both students and teachers from various professions as comparison reference groups. The choice of pedagogic methods to be selected is therefore critical. As partly given the pedagogic authority to select the pedagogic methods, as received or interactive, the teachers themselves, indirectly decided to which degree the face-to-face interactions with co-students could take place.

According to Barr's typology of interprofessional education (chapter 2.4.2.), learning methods can be received or interactive (figure 3). Received methods do not encourage interaction and collaboration and thought not sufficient to improve the students' interprofessional cultural capital. Both lecturing, as a received method, and several interactive methods, like exchange-based learning, action-based learning, and simulation-based learning, were selected as pedagogic methods, when implementing the common core as a VEKS programme at HiO (chapter 2.3.3). When determining which pedagogic approaches to choose, Bjørke and Haavie (2002:103) underline, the emphasis at HiO<sup>171</sup> was put on how to improve collaborative cultural capital by requiring the students to work in groups. This is an example of an open space for imposition of meanings.

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<sup>171</sup> However, Osnes (2002:10) asks if the pedagogic methods at the VEKS are too oriented towards the learning process in relation to the resources being available.

Concerning the second part of this study about developing interprofessional cultural capital among OT and PT students at two educational institutions, the learning methods selected when introducing interprofessional courses at HiB were received, i.e. lecturing, in addition to interactive methods, interactive as exchange-based, and simulation-based. At KI, the pedagogic methods seem to be mostly interactive; simulation-based, action-based and practice-based learning are chosen. To force the students to interact and collaborate, the agents at the educational institutions had determined several interactive pedagogic methods to be introduced when constructing the interprofessional initiatives. In addition to performing as different role models, teachers are central for shaping students' professional habitus, given the authority to decide whether or not, or to which degree and in which context the students are given possibilities to interact with students having various scientific traditions.

Meeting the political expectation for interprofessional education also involves the decision about how to implement the common core in the curricula in ways that reflect the interprofessional culture characterising the different health care study programmes. Given interaction being a precondition for interprofessional courses, interactive methods characterise this kind of pedagogic work. In this way, the common core, implemented as interprofessional activities, may give foundation for interaction and interprofessional socialisation to occur. One can question whether or not, or in which degree students with a common core in the curricula, implemented as uniprofessional or interprofessional education, valued interprofessionalism.

### **6.2.3 Students with modified curricula valuing interprofessionalism more highly than students with unmodified curricula**

A question is if the implementation of the common core as interprofessional education has been able to inculcate a lasting habitus so interprofessional education becomes more than political wishful thinking. Comparing the students' perception of interprofessionalism has been carried out to indicate about whether the introduction of a common core in the curricula for the health students was enough for the students, in order to improve their perception of interprofessionalism, or not.

A comparison of the involved students' perceptions of interprofessionalism before the introduction of a common core in the curricula (unmodified), with the students' perceptions of

interprofessionalism after the revision of the curricula (modified), showed that the common core has to a different degree influenced the students' perception of interprofessionalism. In other words, how they valued interprofessionalism, and thus their professional habitus. The results from the empirical study (chapter 5.4.5) revealed that the students, having unmodified curricula, were least convinced about the importance of interprofessional work. Students with modified curricula saw the necessity for having knowledge about the cultural capital of other professions to improve their own professional cultural capital.

The empirical study showed that students with modified curricula valued interprofessionalism and had improved their habitus as health workers. Wackerhausen (2002:65) argues that professional habitus does not change significantly with small changes in curriculum or isolated courses, because the daily practice, to a less extent, is controlled by explicit assumptions, explicit knowledge, articulated principle and conscious considerations, compared with habituating routines of action. From a Bourdiean perspective the situation gives reason to question whether the interprofessional study programme in health professional studies is such 'small changes in curriculum', or whether it is exhaustive enough, with sufficient duration and is transferable enough to improve a lasting change in the health care student groups.

When the fact that some of the students, i.e. OT, PT, radiography and medical laboratory science students at HiO, participated in interprofessional education, this could explain the differences of how the student groups valued interprofessionalism. However, results give reason to conclude that introducing a common core within the educational frames, improved the students' valuing interprofessionalism. It might be, on the other hand, that the common core itself was not enough to improve the students' perceptions of interprofessionalism, and that attending courses that included interactions and face-to face contact i.e. interprofessional activities, might be a precondition for changing the students' professional habitus.

#### **6.2.4 Implementing the common core as interprofessional education as a precondition for improving the students' habitus as health workers**

The empirical analysis revealed that the nursing students with modified curricula and uniprofessional courses were least convinced about the importance of interprofessional education as regards of being a better health worker (chapter 5.5.2) than the nursing students, with unmodified curricula. The OT, PT, radiography, and medical laboratory science students,

or allied health students, however, participating in interprofessional education with various duration were more positive towards interprofessional education as a way to improve their qualification as a health worker, compared with the allied health care students with unmodified curricula.

Therefore, the analysis gives reason to conclude that students having modified curricula in the curriculum implemented as *interprofessional education* tended a higher degree to value interprofessional collaboration and the importance of interprofessional education as a way to improve their professional cultural capital. The outcome of attending the VEKS programme, as an interprofessional initiative, was positive modification of perceptions (chapter 2.3.3).

Students from the nursing education with modified curricula expressed themselves more negatively towards working with other health professions, compared with the corresponding group with unmodified curricula. This might constitute an example of how the dominating agents determined which cultural capital is being worthy to inculcate. Those nursing students, however, with modified curricula were more aware of interprofessional education in the sense of having insight into other health professions, compared with comparable nursing students with unmodified curricula.

Under the cover of modernising the welfare state, a common core has been introduced. This has been done with no further guidance about how to implement the common core and with an intention that the educational institutions to carry out the implementation within existing resource. Even though interprofessional incentive has been an established part of government policy, I suspect that the success of the initiative has been limited. A common core may not be sufficient to improve the students' habitus as health workers. Interactive learning methods and interprofessional education seem to be crucial for the students to acquire the requested interprofessional cultural capital. Thus, different dimensions of interprofessional education, like duration and mode of interprofessional education, could be central aspects for the learning process and development of students' professional habitus and the acquirement of interprofessional cultural capital.

### **6.3 The effect of mode and duration of interprofessional education on the students' interprofessional cultural capital and habitus**

In order to find how the mode and duration of interprofessional education affects the students' interprofessional cultural capital, two core aspects will be discussed. First to what extent does the duration of the pedagogic work produce a lasting habitus as health worker is discussed, and second, how one can identify an involvement of the mode of interprofessional education by taking into account how students' former habitus and how it affects the students' interprofessional cultural capital and habitus.

#### **6.3.1 The influence of duration of the interprofessional pedagogic work on the production of a lasting habitus as health workers**

The interprofessional courses at the Faculty of Health Science at HiO have different duration, because some professions, like medical laboratory science, have decided to minimise the common core in the curriculum by including 15 of the 30 credits. Thus the medical laboratory science students at HiO participated in VEKS I and II, not in the VEKS III programme.

A longer duration of interprofessional education seemed to some extent to have improved the students' awareness of interprofessionalism or their professional habitus as health workers, compared with students having a limited degree of learning across boundaries (chapter 5.6). The data showed that students with modified curricula were less eager to have further information about other health care studies, compared with students having unmodified curricula. This acknowledgment among medical laboratory science students was greater than among the students having a longer duration of interprofessional education. This can be interpreted in the meaning as the medical laboratory science students, with limited relation with patient and other professions and with modified curricula, did not perceive such information as important to improve their professional cultural capital and to perform as a medical laboratory scientist.

On the other hand, medical laboratory science students with modified curricula were more assured that interprofessional activities would expand their horizon in the meaning of achieving a holistic view of health care, than comparable medical laboratory science students with unmodified curricula. The change of this acknowledgement, i.e. improvement of their habitus as health workers among these medical laboratory science students was greater than the corresponding acknowledgement among the students participating in the VEKS I, II and III programme. One reason for this response from the medical laboratory science students

might be an expression from the group that the profession's specific learning was too fragmented, in the sense of imposing a narrow view of the patient and health care.

The material from the empirical study showed, however, that the OT, PT and radiography students with modified curricula valued interprofessional *work* higher than the comparable student groups with unmodified curricula, and the improvement of this acknowledgment was greater than among the medical laboratory science students. Accordingly, the students inculcated a longer duration of interprofessional activities agreed to a higher degree that interprofessional education is necessary in order to understand other professions than did the corresponding students without interprofessional education. The improvement of this acknowledgment was greater than among the medical laboratory science students.

The analysis showed, on the other hand, that the medical laboratory science students with modified curricula were more convinced about the importance of interprofessional education in the sense of having knowledge about other professions, and of being better prepared as a health worker, compared with corresponding medical laboratory science students with unmodified curricula. The improvement of these acknowledgments among the medical laboratory science students seemed to be greater than the improvement of acknowledgment among the other health care students, having a longer duration of interprofessional education. This I understand as if students participating VEKS I and II emphasised the need for interprofessional education in order to be better prepared for the tasks in health care and to have knowledge about other professions, as a sort of propositional knowledge or aisthesis as theosis and doxa (chapter 2.5.1). The students who had been imposed a longer duration of interprofessional activities, on the other hand, valued interprofessional education, to have an understanding and insight of other health professions, as a sort of energeia or theoria and praxis.

These examples could be explained by the fact that students, being exposed to an extensive interprofessional activity, developed a more lasting habitus as a health worker compared with students attending a less extensive programme of learning across boundaries. Even if there is little evidence about the optimum duration of interprofessional education, Freeth and Reeves (2004:51, Reeves & Freeth 2002:46) assume that shorter bursts of learning for collaboration will have limited impact. On the other hand, earlier research reveals that even shorter courses, like a one or two-day course increased students' knowledge and understanding of working

across boundaries and helped to improve positive attitudes towards other professional groups (Parsell et al. 1998, Farrell et al. 2001). The result supports also Bourdieu's thesis, claiming that the effect of reproducing a durable habitus - as health workers - depends on the *mode*, i.e. transposability and exhaustivity, and the *duration*, of the interprofessional education. I understand the findings as an example of how the duration of the pedagogic work affects the students' professional habitus.

However, it might be the mode, i.e. the transposability and/or exhaustivity, for example the learning methods that contributed to the differences between the student groups. Interactive learning methods presuppose that the agents, like teachers, have to take another role in the educational system – from being a communicator to being a facilitator.

As the corps of agents is educated in homogenous, specialised health care education, one can ask if they have the appropriate cultural capital to facilitate interprofessional courses, and if their interprofessional cultural capital, in order to give the students examples for being as real as possible from a functional interprofessional field, is limited. This can concern the exemplifications of interprofessional collaboration in hospital, e.g. whether or not a common task being related to patients is perceived as relevant for all the participating students. On the other hand, one can assume that the agents having experience from the health care and that met with the struggle in health care see the need for interprofessional collaboration and education. However, it might be that the VEKS programme is transposable or not, i.e. if the programme is appropriate for students with limited relations towards patient and other professions by giving reasonable realistic examples from interprofessional working in health care.

Given that medical laboratory scientists seldom work in interprofessional groups, examples from the reality at hospitals, such as case studies, might be perceived as less relevant for this student group, compared with the others with stronger relations with patients and other professions. This corresponds with Wackerhausen (2002:77), claiming that detached courses have no effect, if the other subjects within the education programme, i.e. the professions' 'proper' subjects, not are integrated in the courses.

The analysis gives reason to conclude that having a longer duration of interprofessional education seemed to have improved the students' consciousness about interprofessional work

and the importance of a closer insight into the cultural capital of other professions, compared with students having a shorter duration of interprofessional courses. This is an example of how the pedagogic work, or the duration of interprofessional education, determines the improvement of students' habitus as health workers and the success of interprofessional education. On the other hand, a question to be raised is if the VEKS programme is exhaustive or if the programme is well enough designed. In other words, whether or not, or how the mode in interprofessional education have impact on students' cultural capital to collaborate with other professionals.

### **6.3.2 The effect of mode of interprofessional education and of former habitus on the students' interprofessional cultural capital and habitus**

Even if the socialisation process, with interaction and contact between the students, i.e. microstructures, in interprofessional education is important, it is the macrostructures, or structural conditions that give guidance for the stage, localisation, and duration of the pedagogic work, and therefore the context of interprofessional activities. As the interprofessional education is organised within the limitation of an educational institution system's own resources, the institutions' means give guideline for the implication of interprofessional pedagogic work. In other words, the possibilities of success of having functional interprofessional courses are situated within the frame of the institutional educational system.

