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Instructional work in textile craft

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Instructional work in textile craft

Studies of interaction, embodiment and the making of objects

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Abstract

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The focus for this thesis is instructions and their role in guiding students' activities and understandings in the context of textile craft. The empirical material consists of video recordings of courses in textile craft offered as part of teacher education programs. In four empirical studies, instructions directed towards competences in craft are investigated with the ambition to provide praxeological accounts of learning and instruction in domains where bodily dimensions and manual actions are prominent. The studies take an ethnomethodological approach to the study of learning and instruction. In the studies, instructions related to different stages of the making of craft objects are analysed. Study I highlights instructional work related to *objects-yet-to-be* and the distinction between listening to instructions as part of a lecture and listening to instructions when trying to use them for the purpose of making an object is discussed. Study II and III explore instructions in relation to *developing-objects* and examine instructions as a collaboration of hands and the intercorporeal dimensions of teaching and learning craft are scrutinised. In Study IV, *objects-as-completed* are analysed by investigating a certain way of addressing assessment as an educational topic. The manifest character of skills and understandings in craft provide specific conditions for learning and instruction. In craft education, skilled action is not just explained but also shown and established through bodily instructions that make the targeted skills available through bodily understandings of moving and touching. The bodily conduct of students comprises a resource for teachers to assess students' understanding of the subject matter being taught as the materiality of craft activities reveal the crafters' understanding of the activity at hand. The thesis demonstrates how skills in craft are made available to students in and through opportunities to see, feel and act in craft-specific ways.

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Introduction

At the heart of craft activities is the production of objects. With the use of specialized tools and established procedures, pieces of e.g. wood, fabric or yarn are transformed into objects. While the making of objects is not the only, and perhaps not always the most prominent goal for crafters, a result consisting of a material object is a constitutive feature of craft. Engaging in craft is also characterised by a thoroughly embodied dimension. The bodily experience of working with tools and materials is a salient feature of craft activities and the development of manual dexterity is crucial in order to master skills in the domain. While skills in craft cannot be understood as “mere application of mechanical force” (Ingold, 2000, p. 291), the crafter’s body nevertheless plays an essential role for craft activities to take place – partaking in craft necessarily involves moving the body in specific ways together with specific tools and materials. Knowledge involving mastery of the body is commonly described as *tacit knowing* (Polanyi, 1958) or *knowing in action* (Schön, 1987). Understanding ‘tacit’ as a feature of certain *kinds* of knowledge unviable to description and formulation and thereby something intrinsic to the knowledge itself is potentially problematic. No descriptions are identical to the thing they describe and descriptions therefore need to be understood as a description for a purpose – e.g. for someone to understand something or to be able to do something (Molander, 1996, p. 42–43). In other words, as attempts to formulate *any kind of knowledge* would necessarily result in something different and separate from the knowledge itself, ‘tacit knowing’ would be applicable to all kinds of knowledge. In relation to bodily skills and knowing, ‘tacit’ is perhaps better understood as denoting how knowledge and aspects of knowing are commonly *used and oriented towards*; i.e. as describing traditions of organising activities where certain kinds of knowledge are involved and indicating how certain kinds of knowing is conceptualised and understood.

The focus of the work presented here is instructions and their role in guiding students’ actions and understandings in the context of textile craft education. In this text, the term instruction should not be read as a specific way of organising education – as might the Swedish work *instruktion*. Instead, instruction is intended as a general term referring to all the kind of practices teachers employ in their teaching. Teaching craft (or any other subject)

means making the subject matter available to the students in one way or another – no matter how ‘tacit’ the knowing might be, as part of educational activities, knowledge necessarily needs to be made available to students. Instructing someone in craft means rendering craft competences visible and acquirable to the person being instructed, and this includes making bodily dimensions of knowing communicable, understandable and acquirable from someone not yet competent in such skills. Analogously, being instructed in craft involves finding a connection between instructions and embodied courses of craft-specific actions. Instructions in craft recurrently anticipate embodied uptakes, which means that understanding instructions requires the ability to use the guidelines as instructions for bodily actions.

In four empirical studies, various forms of instructions directed towards competences in craft are analysed with the ambition to provide praxeological accounts of learning and instruction in domains where bodily dimensions of knowledge and understanding are prominent. For this purpose, classroom activities from university courses in textile craft given as part of Swedish teacher education programs specializing in *slöjd* have been video recorded. Swedish term *slöjd* comprises activities connected with the craft production of useful and decorative objects. It can also refer to craft and design as a school subject, and in this sense the term has sometimes been transferred to English as *sloyd*. Sloyd is a compulsory subject in Swedish comprehensive school, embracing the formerly separate subjects of textile craft, woodwork and metalwork. In voluntary education, the content of the subject can be found in various upper secondary school programs and special schools even though there are no courses in sloyd at this level. As a result of sloyd being a school subject, one can also find teacher education programs specializing in sloyd. In this thesis, the term sloyd is used to refer to the school subject or in discussions of the overarching goals of teacher education programs. When referring to the activities in the teacher education courses investigated here, the terms textile craft or just craft is instead used.

The current studies have been conducted as part of a larger research project focusing on Communication and Learning in Sloyd Practices (KOMOLÄR). Previous research on sloyd is dominated by historically oriented exposés of the subject together with studies using descriptions and reports of sloyd education as empirical sources. This means that studies of sloyd education have primarily provided documents *about* sloyd rather than analyses of actual sloyd practices (e.g. Borg, 2001; Holmberg, 2009; Lindfors, 1992; Porko-Hudd, 2005; Skolverket, 1993, 2005; but see Johansson, 2002 and Illum, 2004 for exceptions). The KOMOLÄR project has taken this identified absence of studies grounded in examples of sloyd education as a point of departure and within the project sloyd activities has been investigated in a number of educational settings (e.g. Hasselskog, 2010; Lindberg, 2008;

Lindström, 2008; Lindwall & Ekström, 2009). As for teacher education programs specializing in sloyd, a common interest for previous research has been how educational practices influence and effect student teachers. Focusing on aspects such as the reproduction of gender (Berge, 1992), the development of teaching ideologies and approaches towards sloyd education (Nygren-Landgårds, 2000; Hasselskog, 2000), students' level of conformity with teacher educators' aesthetic preferences (Gulliksen, 2006) and the development of subject competences among students (Borg, 2007; Holmberg, 2009), these studies raise questions about the consequences of organizing education in the way it is done. The four studies presented here, however, take a different route. Rather than focusing on *results* of craft education, they investigate the interactive organisation of educational activities in craft with the ambition to contribute to an understanding of *the interactive accomplishments* of textile craft education.

Studies of interaction between teachers and students in sloyd-related activities have previously been conducted primarily by Johansson (e.g. 2002, 2006) and Illum (e.g. 2004, 2006). These unique studies focus on sloyd in comprehensive education and have highlighted a communicative and interactive character of sloyd where verbal communication often plays a diminished part (Johansson, 2002, 2006; Illum, 2004, 2006). The significant role played by artefacts such as drawings, models and written instructions as part of the educational practice are put forward as a characteristic of interaction in sloyd (Johansson, 2002). Working with craft generates numerous bodily sensations and in a recent study, Johansson and Illum (2009) investigates the inherently embodied character of working in sloyd. Using examples where students are learning to recognize and judge the consistency of metal, Johansson and Illum (2009) describe how the students learn to see, feel and hear the metal in specific ways when working it with the hammer. Johansson and Illum (2009, p. 78) argue that these competences cannot be communicated only with words. Continuing this line of research, the current studies investigate the interactive organisation constituting such craft-specific activities in its practical details by paying close attention to the embodied and material aspects of engaging in craft activities.