The focus within the interprofessional activities at HiB is mainly on preparing the students to work in interprofessional groups (see figure 2). At KI, in addition to individual preparation to interprofessional collaboration, the focus is on effective group working, by cultivating collaborative groups connected to the patient. The foci at the two institutions differ. The content, learning methods and localisation seem to diverge.

According to Barr's typology (chapter 2.4.2), interprofessional education could be distinguished according to objectives, curriculum content and learning methods, in addition to stage, duration, localisation and validation. The objectives for the interprofessional education at HiB and KI are aiming at modifying attitudes and perceptions as well as acquiring interprofessional cultural capital (chapter 2.3.3). The curriculum content gives opportunities for students from various professions to learn from and about each other, both at KI and HiB, i.e. constitute a comparative content. Learning methods at both HiB and KI are received and



interactive. The duration of interprofessional education at HiB is in total three weeks and two days for the OT and PT students included in this study, two weeks the first, one week at the second and two days in the third year, while the OT and PT students at KI attended the Clinical Education Ward in two weeks at the third year. In addition, the PT students participated at the Clinical Training Centre for two weeks during the second year. The courses at HiB and at the Clinical Education Ward at KI are validated as passed or failed. The interprofessional education at HiB is college-based, while the interprofessional education at KI is work-based. In this way, the foci, the mode and the duration of the interprofessional courses at KI and HiB differ in accordance with stage, extension and localisation.

Interprofessional courses need to create opportunities for rewarding interaction between students in their respective professional roles, designed to improve mutual respect and understanding (Barr 2002:18). As equality is a precondition for preventing stereotyping, one can question if the interprofessional activities have generated a form of interprofessional self-awareness and if the different professions' accountability has been resolved. It might be that the status among the professional's cultural capital, in reality, is not equal at the two educational institutions.

At HiB all the involved students participating interprofessional courses completed a bachelor degree. Correspondingly, the OT, PT and nursing students at KI achieved a bachelor degree, while the medical students followed a five and a half years programme. The entrance requirements for the various programmes at HiB and KI also differ. On the other hand, experiences show that it not easy to meet the other presuppositions for interprofessional educations (see WHO, chapter 2.4.1).

While learning together in practice, says Norman (2005:123), students will discover ways in which interprofessional collaboration can improve health care. The assumption is that work-based interprofessional education integrates both process and outcome, and that it is marked more likely than college-based initiatives to improve the quality of welfare. However, the result of the empirical analysis in this study does not clearly support this presumption (chapter 5.12.6). The OT and PT students at KI, having practised in interprofessional activities in placements at hospital and training wards, did not obviously have a closer understanding of the cultural capital of their own and of the other profession, compared with the two student groups at HiB. Neither do the findings correspond with Fallsberg and Wijma (1999), Mires et

al. (2001), Reeves and Freeth (2002:50), Ponzer et al. (2004) and Gordon (2006), all of whom report that work-based interprofessional education improved the students' insight into other professions' role. On the other hand, Parsell et al. (1998) and Carpenter (1995b) reported positive effects of college-based interprofessional education in the meaning of improving students knowledge of other health professions. However, it might be that the location in a ward offers a rather weak opportunity to enable the students to acquire the wanted interprofessional cultural capital.

Gill and Ling (1995:186) claim that entering the field of interprofessional education at an early stage improves the students' learning process. If so, one might anticipate that the OT and PT students at HiB would have a deeper insight into the cultural capital of their own and of the other health profession, compared with the students at KI. When the material in this study, on the other hand, did not obviously showed that the OT and PT students at HiB had a better understanding of their own and of the other profession, even if they attended an extended interprofessional course and started at an early stage, this might mean that the duration and stage is rather weak and thus not able to impose an interprofessional and lasting habitus. One can question whether or not concentrating the interprofessional courses at the end of the education, when the students have knowledge about the cultural capital of their future profession, makes it easier to learn from and about each other.

In Bourdiean terms, there is certain inertia in the educational system when introducing new pedagogic courses. As the interprofessional education at KI and HiB both started their interprofessional programme in 1998, this point of the institutional inertia does not alone justify the proposition that the interprofessional cultural capital being reproduced at HiB had a time-lag.

In the empirical analysis I found a distinction between the cultural capital dominating the occupational therapy and physiotherapy and also between the two educational institutions. The OT students at HiB represent a habitus focusing on treatment ideology, while the habitus of the OT student at KI emphasised the patient to be self-reliant (chapter, 5.13.1 and 5.16). On the other hand the PT students at KI focused less on the patient to be self-reliant (chapter 5.16.1 and 5.16.3), while the PT students at HiB comprehended the society to be responsible (5.16.2 and 5.16.3). I interpreted the result as if the PT students at HiB understood that an OT

to some extent concentrates on the outer structures connected to the patient's wellbeing, compared with the PT students at KI.

The data from the empirical study also revealed that the OT and PT students at HiB represent a habitus that was convinced that an OT should help the patient to be self-reliant and that the society is responsible for the patient's wellbeing (chapter 5.12.6). On the other hand, both student groups at KI expressed the view that an OT should make the patient responsible for their own wellbeing (chapter 5.12.6, 5.16.2 and 5.16.3). However, older students were more convinced that an OT should make the patient aware of their own responsibility for their daily life, compared with the younger ones (chapter 5.13.3). As the students at KI were older than the students at HiB, this might, to some extent, explain why the students there understood that both the society and the patient are responsible for the latter's wellbeing; it is not sufficient that everything should be organised for the patient.

The result showed that *young* PT students at KI perceived that both the patient and the society are responsible for the patient's wellbeing (chapter 5.16.2). Therefore, both younger and older PT students, as agents in the field at KI, comprehended an OT to focus both on the patient and the society, when improving the patient wellbeing. However, the PT students at KI attended the Clinical Training Ward in two weeks, i.e. attending a longer duration in interprofessional education than the OT students. This example showed that the duration and the mode of the interprofessional education at KI or its exhaustivity, for example by allowing the students to practice interprofessional collaboration in placements or in 'the real world', may affect the students' interprofessional cultural capital.

Further, the empirical analyses revealed that the student groups at KI perceived the cultural capital of a PT to be more like a teacher and that a PT has some of an OT's skills (chapter 5.12.6 and 5.13.2). The understanding that the PT perceives themselves more like a teacher is also related to students who have a longer duration of experience in health care before starting their study. As the students at KI had a longer experience in health care before starting their study than the students at HiB, this practice might enhance the positive influence of such a point of view.

Students who have followed an occupational section at upper secondary school were convinced that a PT has some of an OT's skills (chapter 5.13.3). This is in parallel with the

responses by the students at KI, where almost half of the students, and especially the OT students, had chosen an occupational section. When the habitus of students, coming from a pedagogic work and being more oriented towards the working life, compared with a habitus of students graduated from a traditional oriented section, this might simplify the later habitus to coincide with the cultural capital expressed at KI. This is another example of how a former habitus, inculcated at upper secondary school is connected to the students' pedagogic work and thus the students' interprofessional cultural capital.

One can question to which degree the interprofessional pedagogic work has imposed and inculcated the student groups a homogeneous interprofessional cultural capital, or if the OT and PT students at the two institutions had coincidental comprehension of the cultural capital of the involved professions. The result showed that the OT students at KI focused on helping the patient to be self-reliant (chapter 5.16.1 and 5.16.3) and seemed to perceive their role in health care as being preventive, a role often linked to a PT's cultural capital (chapter 5.13.1).

The PT students at KI, however, were not convinced that an OT has a preventive role in health care (chapter 5.13.1). On the other hand this PT student group perceived an OT to make the patient aware of their responsibility for their own wellbeing. The cultural capital of a PT has according to the OT students at KI, a more holistic view and has some of an OT's skills (chapter 5.13.2). The PT students at KI comprehended a PT to have a broader range of cultural capital (chapter 5.13.2, 5.16.2 and 5.16.3) and perceived themselves in the future to behave like a teacher (chapter 5.13.2). To some extent, the OT and PT at KI had a corresponding, idealised perception of the cultural capital of an OT and a PT, but far from a homogeneous idea of what characterises the professional cultural capital of an OT and a PT.

The material from the study showed that the OT and PT students at HiB interpreted the society to be responsible for the patient's wellbeing (chapter 5.13.1), focusing on the patient's wellbeing, and were convinced about the importance of an OT to make the patient being self-reliant and to organise the environment to make the patient managing their daily life (chapter 5.16.2 and 5.16.3). The OT students at HiB, being the youngest student group, did not attribute a PT as having a holistic view (chapter 5.13.2). Since this group also disagreed that a PT must adjust facilities, it seems likely that these OT students did not consider the cultural capital of a PT to have some of an OT's cultural capital, and perceived a PT to have limited cultural capital (chapter 5.16.1 and 5.16.2).

The empirical analysis also revealed that the PT students at HiB were least convinced that the cultural capital of a PT, to some extent, has some of an OT's skills (chapter 5.13.3). This 'middle-age' student group comprehended the skills as an important part of a PT's cultural capital (chapter 5.16.3). In a way, both student groups at HiB interpreted the professional cultural capital of their own and of the other profession to have a more narrow professional cultural capital, compared with the student groups at KI. On the other hand, one can ask whether the students at HiB had a more realistic understanding of their own and of other professions' cultural capital. However, I find reason to conclude that even if the same interprofessional cultural capital has been imposed at the two different educational institutions, the product of the inculcated transferred culture is not homogenous.

Further, in the empirical study, I found that younger students were convinced that an OT's cultural capital represents a profession that make the patient conscious about being self-reliant (chapter 5.13.3). Helping the patient to be self-reliant, on the other hand, may also be linked to gender, or may coincide with females' view of the professional cultural capital of an OT. This perception of the professional cultural capital of an OT is characteristic for students that followed an occupational section at upper secondary school, and students with some experience in health care before starting the study. When the understanding of the cultural capital of an OT corresponds with both OT student groups and with the PT students at HiB, I conclude that, not unexpectedly, a former habitus affects the students' later habitus.

'Middle-aged' students, having an occupational section at upper secondary school, with a longer duration of experience within health care before starting the study, and those having work experience concurrent with study as e.g. summer job, had a rather broad or idealised view of the cultural capital of a PT (chapter 5.13.3). When this also corresponds with the perception of the cultural capital of an OT expressed by both student groups at KI, one can ask to which degree the former habitus has improved students' interprofessional cultural capital or if it is the interprofessional cultural capital dominating the educational system at KI that affect the students' later habitus.

The result showed that students, having chosen a traditional oriented section at upper secondary school, had a more narrow or realistic view of the cultural capital of a PT (chapter 5.13.3). This coincides with the comprehension of the cultural capital of a PT among the OT

and PT students at HiB, where almost all the students have attended a general oriented section. It might be that the former habitus, influenced by the inculcated pedagogic work at a general oriented section with a more academic tradition, had given the students a limited insight into the habitus of different agents in the field of health care. In other words, the distance between a former habitus imposed at an academic section at upper secondary school, and the habitus the health care education aims to inculcate, seems to be greater than the distance in habitus between the former habitus among students with an occupational-oriented section and the habitus among students in health care education.

The material from the empirical study revealed that older students, with experience in health care before starting their studies and in parallel with their study, interpreted that the cultural capital of an OT is marked by helping the patient to be responsible for their own wellbeing (chapter 5.13.3). This corresponds with the perception of the professional cultural capital of an OT expressed by the OT and PT students at KI, being older than the students at HiB and with a longer duration of experience before starting the study.

The analysis showed the importance of the students' former experiences and a former habitus for the development of their interprofessional cultural capital after having gone through a health care study programme. The question is to what extent the students' experiences in the field of health care, rather than the interprofessional pedagogic work at KI, has affected the students' professional habitus, and influenced their understanding of an OT's cultural capital.

According to the data, students attending an occupational section at upper secondary school perceived the cultural capital of an OT as helping the patient to be self-reliant, and to make the patient conscious about their own responsibility for their wellbeing. This corresponds to the comprehension of the cultural capital of an OT among the OT and PT students at KI, almost all having chosen an occupational section. The empirical study supports the proposition, in accordance with Bourdieu, that the students' perception of their prospective role in health care is, among other factors, influenced by their former habitus. This corresponds also with Reeves (2000:275) who concluded that students' perceptions are also formed by the pre-professional socialisation. Or, in other words, the students' former habitus influence students' later habitus.

On the other hand when it comes to the comparison of perceptions from OT's and PT's students in Norway and Sweden, one can question whether there exists a distinction between the understanding of OT's and PT's professional cultural capital in the two countries. Although the culture in Norway and Sweden is comparable in many ways, the historical and social perspectives of the professions presumably differ. However, as this question has not been a part of this study, it will not be further developed.

Interprofessional cultural capital can be seen as a part of the students' professional cultural capital. In this study interprofessional cultural capital is confined to *knowledge in practice as theoria*; as a critical understanding of the professional roles of all group members (Walsh et al. 2005:234) and *reflection as phronesis*; as reflection on the development of ones' own role (Gordon & Walsh 2005:31). Even if the empirical study does not include parameters for the domain of interprofessional cultural capital covering *ethical practice* and *interprofessional working*, I find that the result from this study gives reason to conclude that the mode of interprofessional education, by acquisition of knowledge as outcome of interprofessional education and a former habitus affects the students' interprofessional cultural capital.

The material supported the view that interprofessional cultural capital, as well as students' professional habitus, must be seen as macrostructures, in addition to active processes such as interaction and close face-to face contact with co-students from normative and comparison reference groups. This empirical study is an example of how contextual reality involves the interaction process.

Both objective structures, such as institutional conditions and the mode and duration of interprofessional education, and subjective structures, e.g. interaction and a personal feeling of harmony between concrete experience and contextual codes, developed retrospective over time, and students' former habitus seem to be central elements, in order to improve the students' interprofessional cultural capital as health workers. The empirical material in this study supports the theoretical founded approaches to interprofessional education, and revealed that the pedagogic authority, pedagogic action, pedagogic work and the educational system are all involved in the introduction of a common core in the curriculum for the selected health professions and how interprofessional education relates to the students' interprofessional habitus and cultural capital.

## **6.4 Final consideration**

In a consideration of the meaning of the propositions being developed on the bases of Bourdieu's theory about the educational system, the implications of the introduction of a common core in the curriculum, its duration and different modes of interprofessional education, can be summarised as follows:

### **Professional cultural capital is important as guidance for the development of the students' interprofessional cultural capital and habitus**

In this study I found that the cultural capital of a profession differs according to the function the profession has to fulfil in health care, some having relations with both patients and professions, others having sporadic relations with patients and/or other professions. The power relations between the constituent groups of a profession determine which cultural capital is considered worthy to inculcate. The professions tend to practise interprofessional collaboration to various extents, depending on the degree of social and caring relations the agents in the field of health care attend to. In this way, the emphasis on interprofessional cultural capital seems, to have different dimensions.

The assumption about the importance of professional cultural capital for the development of the students' professional habitus is supported by the empirical study. The findings showed that students interpreted interprofessionalism differently, in accordance with the professional cultural capital imposed on them, or depending on how the students from profession-oriented studies, understood their prospective role as health workers. The group habitus of health professions, as guidance for the students' professional cultural capital being inculcated during the socialisation process, with internalisation of specific values and attitudes and acquisition of professional behaviour, is expressed explicit and implicit (as hidden curriculum) in the curricula and syllabi.

The empirical study revealed that the habitus of the OT students, having relations to both patients and other professions, corresponded with having habitus as a health worker. The habitus of the nursing students were aware of the implications of interprofessional work and education. The PT students' habitus, with orientation towards patients, on the other hand, valued interprofessional work, but were less willing to enter interprofessional education. The professional habitus of the radiography students, having extent relationship towards patients, and medical laboratory science students, being less relationally oriented, did not value interprofessional education as a way to improve their professional cultural capital. The



material showed, however, that the radiography students, with relations to the patient, identified themselves more as health workers, compared with medical laboratory science students. In addition, the latter student group did not focus on working across boundaries. The cultural capital dominating the health professions, expressed explicit in the written curricula and implicit in the hidden curriculum, seems therefore to be transposed to the students during the socialisation process.

When designing a syllabus connected to a specific curriculum, the dominating stakeholders decide which professional cultural capital to impose, and this gives variations in the contents of the syllabi at different educational institutions. This degree of freedom allotted to institutions justifies the empirical study, showed that students at four nursing educational institutions in Oslo and Ålesund appreciated interprofessionalism differently. In general, the nursing students saw the need for interprofessional work in health care, but were less willing to take part in interprofessional education, as a part of the subfield of their health care studies. The directors of the studies have been given authority to influence which professional cultural capital to be expressed in the syllabi. Other agents in the field of nursing education, like teachers and tutors, both in the educational institutions and on placement in hospitals, also determine what is of importance to reproduce or, in other words, which professional cultural capital to be inculcated.

The empirical study showed that the professional cultural capital at Bjerregaardsgt., and to some extent, Ullevål, were characterised by groups of nursing students, valuing interprofessionalism as a learning method to improve their interprofessional cultural capital. The nursing students at Ålesund and Aker, on the other hand, seemed to focus on the role of nursing in the field of health care. Therefore, the dominating constitutive groups set the agenda for which professional cultural capital is worthy to transfer to the next generation of nurses, expressed both in the curricula and syllabi and imposed during the socialisation process.

In my study, I found that the professional cultural capital is important for the students' professional socialisation process and their perceptions of interprofessionalism, and their perception of their own and of other professions' cultural capital. This might indicate that professional cultural capital is crucial for the students' professional habitus and their interprofessional cultural capital.

### **Interaction facilitates the improvement of the students' professional habitus as health workers**

Even if being an established part of the government policy, the political intervention of introducing a common core in the curricula for all health and social study programmes with no coercion and with no financial support has resulted in implementing the common core mostly as uniprofessional courses at the university colleges. The intention to modernise health and social care to an effective and efficient system, by developing a common culture and by improving students' interprofessional cultural capital, or maybe to educate more flexible health and social workers, therefore has, to my understanding, partly been successful. The situation could be explained in terms of power relationships and of communication in the field of health care educational studies, in other words, by which interprofessional cultural capital the dominating culture decided to reproduce.

Alternatively, if the intention was to introduce the common core as interprofessional courses, the learning methods presupposes to have interactive elements, in order to improve interaction and dispel negative stereotypes. While interacting, the students with different professional cultural capital and habitus, will get in contact with students from other health care studies with different jurisdiction, or in a Bourdiean expression, play a game where the structures in the social place are created. When interacting with various comparison groups, as instance reference groups, possibilities are given to learn from and about each other, and to achieve insight into similarity and differences with others and various ways to see the reality of health care, and thus, to develop interprofessional cultural capital. Agents, when designing and constructing interprofessional courses, have emphasised and selected interactive learning methods as important pedagogic tools, requiring that students work face-to-face with students from different cultures and experience contrasting habitus.

The empirical data showed that the introduction of the common core, implemented within the frames of the pedagogic authority, pedagogic work and the educational institution, made the students aware of interprofessionalism. In this study I found that a precondition for improving the students' habitus as a health worker and belongingness to health care was that the common core was implemented as interprofessional activities, and therefore included interactive learning methods. I found that to introduce a common core, without demands

about implementing the common core as interprofessional activities, was not to be sufficient to improve the student's willingness to enter a field of interprofessional work.

Financial support followed by a coercion of implementing the common core in the curriculum as interprofessional courses, might have strengthened the possibilities for establishing additional interprofessional initiatives at the university colleges in Norway. Accentuating the importance of interprofessionalism, as a part of the cultural capital of health care, shows another approach to improve students' internalisation of a broader and complementary identity. On the other hand, one may question whether or not a key to improve interprofessional cultural capital among health workers is to reduce professional insecurity.

### **The effect of mode and duration of interprofessional education on the students' interprofessional cultural capital and habitus**

The empirical analysis in this thesis confirms Bourdieu's theory that the duration of pedagogic work, or interprofessional education, determines students' professional habitus. A longer duration of interprofessional education seemed to make the student desire for a deeper understanding of other professions' cultural capital, a sort of *energeia*, as *praxis* and *theoria*, while during a shorter duration of inculcation of interprofessional education the students were engaged to achieve *aisthesis* as *theoresis* and *doxa* or propositional knowledge. On the other hand, it might rather be the mode of work i.e. transposability and/or exhaustivity, that causes the variation between the student groups in this study.

The material from the empirical study showed that in addition to duration and different modes, e.g. stage, pedagogic learning methods, localisation, and objectives of interprofessional education, also students' former habitus have implication for their understanding of similarities and differences between group habitus of health professions. The interprofessional pedagogic work and the educational system seemed to be central for the students' interprofessional cultural capital.

The results revealed that the OT and PT students at KI, being older and having experience in health care and attending a work-based interprofessional education, had a broader or idealised view of their own and of other professions' cultural capital. This point of view coincides with a former habitus having an extended practise in health care and graduating an occupational section at upper secondary school. As the younger PT students at KI, and therefore having a

limited duration of experience in health care, as well had a broader view of their own and of other professions' cultural capital, one can ask if it is the students' former habitus or, if it is the mode of interprofessional activities that are vital as regards to the students' 'praxis' or interprofessional cultural capital. However, as the PT students at KI attended for a longer duration of interprofessional activities compared with the OT students, the duration of interprofessional educational may explain why both younger and older PT students have a broader perception of their own and of the other profession's cultural capital.

The empirical study showed that the OT and PT students at HiB, entering interprofessional education at an early stage at the university college, being younger and with less experience in health care than the corresponding students at KI, had a narrower, or maybe a more realistic view of their own and of the other profession's cultural capital. Further, I comprehend that the findings revealed that at both educational institutions and the interprofessional pedagogic work have to a limited degree inculcated a homogeneous interprofessional cultural capital among the involved student groups.

The results from the study gives reason to conclude that students' professional habitus as health workers and their interprofessional cultural capital, not unsurprisingly was affected by a former habitus and the socialisation process during the education, i.e. the pedagogic authority, pedagogic action, pedagogic work and the educational system. In the empirical study, I found that the duration of interprofessional education was crucial for the students' perception of interprofessional work and that the mode of interprofessional activities seemed to be important for the students' perception of their own and of other professions' cultural capital.

When constructing a subfield of practice of interprofessional education, the exhaustivity and transposability, in other words the design and organising of the interprofessional pedagogic work within the educational system's means, are of importance for improving the students' interprofessional cultural capital. Based on this knowledge, curriculum designers are challenged to provide a context in which students perceive the content and mode of learning as relevant, *or in other words, pragmata being structured in form of individual or collective pragma-topography.*

Earlier research show evidence that interprofessional education is important for students' knowledge of their own and of other professions' cultural capital (see chapter 2.7). This study showed that the way interprofessional education has been implemented, i.e. duration and the mode of the interprofessional pedagogic work influence students' perceptions of their own and of other professions' cultural capital, or their interprofessional cultural capital. In my thesis, I found that introducing a common core in a modified curriculum for health care studies was not enough to change students' perceptions of interprofessional work and maybe their willingness to collaborate across boundaries. Given possibilities to interact with students from comparative reference groups, the length and localisation of the interprofessional activities seem to be vital for the students' professional habitus.

However, changing students' perception of interprofessionalism may not be sufficient to change the students' ability to work interprofessionally (Parsell & Bligh 1998:89). A question to be asked is whether health worker students should be socialised to a professional identity primarily as a superior or generic health worker, having the common aim with other groups and, secondly, to a more occupation specific identity. Or, arguably, should students internalise a profession specific identity and a broader and complementary identity or a habitus including a health worker dimension?

It could be interesting to find out if the students' perception of interprofessionalism changed after graduating and the interprofessional pedagogic work has ceased, or how the professional cultural capital inculcated during the socialisation process affects the health workers' later habitus. It is also relevant to continue to study to what extent the students' former habitus and the mode of pedagogic work influence, in a central way on the students' interprofessional cultural capital, acquired through their health care study.

*This study showed that the introduction of a common core in curricula for health care students was not sufficient to improve their professional habitus as health workers. The results revealed that possibilities for interaction and interprofessional education are central for the students to change their perceptions of interprofessional work and their professional habitus. As it is argued in this thesis, this includes also students' identity. The duration and mode of interprofessional education seemed to have implications for improvement of the students' interprofessional cultural capital which includes their interprofessional capability or *empeiria and energeia**



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## **Appendix**

**Appendix 1 The Norwegian Social Science Data Service**

**Appendix 2 Stud Data Questionnaire**

**Appendix 3 Codes in Stud Data Questionnaire**

**Appendix 4 Interview Guide**

**Appendix 5 Questionnaire HiB and KI**

**Appendix 6 Codes in Stud Data Questionnaire**

**Appendix 7 Histogram of the eigenvalues in the StudData correspondence analysis**

**Appendix 8 Histogram of the eigenvalues in the HiB/KI correspondence analysis**

**Appendix 9 Overview of the elements in Bourdieu's thesis of the educational system**







## Appendix 1

Synnøve Hofseth Almås  
Høgskolen i Ålesund

6025 ÅLESUND

Vår dato: 29.11.2002

Vår ref: 200200956 AGM/ RH

Deres dato:

Deres ref:

### VEDR. MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 22.11.2002. Meldingen gjelder prosjektet:

9569 *Betydning av felles vektall i helsefagutdanningene. Tverrfaglig undervisning: implikasjoner for sosialiseringsprosessen og identitetsutvikling*

Etter gjennomgang av opplysninger gitt i meldeskjema og dokumentasjon, finner vi at prosjektet ikke medfører behandling av personopplysninger i henhold til Lov om behandling av personopplysninger (POL) §§ 1 til 3, og følgelig ikke utløser meldeplikt eller konsesjonsplikt etter personopplysningslovens §§ 31 og 33.