The studies presented here take an ethnomethodological (Garfinkel, 1967, 2002) approach to the study of learning and instruction. Significant for ethnomethodology is the notion of *accomplishment*, which denotes the socially produced character of facts and objects at the same time as it emphasizes ethnomethodology's focus on the in vivo work of bringing into being such facts and objects. Central to ethnomethodological studies is descriptions and analyses of the local, situated, real-time interactive organization of the activities under scrutiny and the interactive organisation of an activity is treated as a topic in itself: instead of "*explaining* social facts, ethnomethodology

is directed towards an explication of their constitution” (ten Have, 2004, p. 14). The four studies provide details of the practical work of teaching and learning textile craft by focusing on the specific ways and just how the participants in the investigated activities go about getting their teaching and learning done. The overarching theme connecting the individual studies is a focus on instructions and their role in guiding student activities and understandings: how are competences in craft made learnable to students in and through teachers’ instructive actions? The purpose of the thesis is to shed light on circumstances characterising educational practice in domains where manual action and material objects are intrinsic and the empirical studies aim to elucidate conditions for *instructional work* in such domains. The term instructional work is intended to emphasize the inherently interactive nature of learning and instruction and includes both the activity of *instructing* and the activity of *being instructed*. Instructing and being instructed are reflexively related and it is therefor considered rewarding to investigate and analyse them together. The studies highlight and discuss conditions for learning and instruction of competences where embodied actions and material objects are central and they do so by exploring the specific practices constituting instructional work in craft education in-and-as practical interactive achievements of instruction and instructed action. It should be noted that practical is not used here to, for example, distinguish between practical and theoretical activities or to describe *special kinds* of activities as particularly practical and hands-on. Instead, practical refers to the concreteness of *all* social organization and points towards the specificities constituting any kind of activity. The relation between instructions and instructed action has previously been investigated in a variety of domains (e.g. Greiffenhagen, 2008; Lindwall & Lymer, 2008; Macbeth 2011). In relation to craft and other activities involving bodily skills and construction of material objects, however, instructions and instructed actions are still largely unexplored. The empirical studies presented here thus contribute to the articulation of instructional work in an educational domain not fully accounted for and attempt to make the bodily dimension of knowing available for analytical scrutiny.

Overview of the thesis

This thesis consists of two parts. Part two contains the four empirical studies that constitute the body of the thesis. Part one is written as an introduction to part two and contains 7 chapters that outline related research, analytical approach and methodological considerations associated with the empirical studies. In the next chapter, the domain of study for the reported research is introduced together with an overview of studies related to this field. In chap-

ter 3, ethnomethodology and conversation analysis, which provide the reported research with its scientific traditions and analytical approach, are presented. The chapter outlines a perspective on social action that has guided the empirical work and special attention is given to how learning and instruction are approached analytically in the studies. Chapter 4 introduces a number of related studies guided by the premises introduced in chapter 3 and thereby provide both a backdrop for the empirical studies as well as examples of the analytical approach taken in this thesis. Chapter 5 describes and discusses the methods used in the studies and gives an overview of the empirical material recorded for the studies. Chapter 6 consists of summaries of the four empirical studies presented in part two and chapter 7 offers a concluding discussion where the results reported in the studies are put together and presented in relation the overarching purpose of the thesis. Part one ends with a Swedish summary of the thesis.

The four studies presented in part two of the thesis highlight and discuss instructional work in craft by exploring issues related to instructions and following instructions in different stages of the making of an object. In Study I, instructional work related to *craft-objects-yet-to-be* is analysed. The students in this study are at the beginning of their work, the object is planned and designed but has not yet started to materialise. The analyses highlight aspects of instructional work related to this initial phase and explore some of the characteristics of instructions related to the significant shift between listening to instructions as part of a lecture and listening to instructions when trying to use them for the purpose of producing an object. Studies II and III explore instructions and following instructions in relation to *developing-objects-of-craft*. In these studies, the work with the object has commenced and it has started to take on a material appearance. The two studies explore conditions for learning and instructions in activities that involve the making of objects and discuss different forms of instructions directed towards practices of object-making. Aspects of instructional work contingent on the materiality of craft are highlighted and the significant intercorporeal dimensions of teaching and learning craft are scrutinised. In Study IV, the craft object has been finished and the analyses focus on learning and instruction related to *craft-objects-as-completed*. The ability to assess objects of craft is important for crafters and teachers in craft alike: crafters need to continually evaluate the progressing object of craft they are working with in order to know what to do next and teachers are required to assess the work of their pupils as part of their professional tasks. This study investigates a specific way of addressing assessment in craft as an educational topic and analyses conditions for learning related to different ways of participating in educational activities. In this study, the fact the analysed activities are undertaken as part of a teacher education program is also explicitly addresses.