Vår vurdering er basert på følgende opplysninger fra prosjektleder:

Formålet med prosjektet er å utvikle kunnskap om implikasjoner ved innføring av felles vektall i rammeplanene ved helsefagutdanningen - om tverrfaglig profesjonsutdanning gir helsearbeidere identitet og tillit til sin egen kompetanse og praksis.

Utvalget består av tredjeårs ergoterapistuderenter og fysioterapistuderenter fra Høgskolen i Bergen og Karolinske Instituttt i Stockholm, ca. 200 personer i alt. Studieleder ved utdanningen oppretter førstegangskontakt.

Det skal ikke samles inn opplysninger med personidentifikasjon. Datamaterialet er derfor anonymt.

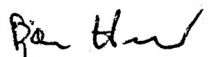
Prosjektslutt er beregnet til 31.12.2006.

Dersom undersøkelsesopplegget endres i forhold til de punktene som ligger til grunn for vår vurdering, skal prosjektet vurderes på nytt av Datafaglig sekretariat.

Datafaglig sekretariat vil ved prosjektets avslutning, 31.12.2006, rette en henvendelse om arkivering av data benyttet i prosjektet.

Kontaktperson: Alette Gilhus Mykkeltvedt tlf: 55582174

Vennlig hilsen  
Datafaglig sekretariat

  
Bjørn Henrichsen

  
Alette Gilhus Mykkeltvedt

**TILLEGGSSKJEMA FOR HELSEFAGSTUDENTER (IKKE SYKEPLEIE)**

**1. Synspunkter på tverrfaglighet i utdanningen og i helsetjenesten. Prøv å svare selv om du ikke har direkte erfaring med det påstanden handler om. SETT KRYSS**

	Svært uenig	Stort sett uenig	Litt uenig	Litt enig	Stort sett enig	Svært enig
Tverrfaglig undervisning vil gjøre meg bedre kvalifisert som fagperson når jeg er ferdig utdannet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forståelse for andre yrkesgrupper behøver man ikke tverrfaglighet i utdanningen for å få	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forståelse av andre yrkeskategorier kan best oppnås ved undervisning på tvers av fagene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeg tror at ved tverrfaglig undervisning vil jeg vite mer om andre profesjoners rolle i forhold til pasienter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tverrfaglig undervisning gir et mer helhetlig innblikk i helsevesenet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kunnskap om andre helseprofesjoners kompetanse vil gjør meg til en bedre helsearbeider	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeg ser ingen hensikt i å ha prosjektoppgaver sammen med studenter fra andre profesjonsutdanninger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeg synes det er interessant å få innblikk i andre helseprofesjoners fagområde	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeg ser ikke nytteverdien med gruppearbeid på tvers av profesjonsgrenser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeg ønsker å få mer generell kunnskap om andre helseprofesjoners studium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## Appendix 3

### List of codes in questionnaire StudData

Question	Code	Variable	Content
1	Codenr		
2	SD 1, 1&2 =1 (answered questionnaire I 1 <sup>st</sup> and 3 <sup>rd</sup> year) SD 2, 1=2	STA	Participants on different stages SD 1,1= 1 <sup>st</sup> year students panel 1 SD 1,2=3 <sup>rd</sup> year students panel 1 SD 2,1= 3 <sup>rd</sup> year students panel 2
3	Not for analyses	Utdannin	Utdanning
4	Man = 1 Woman = 2	SEX	Gender
5	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	EDU	I will be better qualified as a health worker, after finishing my education if this include interprofessional education
6	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	UND	Interprofessional education is not necessary in order to understand other related professions
7	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	OCC	Interprofesional education gives knowledge about other professions
8	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	ROL	I feel that I would acquire knowledge about the roles in other professions through interprofessional education
9	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	VIE	Interprofessional education, leads to a holistic insight in the health service.
10	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	CMP	Knowledge about other health professions would make me a better health worker
11	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	PRO	I do not see the purpose of doing projects together with students from other profession-oriented studies
12	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4	VIW	I find it interesting to have insight into other health professions

13	Not answered=5 Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	GRO	I do not see the value of teamwork across professional boundaries
14	Mostly disagree = 1 Somewhat disagree = 2 Somewhat agree = 3 Mostly agree = 4 Not answered=5	DTU	I want to have more information about other studies within health professions
15	Nurse = 1 Medical laboratory scientist = 2 Radiographer = 3 Physiotherapist = 4 Occupational therapist = 5	PRF	Professions
16	21-25 = 1 26-30 = 2 31-> = 3	AGE	Age

Aspects of interprofessionalism. Try to answer even if you not have directly experience with the content of the statement.

---

Codes being used:	Grouping answers:
Strongly agree =1	Mostly disagree
Mostly agree = 2	
Somewhat agree = 3	Somewhat disagree
Somewhat disagree = 4	Somewhat agree
Mostly disagree = 5	
Strongly disagree = 6	Mostly agree

A description of the answers in questionnaire A

## Background data

Analysis comparing nurse students from four occupational institutions

<i>Nurse educational institution</i>	N	%
Bjerregaardsgt	55	16.0
Ullevål	112	32.6
Aker	79	23.0
Ålesund	98	28.5
Total	344	100.0

<i>Stage</i>	N	%
SD 1, 1&2	394	38,9
SD 2,	619	61,1
Total	1013	100,0

<i>Profession</i>	N	%
Nurse	585	57,7
Medical laboratory scientist	97	9,6
Radiographer	77	7,6
Physiotherapist	172	17,0
Occupational therapist	82	8,1
Total	1013	100,0

<i>Gender</i>	N	%
Men	121	12.2
Women	873	87.8
Total	994	100.0

<i>Age</i>	N	%
19-20	120	12.1
21-25	467	47.1
26-30	233	23.5
31->	171	17.3
Total	991	100.0





### Intervju guide

*Tema:* Yrkesspesifikk identitet hos ergo- og fysioterapeuter sett fra lærere, studenter og ferdig utdannede ergo- og fysioterapeuter.

*Metode:* 4 lærere og 4 studenter fra 3 studie år fra fysio- og ergoterapeututdanningen ved Høgskolen i Oslo og ferdig utdannede representanter fra de to yrkesgruppene med minst 5 års yrkeserfaring vil være informanter for å få innblikk i hva som kjennetegner de to ulike yrkesgruppene. Det er ønskelig med en lik fordeling av kjønn.

*Problemstillinger:* Hva kjennetegner ergo- og fysioterapi som profesjoner? Hva karakteriserer ergo- og fysioterapifaglig kompetanse (kunnskap, ferdigheter, holdninger og verdier)? Hva oppfattes som de viktigste likheter og ulikheter mellom disse profesjonene?

*Formål:* Ut fra intervjuene vil det bli utarbeidet et instrument som inneholder spørsmål/påstander om studentene sine kunnskaper om den andre profesjonsgruppens kompetanse og oppfattelse av egen yrkesidentitet.

*Hypotese:* Tverrfaglig sosialisering vil endre studentenes yrkesspesifikke identitet.

#### Spørsmål til alle informanter:

- Hvorfor bestemte du deg for å bli ergoterapeut?
  - Hva slags kompetanse mener du er viktig for å praktisere/ arbeide som ergoterapeut? Med kompetanse menes ferdigheter, kunnskap, holdninger og verdier.
  - Hva betyr det for deg å være og handle som en ergoterapeut?
  - Hvilke normer og regler oppfatter du er knyttet til yrket?
  - Hva synes du er det mest meningsfulle med ditt arbeid som ergoterapeut?
  - Hva mener du særpreger en ergoterapeut?
  - Kan du beskrive en situasjon der du følte du brukte din profesjonelle kompetanse som ergoterapeut?
  - I visse sammenhenger hevdes det at ergo- og fysioterapeuter har overlappende oppgaver knyttet til pasient/klient. Hvis du mener at dette er riktig, hvilke arbeidsområder kan dette omfatte?
  - Hvis du er enig: Hvilke likheter ser du mellom ergoterapifaget og fysioterapifaget?
- Uansett:
- Hva mener du kjennetegner fysioterapifaget?
  - Hva skiller ergoterapifaget fra fysioterapifaget?



Kodenummer 

**Betydningen av felles vektall i helsefag. Tverrfaglig undervisning: implikasjoner ved sosialiseringssprosess og identitetsutvikling i helsefag.**

Bakgrunn for denne undersøkelsen er å evaluere innføring av felles vektall i rammeplan for helse- og sosialfagutdanninger. Formålet er blant annet å få kunnskap om hvordan tverrfaglig undervisning påvirker studentenes profesjonelle identitet. Hensikten er å belyse følgende spørsmål:

- *I hvilke grad har innføring av felles vektall i helsefag ført til tverrfaglig kompetanse hos studenter.*
- *Vil tverrfaglig undervisning endre studentenes profesjonelle identitet?*

Deltakelse i undersøkelsen er frivillig. Opplegget i samsvar med de krav Datatilsynet stiller. Dette innebærer blant annet at svarene dine blir behandlet konfidensielt. Resultatene som blir offentliggjort, vil ikke kunne knyttes til enkeltpersoner.

Med vennlig hilsen og på forhånd takk for hjelpen.

Synnøve Hofseth Almås  
Bioingeniør, cand. polit og dr. grad student ved Universitet i Bergen  
Høgskolen i Ålesund

### Bakgrunnsdata

1. Hvor gammel er du?

.....år

2. Kjønn:

- Mann  
 Kvinne

3. Hvilke studieretning har du fra videregående skole?

- Almen faglig  
 Helse- og sosialfag  
 Handelsfag  
 Annen evt. hvilken .....

4. Har du yrkeserfaring, i størrelsesorden minst 50 % stilling, fra helsevesenet før du startet helsefagutdanning?

- Ja  
 Nei

Til sammen, hvor lenge arbeidet du?

.....år ..... måneder

Hva arbeidet du med? (Kryss eventuelt for begge alternativer).

- Pasientrettet arbeid (for eksempel hjelpepleier, ambulanse osv)  
 Ikke- pasientrettet arbeid (for eksempel kjøkkenassistent, sentralforsyningen osv)

5. Har du arbeidet i helsevesenet, parallelt med studiene?

- Ja  
 Nei

Hvis ja (kryss eventuelt for begge alternativene):

- Sommerjobb. Til sammen hvor mange måneder arbeidet du? .... måneder.  
 I løpet av studieåret. Til sammen hvor mange uker arbeidet du ? (1 uke tilsvarer ca 37 timer). .....uker

Hva har du arbeidet med ? (Kryss eventuelt for begge alternativer).

- Pasientrettet arbeid (for eksempel hjelpepleier, ambulanse osv)  
 Ikke- pasientrettet arbeid (for eksempel kjøkkenassistent, sentralforsyningen osv)

Her kommer en del påstander som angår ergoterapeutfaget. Jeg spør deg om i hvilke grad du er enig eller uenig i dem.

En del påstander kan likne på hverandre. Det er viktig at du fyller ut alle påstandene. Sett en ring rund det tallet som uttrykker din oppfatning. Ikke tenk for lenge på hvert utsagn, svar spontant!

	Uenig					Enig
1. Som ergoterapeut er det viktig å bevisstgjøre pasienten om egen kropp	1	2	3	4	5	6
2. Som ergoterapeut er det viktig at pasientens funksjon blir slik at han/hun kan klare seg best mulig selv i dagliglivet	1	2	3	4	5	6
3. Som ergoterapeut er det viktig å informere pasient og pårørende om hva han/hun kan mestre selv	1	2	3	4	5	6
4. Ved forflytninger er det viktig å finne frem til det pasienten kan mestre/klare selv	1	2	3	4	5	6
5. Det er viktigere at pasienten bruker sine egne ressurser isteden for å ta i bruk hjelpemidler	1	2	3	4	5	6
6. Som ergoterapeut er det viktig å være oppmerksom på hvordan omgivelser (hjem, arbeid, samfunn) påvirker pasienten	1	2	3	4	5	6
7. Som ergoterapeut er det viktig å tilpasse pasienten til omgivelsene (hjem, arbeid, samfunn)	1	2	3	4	5	6
8. Som ergoterapeut er det mindre viktig å tilpasse omgivelsene (hjem, arbeid, samfunn) til pasienten	1	2	3	4	5	6
9. Som ergoterapeut er det viktig å vite at mennesket utvikles gjennom aktivitet som oppleves meningsfull	1	2	3	4	5	6
10. Som ergoterapeut er det viktig å ta utgangspunkt i aktiviteter knyttet til pasientens daglige gjøremål	1	2	3	4	5	6

*Her kommer en del påstander som angår fysioterapeutfaget. Jeg spør deg om i hvilke grad du er enig eller uenig i dem. En del påstander kan likne på hverandre. Det er viktig at du fyller ut alle påstandene.*

*Sett en ring rund det tallet som uttrykker din oppfatning.  
Ikke tenk for lenge på hvert utsagn, svar spontant!*

	Uenig					Enig
11. Fysioterapeuten trenger å se mennesket i relasjon til samfunnet	1	2	3	4	5	6
12. Fysioterapeuten må kjenne til hvilke kognitive begrensninger en funksjonshemming kan gi	1	2	3	4	5	6
13. Fysioterapeuten må kjenne til hvilke motoriske begrensninger en funksjonshemming kan innebære	1	2	3	4	5	6
14. Fysioterapeuten må kunne kartlegge finmotorikken hos menneske	1	2	3	4	5	6
15. Fysioterapeuten må kunne måle leddutslag og styrke	1	2	3	4	5	6
16. Fysioterapeuten må kunne utføre ganganalyse	1	2	3	4	5	6
17. Fysioterapeuten må bedre pasientens bevegelsesapparat ved trening	1	2	3	4	5	6
18. Fysioterapeuten må tenke forebyggende	1	2	3	4	5	6
19. Fysioterapeuten oppfatter seg mer som en pedagog enn som en terapeut	1	2	3	4	5	6
20. Fysioterapeuten må tilrettelegge hjelpemidler	1	2	3	4	5	6

**Takk for hjelpen!**

## List of codes Bergen/Stockholm

Question	Code 4 categories	Code 3 categories	Content
1.	Codenr		
2.	Bergen University		City
CIT	College =1 Karolinska Institutet = 2		
3.	Occupational therapist (OT) = 1 Physiotherapist(PT) =2		Profession
PRO			
4.	Man = 1 Woman = 2		Gender
SEX			
5.	Traditional = 1 Health and social=2 Other = 3		Which section do you have in secondary school?
STU			
6.	Yes = 1 No = 2		Do you have professional experience, at least 50% job, in health care before study?
EXB			
7.	2-7 month =1 9-24 = 2 36-264 = 3		All together, for how long have you been working?
LEN			
8.	Yes =1 No =2		Your work experience has been (you may mark against both alternatives):
PAB			<ul style="list-style-type: none"> <li>- patient related (for example enrolled nurse, ambulance)</li> <li>- not patient related (for example assistant in the kitchen, central agency)</li> </ul>
9.	Yes = 1 No = 2		Have you worked in health care parallel with study
EXP			
10.	Yes = 1 No =2		If yes, (you may mark against both alternatives). Summer job
SUM			
11.	1-2 months = 1 3-5 months = 2 6-12 months =3		Duration of summer job. In all, for how many months did you worked?
MON			
12.	Yes = 1 No = 2		During the study.
DUR			
13.	1-4 =1 5-8 = 2 9-15=3		In all how many weeks did you worked?
WEK			
14.	Yes = 1 No = 2		Your work experience has been (you may mark against both alternatives):
PAP			<ul style="list-style-type: none"> <li>- patient related (for example enrolled nurse, ambulance)</li> <li>- not patient related (for example assistant in the kitchen, central agency)</li> </ul>

15.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is important to make the patient aware of his/her own body.
16.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is important that the patient can do most things for him/herself in their daily life.
17.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is important to inform the patient and his/her family of what he/she can or cannot do
18.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	In moving around it is important to find out what the patient can do or cannot do
19.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	It is important that the patient help themselves rather than using facility/ remedies
20.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is important to find out how things around (i.e. home, work, surroundings areas) affect the patient
21.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is important to make the patient to adapt to his/her environment (i.e. home, work, surroundings areas)
22.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is less important to adapt the environments (i.e. home, work, surroundings areas) to the patient
23.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is important to know that people develop through activities that seem to be meaningful
24.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	As an OT it is important to base the patient's activity things which he/she needs to do in their daily life
25.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	The PT must see people in relation to society
26.	Strongly agree = 1 Mildly agree = 2 Mildly disagree = 3 Strongly disagree = 4	Strongly agree = 1 Mildly agree = 2 Disagree = 3	The PT must know which cognitive limitation result from a disability
27.	Strongly agree = 1 Mildly agree = 2	Strongly agree = 1 Mildly agree = 2	The PT must know which movement limitations result from a disability



	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
28.	Strongly agree = 1	Strongly agree = 1	The PT must analyse patient's fine movement technique
FIN	Mildly agree = 2	Mildly agree = 2	
	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
29.	Strongly agree = 1	Strongly agree = 1	The PT must measure range of motion and muscle strength
MUS	Mildly agree = 2	Mildly agree = 2	
	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
30.	Strongly agree = 1	Strongly agree = 1	The PT must perform a gait/walking analysis
GAI	Mildly agree = 2	Mildly agree = 2	
	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
31.	Strongly agree = 1	Strongly agree = 1	The PT must improve the patient's mobility by exercise
EXE	Mildly agree = 2	Mildly agree = 2	
	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
32.	Strongly agree = 1	Strongly agree = 1	The PT must think more preventively
PRE	Mildly agree = 2	Mildly agree = 2	
	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
33.	Strongly agree = 1	Strongly agree = 1	The PT perceives him/herself more as an educationist/teacher rather than a therapist
TEA	Mildly agree = 2	Mildly agree = 2	
	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
34.	Strongly agree = 1	Strongly agree = 1	The PT must adjust needed facilities
ADJ	Mildly agree = 2	Mildly agree = 2	
	Mildly disagree = 3	Disagree = 3	
	Strongly disagree = 4		
35.	21-25 = 1		Age
AGE	26-30 = 2		
	31>- = 3		
36.	OT Bergen=1		After professions and place to study
PRC	PT Bergen=2		
	OT Stockholm=3		
	PT Stockholm =4		
37.	Traditional=1		Which section do you attend at upper secondary school?
HIG	Occupational=2		

A description of the answers in questionnaire C

## Background data

<i>Place to study</i>	N	%
Bergen University College	68	47.2
Karolinska Institute Stockholm	76	52.8
Total	144	100.0

<i>Profession</i>	N	%
Occupational therapist	54	37.5
Physiotherapist	90	62.5
Total	144	100.0

<i>Gender</i>	N	%
Men	24	17.0
Women	117	83.0
Total	142	100.0

<i>Age</i>	N	%
21 – 25	80	56.3
26-30	27	19.0
> 31	35	24.7
Total	142	100.0

<i>Which section of study in upper secondary school do you have?</i>	N	%
Traditional	97	67.8
Occupational	46	32.2
Total	143	100.0

\* Recoded: Health and social + other

<i>Do you have professional experience, at least 50% job, in health care before study?</i>	N	%
Yes	43	30.3
No	99	69.7
Total	142	100.0

<i>All together, for how long have you been working (before study)?</i>	N	%
2-7 month	12	27.9
9-24	13	30.2
36-264	18	41.9
Total	43	100.0

<i>Your work experience has been (you may mark against both alternatives):</i>	N	%
- <i>patient related (for example enrolled nurse, ambulance)</i>		
- <i>not patient related (for example assistant in the kitchen, central agency)</i>		
Working with patient	42	97.7
Not working with patient	1	2.3
Total	43	100.0

<i>Have you worked in health care parallel with study?</i>	N	%
Yes	89	62.2
No	54	37.8
Total	143	100.0

<i>Professional experience in summertime (during the study)</i>	N	%
Yes	89	62.2
No	54	37.3
Total	143	100.0

<i>Duration of summer job (during the study). In all, for how many months did you worked?</i>	N	%
1-2 month	30	36.1
3-5	28	33.8
6-12	25	30.1

Total	83	100.0
<i>Professional experience during the semester (during the study)</i>		
Yes	43	29.9
No	101	70.1
Total	144	100.0

<i>Duration of work experience parallel with study</i>		
1-4 weeks	11	31.4
5-8	11	31.4
9-15	13	37.2
Total	35	100.0

<i>Your work experience has been (you may mark against both alternatives):</i>	N	%
- <i>patient related (for example enrolled nurse, ambulance)</i>		
- <i>not patient related (for example assistant in the kitchen, central agency)</i>		
Working with patient	87	97.8
Not working with patient	2	2.2
Total	89	100.0

*Perceptions of occupational therapist (OT) and physiotherapist (PT). I ask you to which extent you agree or disagree with the following statements:*

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Codes being used:	Grouping the answers:
1. Strongly agree	Strongly agree
2. Mostly agree	
3. Somewhat agree	Mildly agree
4. Somewhat disagree	
5. Mostly disagree	Mildly disagree
6. Strongly disagree	Strongly disagree

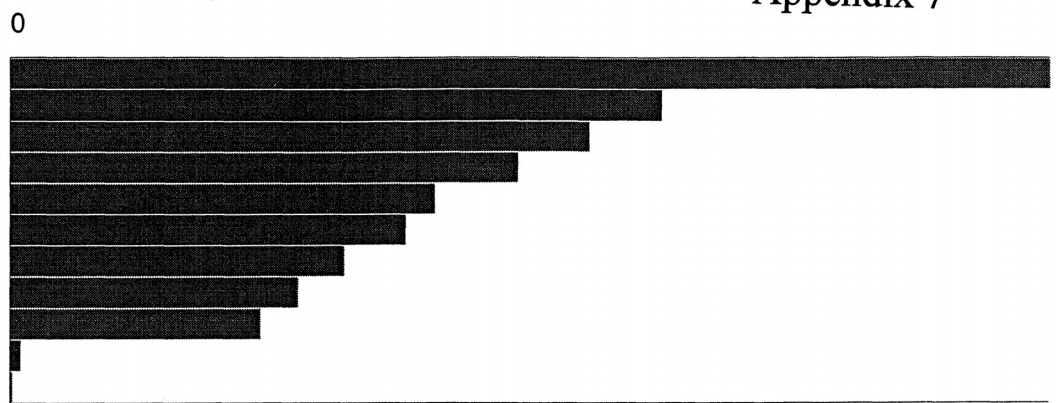
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Eigenvalues of: sd250805

Appendix 7

n	Value	Percent	Sum
1	0.4241	23.43	23.43
2	0.2620	14.48	37.91
3	0.2330	12.88	50.79
4	0.2046	11.30	62.09
5	0.1712	9.46	71.55
6	0.1593	8.80	80.35
7	0.1344	7.43	87.78
8	0.1157	6.39	94.17
9	0.1004	5.55	99.72
10	0.0043	0.24	99.95
11	0.0008	0.05	100.00



Total variance = 1.8

sd250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
UND_1+	0,62857	0,16049	0,02294	0,34771	0,46733	0,04575	0,15507	0,09295	0,01473	0,08014	0,02483	0,00442
UND_2+	0,59203	0,02998	0,09394	-1,78744	0,56342	0,22587	-0,08327	0,00122	0,00079	0,20715	0,00757	0,00552
UND_3+	0,80257	0,01058	0,10466	-0,11855	0,00079	0,00035	-2,07110	0,23963	0,17322	-1,80283	0,18158	0,14759
OCC_1+	0,51617	0,07231	0,07055	0,30461	0,05255	0,01582	-0,83718	0,39690	0,19341	0,13061	0,00966	0,00529
OCC_2+	0,64122	0,06878	0,07321	0,66767	0,23141	0,07230	0,82279	0,35144	0,17770	-0,29212	0,04430	0,02519
OCC_3+	0,60159	0,05820	0,07835	-1,18297	0,57439	0,19205	0,07338	0,00221	0,00120	0,17186	0,01212	0,00738
ROL_1+	0,58724	0,14815	0,02986	0,32283	0,28574	0,03641	0,14581	0,05829	0,01202	-0,27190	0,20270	0,04700
ROL_2+	0,71109	0,03351	0,09199	-0,46335	0,04321	0,01696	-1,11149	0,24865	0,15798	1,43889	0,41671	0,29772
ROL_3+	0,51444	0,01940	0,09979	-1,61551	0,28036	0,11939	0,83079	0,07414	0,05110	-0,40921	0,01799	0,01394
DTU_1+	0,66343	0,09700	0,05691	0,19032	0,03411	0,00828	-0,52723	0,26179	0,10290	-0,55020	0,28510	0,12601
DTU_2+	0,66657	0,06349	0,07543	0,42459	0,08385	0,02699	0,54935	0,14037	0,07312	0,93354	0,40534	0,23745
DTU_3+	0,42977	0,03704	0,09004	-1,27969	0,37218	0,14301	0,39182	0,03489	0,02170	-0,14155	0,00455	0,00318
PRF_1+	0,67001	0,06349	0,07747	0,66989	0,20321	0,06718	-0,23596	0,02521	0,01349	0,44620	0,09016	0,05425
PRF_2+	0,67275	0,13757	0,03485	-0,30221	0,19920	0,02963	0,11235	0,02753	0,00663	-0,20597	0,09253	0,02504



**sd250805: factors for principal variables**

	Axis: 4					
	Qlt	Weight	Inr	Coord	Cor	Ctr
UND_1+	0,62857	0,16049	0,02294	0,10604	0,04347	0,00882
UND_2+	0,59203	0,02998	0,09394	0,33518	0,01981	0,01647
UND_3+	0,80257	0,01058	0,10466	-2,61004	0,38057	0,35242
OCC_1+	0,51617	0,07231	0,07055	0,31746	0,05707	0,03563
OCC_2+	0,64122	0,06878	0,07321	-0,16462	0,01407	0,00911
OCC_3+	0,60159	0,05820	0,07835	-0,17706	0,01287	0,00892
ROL_1+	0,58724	0,14815	0,02986	0,12154	0,04050	0,01070
ROL_2+	0,71109	0,03351	0,09199	0,11177	0,00251	0,00205
ROL_3+	0,51444	0,01940	0,09979	-1,14955	0,14195	0,12533
DTU_1+	0,66343	0,09700	0,05691	0,29585	0,08243	0,04151
DTU_2+	0,66657	0,06349	0,07543	-0,28209	0,03701	0,02470
DTU_3+	0,42977	0,03704	0,09004	-0,28254	0,01814	0,01445
PRF_1+	0,67001	0,06349	0,07747	-0,88095	0,35143	0,24089
PRF_2+	0,67275	0,13757	0,03485	0,40259	0,35349	0,10900

sd250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
UND_2+	0,59203	0,02998	0,09394	-1,78744	0,56342	0,22587	-0,08327	0,00122	0,00079	0,20715	0,00757	0,00552
OCC_3+	0,60159	0,05820	0,07835	-1,18297	0,57439	0,19205	0,07338	0,00221	0,00120	0,17186	0,01212	0,00738
DTU_3+	0,42977	0,03704	0,09004	-1,27969	0,37218	0,14301	0,39182	0,03489	0,02170	-0,14155	0,00455	0,00318
ROL_3+	0,51444	0,01940	0,09979	-1,61551	0,28036	0,11939	0,83079	0,07414	0,05110	-0,40921	0,01799	0,01394
OCC_2+	0,64122	0,06878	0,07321	0,66767	0,23141	0,07230	0,82279	0,35144	0,17770	-0,29212	0,04430	0,02519
PRF_1+	0,67001	0,06349	0,07747	0,66989	0,20321	0,06718	-0,23596	0,02521	0,01349	0,44620	0,09016	0,05425
UND_1+	0,62857	0,16049	0,02294	0,34771	0,46733	0,04575	0,15507	0,09295	0,01473	0,08014	0,02483	0,00442
ROL_1+	0,58724	0,14815	0,02986	0,32283	0,28574	0,03641	0,14581	0,05829	0,01202	-0,27190	0,20270	0,04700
PRF_2+	0,67275	0,13757	0,03485	-0,30221	0,19920	0,02963	0,11235	0,02753	0,00663	-0,20597	0,09253	0,02504
DTU_2+	0,66657	0,06349	0,07543	0,42459	0,08385	0,02699	0,54935	0,14037	0,07312	0,93354	0,40534	0,23745
ROL_2+	0,71109	0,03351	0,09199	-0,46335	0,04321	0,01696	-1,11149	0,24865	0,15798	1,43889	0,41671	0,29772
OCC_1+	0,51617	0,07231	0,07055	0,30461	0,05255	0,01582	-0,83718	0,39690	0,19341	0,13061	0,00966	0,00529
DTU_1+	0,66343	0,09700	0,05691	0,19032	0,03411	0,00828	-0,52723	0,26179	0,10290	-0,55020	0,28510	0,12601
UND_3+	0,80257	0,01058	0,10466	-0,11855	0,00079	0,00035	-2,07110	0,23963	0,17322	-1,80283	0,18158	0,14759

sd250805: factors for principal variables

	Axis: 4					
	Qlt	Weight	Inr	Coord	Cor	Ctr
UND_2+	0,59203	0,02998	0,09394	0,33518	0,01981	0,01647
OCC_3+	0,60159	0,05820	0,07835	-0,17706	0,01287	0,00892
DTU_3+	0,42977	0,03704	0,09004	-0,28254	0,01814	0,01445
ROL_3+	0,51444	0,01940	0,09979	-1,14955	0,14195	0,12533
OCC_2+	0,64122	0,06878	0,07321	-0,16462	0,01407	0,00911
PRF_1+	0,67001	0,06349	0,07747	-0,88095	0,35143	0,24089
UND_1+	0,62857	0,16049	0,02294	0,10604	0,04347	0,00882
ROL_1+	0,58724	0,14815	0,02986	0,12154	0,04050	0,01070
PRF_2+	0,67275	0,13757	0,03485	0,40259	0,35349	0,10900
DTU_2+	0,66657	0,06349	0,07543	-0,28209	0,03701	0,02470
ROL_2+	0,71109	0,03351	0,09199	0,11177	0,00251	0,00205
OCC_1+	0,51617	0,07231	0,07055	0,31746	0,05707	0,03563
DTU_1+	0,66343	0,09700	0,05691	0,29585	0,08243	0,04151
UND_3+	0,80257	0,01058	0,10466	-2,61004	0,38057	0,35242

sd250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
OCC_1+	0,51617	0,07231	0,07055	0,30461	0,05255	0,01582	-0,83718	0,39690	0,19341	0,13061	0,00966	0,00529
OCC_2+	0,64122	0,06878	0,07321	0,66767	0,23141	0,07230	0,82279	0,35144	0,17770	-0,29212	0,04430	0,02519
UND_3+	0,80257	0,01058	0,10466	-0,11855	0,00079	0,00035	-2,07110	0,23963	0,17322	-1,80283	0,18158	0,14759
ROL_2+	0,71109	0,03351	0,09199	-0,46335	0,04321	0,01696	-1,11149	0,24865	0,15798	1,43889	0,41671	0,29772
DTU_1+	0,66343	0,09700	0,05691	0,19032	0,03411	0,00828	-0,52723	0,26179	0,10290	-0,55020	0,28510	0,12601
DTU_2+	0,66657	0,06349	0,07543	0,42459	0,08385	0,02699	0,54935	0,14037	0,07312	0,93354	0,40534	0,23745
ROL_3+	0,51444	0,01940	0,09979	-1,61551	0,28036	0,11939	0,83079	0,07414	0,05110	-0,40921	0,01799	0,01394
DTU_3+	0,42977	0,03704	0,09004	-1,27969	0,37218	0,14301	0,39182	0,03489	0,02170	-0,14155	0,00455	0,00318
UND_1+	0,62857	0,16049	0,02294	0,34771	0,46733	0,04575	0,15507	0,09295	0,01473	0,08014	0,02483	0,00442
PRF_1+	0,67001	0,06349	0,07747	0,66989	0,20321	0,06718	-0,23596	0,02521	0,01349	0,44620	0,09016	0,05425
ROL_1+	0,58724	0,14815	0,02986	0,32283	0,28574	0,03641	0,14581	0,05829	0,01202	-0,27190	0,20270	0,04700
PRF_2+	0,67275	0,13757	0,03485	-0,30221	0,19920	0,02963	0,11235	0,02753	0,00663	-0,20597	0,09253	0,02504
OCC_3+	0,60159	0,05820	0,07835	-1,18297	0,57439	0,19205	0,07338	0,00221	0,00120	0,17186	0,01212	0,00738
UND_2+	0,59203	0,02998	0,09394	-1,78744	0,56342	0,22587	-0,08327	0,00122	0,00079	0,20715	0,00757	0,00552

sd250805: factors for principal variables

	Axis: 4					
	Qlt	Weight	Inr	Coord	Cor	Ctr
OCC_1+	0,51617	0,07231	0,07055	0,31746	0,05707	0,03563
OCC_2+	0,64122	0,06878	0,07321	-0,16462	0,01407	0,00911
UND_3+	0,80257	0,01058	0,10466	-2,61004	0,38057	0,35242
ROL_2+	0,71109	0,03351	0,09199	0,11177	0,00251	0,00205
DTU_1+	0,66343	0,09700	0,05691	0,29585	0,08243	0,04151
DTU_2+	0,66657	0,06349	0,07543	-0,28209	0,03701	0,02470
ROL_3+	0,51444	0,01940	0,09979	-1,14955	0,14195	0,12533
DTU_3+	0,42977	0,03704	0,09004	-0,28254	0,01814	0,01445
UND_1+	0,62857	0,16049	0,02294	0,10604	0,04347	0,00882
PRF_1+	0,67001	0,06349	0,07747	-0,88095	0,35143	0,24089
ROL_1+	0,58724	0,14815	0,02986	0,12154	0,04050	0,01070
PRF_2+	0,67275	0,13757	0,03485	0,40259	0,35349	0,10900
OCC_3+	0,60159	0,05820	0,07835	-0,17706	0,01287	0,00892
UND_2+	0,59203	0,02998	0,09394	0,33518	0,01981	0,01647

sd250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
ROL_2+	0,71109	0,03351	0,09199	-0,46335	0,04321	0,01696	-1,11149	0,24865	0,15798	1,43889	0,41671	0,29772
DTU_2+	0,66657	0,06349	0,07543	0,42459	0,08385	0,02699	0,54935	0,14037	0,07312	0,93354	0,40534	0,23745
UND_3+	0,80257	0,01058	0,10466	-0,11855	0,00079	0,00035	-2,07110	0,23963	0,17322	-1,80283	0,18158	0,14759
DTU_1+	0,66343	0,09700	0,05691	0,19032	0,03411	0,00828	-0,52723	0,26179	0,10290	-0,55020	0,28510	0,12601
PRF_1+	0,67001	0,06349	0,07747	0,66989	0,20321	0,06718	-0,23596	0,02521	0,01349	0,44620	0,09016	0,05425
ROL_1+	0,58724	0,14815	0,02986	0,32283	0,28574	0,03641	0,14581	0,05829	0,01202	-0,27190	0,20270	0,04700
OCC_2+	0,64122	0,06878	0,07321	0,66767	0,23141	0,07230	0,82279	0,35144	0,17770	-0,29212	0,04430	0,02519
PRF_2+	0,67275	0,13757	0,03485	-0,30221	0,19920	0,02963	0,11235	0,02753	0,00663	-0,20597	0,09253	0,02504
ROL_3+	0,51444	0,01940	0,09979	-1,61551	0,28036	0,11939	0,83079	0,07414	0,05110	-0,40921	0,01799	0,01394
OCC_3+	0,60159	0,05820	0,07835	-1,18297	0,57439	0,19205	0,07338	0,00221	0,00120	0,17186	0,01212	0,00738
UND_2+	0,59203	0,02998	0,09394	-1,78744	0,56342	0,22587	-0,08327	0,00122	0,00079	0,20715	0,00757	0,00552
OCC_1+	0,51617	0,07231	0,07055	0,30461	0,05255	0,01582	-0,83718	0,39690	0,19341	0,13061	0,00966	0,00529
UND_1+	0,62857	0,16049	0,02294	0,34771	0,46733	0,04575	0,15507	0,09295	0,01473	0,08014	0,02483	0,00442
DTU_3+	0,42977	0,03704	0,09004	-1,27969	0,37218	0,14301	0,39182	0,03489	0,02170	-0,14155	0,00455	0,00318

sd250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 4		
				Coord	Cor	Ctr
ROL_2+	0,71109	0,03351	0,09199	0,11177	0,00251	0,00205
DTU_2+	0,66657	0,06349	0,07543	-0,28209	0,03701	0,02470
UND_3+	0,80257	0,01058	0,10466	-2,61004	0,38057	0,35242
DTU_1+	0,66343	0,09700	0,05691	0,29585	0,08243	0,04151
PRF_1+	0,67001	0,06349	0,07747	-0,88095	0,35143	0,24089
ROL_1+	0,58724	0,14815	0,02986	0,12154	0,04050	0,01070
OCC_2+	0,64122	0,06878	0,07321	-0,16462	0,01407	0,00911
PRF_2+	0,67275	0,13757	0,03485	0,40259	0,35349	0,10900
ROL_3+	0,51444	0,01940	0,09979	-1,14955	0,14195	0,12533
OCC_3+	0,60159	0,05820	0,07835	-0,17706	0,01287	0,00892
UND_2+	0,59203	0,02998	0,09394	0,33518	0,01981	0,01647
OCC_1+	0,51617	0,07231	0,07055	0,31746	0,05707	0,03563
UND_1+	0,62857	0,16049	0,02294	0,10604	0,04347	0,00882
DTU_3+	0,42977	0,03704	0,09004	-0,28254	0,01814	0,01445

sd250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
UND_3+	0,80257	0,01058	0,10466	-0,11855	0,00079	0,00035	-2,07110	0,23963	0,17322	-1,80283	0,18158	0,14759
PRF_1+	0,67001	0,06349	0,07747	0,66989	0,20321	0,06718	-0,23596	0,02521	0,01349	0,44620	0,09016	0,05425
ROL_3+	0,51444	0,01940	0,09979	-1,61551	0,28036	0,11939	0,83079	0,07414	0,05110	-0,40921	0,01799	0,01394
PRF_2+	0,67275	0,13757	0,03485	-0,30221	0,19920	0,02963	0,11235	0,02753	0,00663	-0,20597	0,09253	0,02504
DTU_1+	0,66343	0,09700	0,05691	0,19032	0,03411	0,00828	-0,52723	0,26179	0,10290	-0,55020	0,28510	0,12601
OCC_1+	0,51617	0,07231	0,07055	0,30461	0,05255	0,01582	-0,83718	0,39690	0,19341	0,13061	0,00966	0,00529
DTU_2+	0,66657	0,06349	0,07543	0,42459	0,08385	0,02699	0,54935	0,14037	0,07312	0,93354	0,40534	0,23745
UND_2+	0,59203	0,02998	0,09394	-1,78744	0,56342	0,22587	-0,08327	0,00122	0,00079	0,20715	0,00757	0,00552
DTU_3+	0,42977	0,03704	0,09004	-1,27969	0,37218	0,14301	0,39182	0,03489	0,02170	-0,14155	0,00455	0,00318
ROL_1+	0,58724	0,14815	0,02986	0,32283	0,28574	0,03641	0,14581	0,05829	0,01202	-0,27190	0,20270	0,04700
OCC_2+	0,64122	0,06878	0,07321	0,66767	0,23141	0,07230	0,82279	0,35144	0,17770	-0,29212	0,04430	0,02519
OCC_3+	0,60159	0,05820	0,07835	-1,18297	0,57439	0,19205	0,07338	0,00221	0,00120	0,17186	0,01212	0,00738
UND_1+	0,62857	0,16049	0,02294	0,34771	0,46733	0,04575	0,15507	0,09295	0,01473	0,08014	0,02483	0,00442
ROL_2+	0,71109	0,03351	0,09199	-0,46335	0,04321	0,01696	-1,11149	0,24865	0,15798	1,43889	0,41671	0,29772



sd250805: factors for principal variables

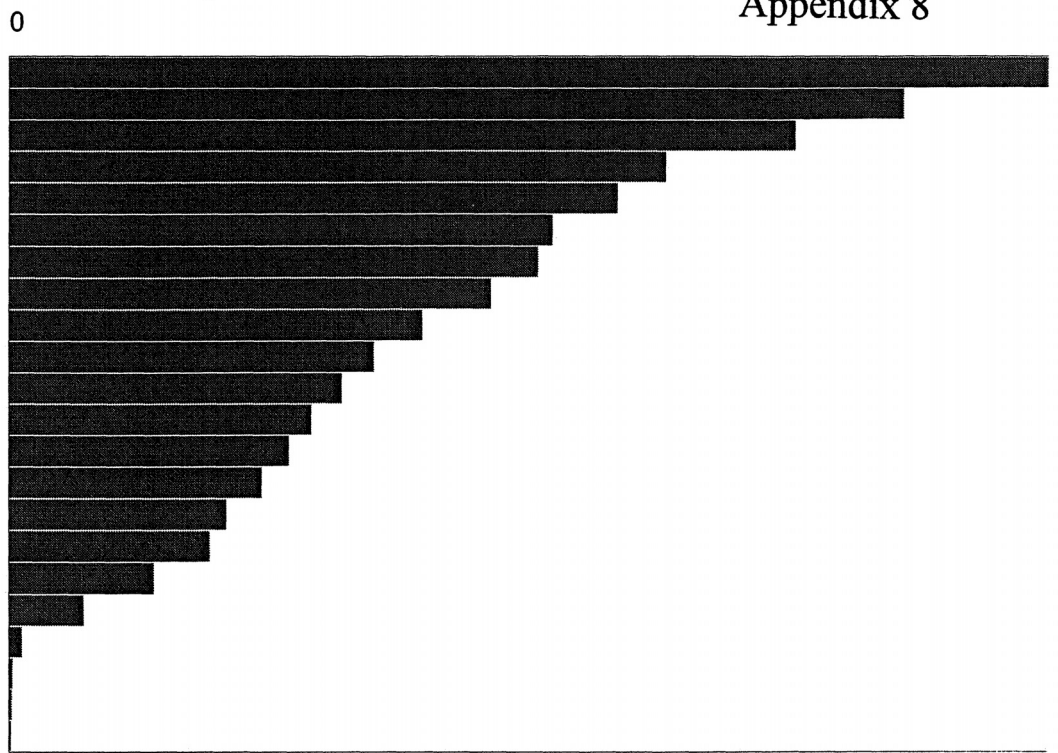
	Axis: 4					
	Qlt	Weight	Inr	Coord	Cor	Ctr
UND_3+	0,80257	0,01058	0,10466	-2,61004	0,38057	0,35242
PRF_1+	0,67001	0,06349	0,07747	-0,88095	0,35143	0,24089
ROL_3+	0,51444	0,01940	0,09979	-1,14955	0,14195	0,12533
PRF_2+	0,67275	0,13757	0,03485	0,40259	0,35349	0,10900
DTU_1+	0,66343	0,09700	0,05691	0,29585	0,08243	0,04151
OCC_1+	0,51617	0,07231	0,07055	0,31746	0,05707	0,03563
DTU_2+	0,66657	0,06349	0,07543	-0,28209	0,03701	0,02470
UND_2+	0,59203	0,02998	0,09394	0,33518	0,01981	0,01647
DTU_3+	0,42977	0,03704	0,09004	-0,28254	0,01814	0,01445
ROL_1+	0,58724	0,14815	0,02986	0,12154	0,04050	0,01070
OCC_2+	0,64122	0,06878	0,07321	-0,16462	0,01407	0,00911
OCC_3+	0,60159	0,05820	0,07835	-0,17706	0,01287	0,00892
UND_1+	0,62857	0,16049	0,02294	0,10604	0,04347	0,00882
ROL_2+	0,71109	0,03351	0,09199	0,11177	0,00251	0,00205



Eigenvalues of: bs250805

Appendix 8

n	Value	Percent	Sum
1	0.2959	12.94	12.94
2	0.2511	10.99	23.93
3	0.2203	9.64	33.57
4	0.1839	8.05	41.62
5	0.1705	7.46	49.07
6	0.1524	6.67	55.74
7	0.1483	6.49	62.23
8	0.1352	5.92	68.15
9	0.1159	5.07	73.21
10	0.1023	4.47	77.69
11	0.0932	4.08	81.77
12	0.0847	3.70	85.47
13	0.0782	3.42	88.89
14	0.0706	3.09	91.98
15	0.0607	2.66	94.63
16	0.0560	2.45	97.09
17	0.0403	1.76	98.85
18	0.0207	0.91	99.75
19	0.0036	0.16	99.91
20	0.0009	0.04	99.95
21	0.0007	0.03	99.98
22	0.0005	0.02	100.00



Total variance = 2.3

bs250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
PRC_1+	0,54768	0,02564	0,04375	1,38148	0,48937	0,16539	0,47160	0,05703	0,02271	0,07056	0,00128	0,00058
ADJ_1+	0,43364	0,02839	0,04252	1,17013	0,39994	0,13137	0,30532	0,02723	0,01054	-0,14887	0,00647	0,00286
REL_3+	0,33168	0,01190	0,04948	1,69975	0,30412	0,11624	0,49034	0,02531	0,01140	-0,14634	0,00225	0,00116
FIT_3+	0,58427	0,04029	0,03873	0,81004	0,29867	0,08936	0,17521	0,01397	0,00493	0,77249	0,27163	0,10913
REL_1+	0,58490	0,05311	0,03347	-0,69615	0,33645	0,08700	0,23738	0,03912	0,01192	0,54910	0,20933	0,07269
ADJ_3+	0,25755	0,02198	0,04735	-1,04071	0,21994	0,08045	0,39018	0,03091	0,01332	-0,18160	0,00670	0,00329
AWA_1+	0,45989	0,04121	0,04048	-0,75568	0,25434	0,07953	0,67909	0,20540	0,07567	0,01827	0,00015	0,00006
FIN_3+	0,16696	0,02289	0,04717	0,83708	0,14878	0,05422	-0,26454	0,01486	0,00638	-0,12502	0,00332	0,00162
AWA_2+	0,25676	0,06227	0,03045	0,45347	0,18396	0,04328	0,05933	0,00315	0,00087	-0,27904	0,06965	0,02201
FIT_1+	0,25578	0,04304	0,03881	-0,53327	0,13795	0,04137	0,45361	0,09982	0,03526	-0,19267	0,01801	0,00725
PRC_4+	0,58655	0,04579	0,03700	-0,43111	0,10063	0,02876	-0,75699	0,31025	0,10447	-0,56962	0,17567	0,06743
REL_2+	0,39820	0,05678	0,03363	0,32768	0,07931	0,02060	-0,56729	0,23771	0,07275	-0,33150	0,08117	0,02832
PRC_3+	0,49743	0,02381	0,05845	-0,49755	0,04412	0,01992	1,34512	0,32243	0,17153	-0,85700	0,13088	0,07937
FIN_2+	0,17512	0,06319	0,03123	-0,24560	0,05339	0,01288	-0,36736	0,11945	0,03395	-0,05077	0,00228	0,00074
FAC_3+	0,23949	0,01465	0,05033	-0,44774	0,02553	0,00993	-0,90829	0,10508	0,04813	0,92457	0,10888	0,05685
FIT_2+	0,31975	0,04304	0,03951	-0,23426	0,02615	0,00798	-0,39337	0,07374	0,02652	-0,67924	0,21986	0,09013
PRC_2+	0,51266	0,03663	0,04413	-0,19295	0,01352	0,00461	-0,19616	0,01397	0,00561	1,15587	0,48517	0,22212
ADA_2+	0,03758	0,01007	0,05326	-0,28156	0,00656	0,00270	-0,45687	0,01727	0,00837	0,40760	0,01375	0,00760
ADJ_2+	0,31386	0,07051	0,02749	-0,10356	0,01203	0,00256	-0,45820	0,23560	0,05895	0,24293	0,06622	0,01889
FAC_1+	0,29560	0,04579	0,03728	0,06839	0,00251	0,00072	0,67401	0,24410	0,08282	-0,30193	0,04898	0,01894
FAC_2+	0,01460	0,06502	0,02923	0,04772	0,00222	0,00050	-0,09303	0,00842	0,00224	-0,06382	0,00396	0,00120
FIN_1+	0,14389	0,03571	0,03906	-0,04986	0,00099	0,00030	0,43415	0,07540	0,02680	0,41080	0,06750	0,02735
ADA_3+	0,37087	0,01099	0,05053	0,07670	0,00056	0,00022	-1,07109	0,10915	0,05020	-1,65677	0,26116	0,13690
ADA_1+	0,26464	0,10531	0,01160	0,01517	0,00091	0,00008	0,24712	0,24250	0,02561	0,07311	0,02123	0,00255
AWA_3+	0,26200	0,02198	0,04507	0,02174	0,00010	0,00004	-1,00871	0,21707	0,08904	0,45844	0,04484	0,02096

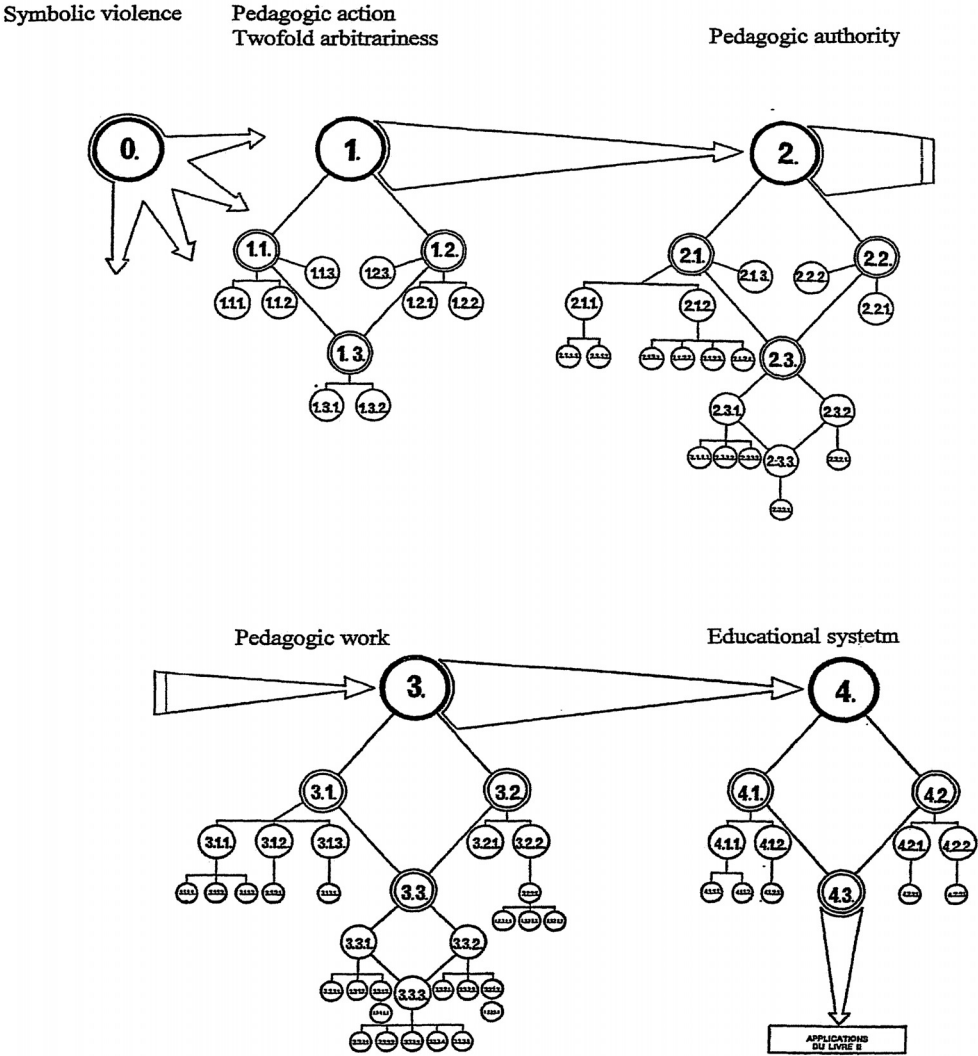
bs250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
PRC_2+	0,51266	0,03663	0,04413	-0,19295	0,01352	0,00461	-0,19616	0,01397	0,00561	1,15587	0,48517	0,22212
ADA_3+	0,37087	0,01099	0,05053	0,07670	0,00056	0,00022	-1,07109	0,10915	0,05020	-1,65677	0,26116	0,13690
FIT_3+	0,58427	0,04029	0,03873	0,81004	0,29867	0,08936	0,17521	0,01397	0,00493	0,77249	0,27163	0,10913
FIT_2+	0,31975	0,04304	0,03951	-0,23426	0,02615	0,00798	-0,39337	0,07374	0,02652	-0,67924	0,21986	0,09013
PRC_3+	0,49743	0,02381	0,05845	-0,49755	0,04412	0,01992	1,34512	0,32243	0,17153	-0,85700	0,13088	0,07937
REL_1+	0,58490	0,05311	0,03347	-0,69615	0,33645	0,08700	0,23738	0,03912	0,01192	0,54910	0,20933	0,07269
PRC_4+	0,58655	0,04579	0,03700	-0,43111	0,10063	0,02876	-0,75699	0,31025	0,10447	-0,56962	0,17567	0,06743
FAC_3+	0,23949	0,01465	0,05033	-0,44774	0,02553	0,00993	-0,90829	0,10508	0,04813	0,92457	0,10888	0,05685
REL_2+	0,39820	0,05678	0,03363	0,32768	0,07931	0,02060	-0,56729	0,23771	0,07275	-0,33150	0,08117	0,02832
FIN_1+	0,14389	0,03571	0,03906	-0,04986	0,00099	0,00030	0,43415	0,07540	0,02680	0,41080	0,06750	0,02735
AWA_2+	0,25676	0,06227	0,03045	0,45347	0,18396	0,04328	0,05933	0,00315	0,00087	-0,27904	0,06965	0,02201
AWA_3+	0,26200	0,02198	0,04507	0,02174	0,00010	0,00004	-1,00871	0,21707	0,08904	0,45844	0,04484	0,02096
FAC_1+	0,29560	0,04579	0,03728	0,06839	0,00251	0,00072	0,67401	0,24410	0,08282	-0,30193	0,04898	0,01894
ADJ_2+	0,31386	0,07051	0,02749	-0,10356	0,01203	0,00256	-0,45820	0,23560	0,05895	0,24293	0,06622	0,01889
ADA_2+	0,03758	0,01007	0,05326	-0,28156	0,00656	0,00270	-0,45687	0,01727	0,00837	0,40760	0,01375	0,00760
FIT_1+	0,25578	0,04304	0,03881	-0,53327	0,13795	0,04137	0,45361	0,09982	0,03526	-0,19267	0,01801	0,00725
ADJ_3+	0,25755	0,02198	0,04735	-1,04071	0,21994	0,08045	0,39018	0,03091	0,01332	-0,18160	0,00670	0,00329
ADJ_1+	0,43364	0,02839	0,04252	1,17013	0,39994	0,13137	0,30532	0,02723	0,01054	-0,14887	0,00647	0,00286
ADA_1+	0,26464	0,10531	0,01160	0,01517	0,00091	0,00008	0,24712	0,24250	0,02561	0,07311	0,02123	0,00255
FIN_3+	0,16696	0,02289	0,04717	0,83708	0,14878	0,05422	-0,26454	0,01486	0,00638	-0,12502	0,00332	0,00162
FAC_2+	0,01460	0,06502	0,02923	0,04772	0,00222	0,00050	-0,09303	0,00842	0,00224	-0,06382	0,00396	0,00120
REL_3+	0,33168	0,01190	0,04948	1,69975	0,30412	0,11624	0,49034	0,02531	0,01140	-0,14634	0,00225	0,00116
FIN_2+	0,17512	0,06319	0,03123	-0,24560	0,05339	0,01288	-0,36736	0,11945	0,03395	-0,05077	0,00228	0,00074
PRC_1+	0,54768	0,02564	0,04375	1,38148	0,48937	0,16539	0,47160	0,05703	0,02271	0,07056	0,00128	0,00058
AWA_1+	0,45989	0,04121	0,04048	-0,75568	0,25434	0,07953	0,67909	0,20540	0,07567	0,01827	0,00015	0,00006

bs250805: factors for principal variables

	Qlt	Weight	Inr	Axis: 1			Axis: 2			Axis: 3		
				Coord	Cor	Ctr	Coord	Cor	Ctr	Coord	Cor	Ctr
PRC_3+	0,49743	0,02381	0,05845	-0,49755	0,04412	0,01992	1,34512	0,32243	0,17153	-0,85700	0,13088	0,07937
PRC_4+	0,58655	0,04579	0,03700	-0,43111	0,10063	0,02876	-0,75699	0,31025	0,10447	-0,56962	0,17567	0,06743
AWA_3+	0,26200	0,02198	0,04507	0,02174	0,00010	0,00004	-1,00871	0,21707	0,08904	0,45844	0,04484	0,02096
FAC_1+	0,29560	0,04579	0,03728	0,06839	0,00251	0,00072	0,67401	0,24410	0,08282	-0,30193	0,04898	0,01894
AWA_1+	0,45989	0,04121	0,04048	-0,75568	0,25434	0,07953	0,67909	0,20540	0,07567	0,01827	0,00015	0,00006
REL_2+	0,39820	0,05678	0,03363	0,32768	0,07931	0,02060	-0,56729	0,23771	0,07275	-0,33150	0,08117	0,02832
ADJ_2+	0,31386	0,07051	0,02749	-0,10356	0,01203	0,00256	-0,45820	0,23560	0,05895	0,24293	0,06622	0,01889
ADA_3+	0,37087	0,01099	0,05053	0,07670	0,00056	0,00022	-1,07109	0,10915	0,05020	-1,65677	0,26116	0,13690
FAC_3+	0,23949	0,01465	0,05033	-0,44774	0,02553	0,00993	-0,90829	0,10508	0,04813	0,92457	0,10888	0,05685
FIT_1+	0,25578	0,04304	0,03881	-0,53327	0,13795	0,04137	0,45361	0,09982	0,03526	-0,19267	0,01801	0,00725
FIN_2+	0,17512	0,06319	0,03123	-0,24560	0,05339	0,01288	-0,36736	0,11945	0,03395	-0,05077	0,00228	0,00074
FIN_1+	0,14389	0,03571	0,03906	-0,04986	0,00099	0,00030	0,43415	0,07540	0,02680	0,41080	0,06750	0,02735
FIT_2+	0,31975	0,04304	0,03951	-0,23426	0,02615	0,00798	-0,39337	0,07374	0,02652	-0,67924	0,21986	0,09013
ADA_1+	0,26464	0,10531	0,01160	0,01517	0,00091	0,00008	0,24712	0,24250	0,02561	0,07311	0,02123	0,00255
PRC_1+	0,54768	0,02564	0,04375	1,38148	0,48937	0,16539	0,47160	0,05703	0,02271	0,07056	0,00128	0,00058
ADJ_3+	0,25755	0,02198	0,04735	-1,04071	0,21994	0,08045	0,39018	0,03091	0,01332	-0,18160	0,00670	0,00329
REL_1+	0,58490	0,05311	0,03347	-0,69615	0,33645	0,08700	0,23738	0,03912	0,01192	0,54910	0,20933	0,07269
REL_3+	0,33168	0,01190	0,04948	1,69975	0,30412	0,11624	0,49034	0,02531	0,01140	-0,14634	0,00225	0,00116
ADJ_1+	0,43364	0,02839	0,04252	1,17013	0,39994	0,13137	0,30532	0,02723	0,01054	-0,14887	0,00647	0,00286
ADA_2+	0,03758	0,01007	0,05326	-0,28156	0,00656	0,00270	-0,45687	0,01727	0,00837	0,40760	0,01375	0,00760
FIN_3+	0,16696	0,02289	0,04717	0,83708	0,14878	0,05422	-0,26454	0,01486	0,00638	-0,12502	0,00332	0,00162
PRC_2+	0,51266	0,03663	0,04413	-0,19295	0,01352	0,00461	-0,19616	0,01397	0,00561	1,15587	0,48517	0,22212
FIT_3+	0,58427	0,04029	0,03873	0,81004	0,29867	0,08936	0,17521	0,01397	0,00493	0,77249	0,27163	0,10913
FAC_2+	0,01460	0,06502	0,02923	0,04772	0,00222	0,00050	-0,09303	0,00842	0,00224	-0,06382	0,00396	0,00120
AWA_2+	0,25676	0,06227	0,03045	0,45347	0,18396	0,04328	0,05933	0,00315	0,00087	-0,27904	0,06965	0,02201

# Appendix 9



An overview of the elements in Bourdieu's thesis about the educational system





## Errata

Page 17	The authors' translation is changed to The author's translation
Page 18 (footnote 22)	Tromsø students of medicine in the University and of other professions in the University College is changed to Tromsø for students from medicine, pharmaceuticals and psychology at Tromsø University and allied health and nursing at Tromsø University College.
Page 21	The PT students participated is changed to The PT students participate
Page 29	as a tacit sort of theoresis is changed to as a tacit sort of aisthesis
Page 36 (footnote53)	The gnosis energeia is changed to Energeia
Page 44 (footnote 61)	and contains a tendency to persist in its being and contains a tendency to persist in its being is changed to and contains a tendency to persist in its being
Page 54	identity is changed to identity
Page 63	legitimate monopol to to is changed to monopoly to
Page 74	curriculum for health and social studies is changed to curriculum for health studies
Page 76 (footnote 108)	Capability is changed to cultural capital
Page 79 (table 3)	Radiography is changed to radiographer
Page 86	Capability is changed to cultural capital
Page 88 (footnote 120)	Capability is changed to cultural capital
Page 92	Nurse is changed to nursing
Page 97	Medical laboratory scientist is changed to medical laboratory science
Page 108	Nurse is changed to nursing
Page 187	profession that is important that that is changed to profession is important
Page 186	table 74 is changed to table 75
Page 226	the gnosis theoria and praxis is changed to theoria and praxis
Page 230	reflecting to reflect