Sloyd and teacher education: Introducing the domain of study

This chapter introduces the domain of study for the reported research together with an overview of research related to this field. The chapter begins with a short introduction to sloyd as a school subject and continues with an overview of Swedish teacher education programs specialising in sloyd. A broader understanding of the educational setting and traditions associated with sloyd education provide the empirical results presented in the studies with a wider context. The main part of the chapter is devoted to sloyd and teacher education as research topics and relevant literature is presented and discussed. As a domain for scientific studies, sloyd is fairly unexplored and the field is still in the process of being built up. Even though the educational activities scrutinized for the current studies are part of teacher education programs, some studies of sloyd as a school subject focusing on interaction between teachers and pupils are also considered.

Terminology: slöjd, sloyd and craft

The educational practices under scrutiny in the current studies are courses in textile crafts given as part of Swedish teacher education programs specializing in *slöjd*. The Swedish term *slöjd* is documented for the first time in the mid 14th century and its original meaning would approximately translate into something like sleight, cunning, artful, smart, crafty and clever (Borg, 2006, p. 36). In modern Swedish, *slöjd* refers to activities connected with craft production of useful and decorative objects often associated with certain materials and a certain aesthetic. *Slöjd* also refers to a school subject in Swedish comprehensive education and in this sense the term is sometimes adopted into English as *sloyd*^{1,2}. In this thesis, the investigated part of Swedish

¹ The term sloyd has been used in English translations of Swedish texts since 1890 and in 1995 the *Nordic network for research and development in Sloyd* employed sloyd as a common term to avoid confusion with alternative translations (Borg, 2006, p. 36). Translations of slöjd still differ and studies of the subject can be found under terms such as *craft* (Berge, 1992), *craft and design* (Johansson, 2002), *Arts and Craft* (Borg, 2000).

teacher education is referred to as *teacher education specialising in sloyd*³. Since sloyd as a school subject is a special form of craft activity where the objectives lie beyond the mastery of craft competences, the term sloyd does not seem appropriate to denote the activities taking place in teacher education programs specializing in sloyd. As will be further discussed in the next section, sloyd as a school subject primarily aims to develop competences beyond specific skills in craft. Consequently, courses in craft taught in teacher education programs specialising in sloyd are understood as focusing on how craft can be used *as a means* of facilitating the development of competences specified in the curriculum for sloyd in comprehensive education. While the titles of courses offered as part of teacher education programs often included the Swedish term *slöjd*, this usage of the term is here translated into craft to mark the difference between the school subject and subjects taught to student teachers.

The Swedish subject sloyd

As previously stated, sloyd is a compulsory subject in Swedish comprehensive school and embraces the formerly separate subjects of textile craft, woodwork, and metalwork. Sloyd is a small subject and takes up approximately 5% of the total amount of educational time from 1st to 9th grade (pupils aged 7–15) (Borg, 2006, p. 42). As a subject in compulsory education, the aim of sloyd is often described in terms of teaching pupils certain generic skills by means of craft activities; by engaging in craft activities, pupils are expected to develop competences that lie beyond the actual mastering of craft techniques. Borg (2006) states that the overarching purpose of sloyd is to “promote the pupils’ all-round development by training their creative, manual and communicative skills“ (p. 42). Some of the main goals of sloyd in compulsory education are, for example, to enhance the pupils self-confidence, promote their creative abilities, develop a responsibility for their own learning and make pupils aware of environmental issues and economic aspects of production and consumption (Skolverket, 2000; Borg, 2006; Hasselskog, 2010). For teacher education specializing in sloyd, this means that is not sufficient for students to be able to teach pupils craft – prospective sloyd

² In Study I, however, the term sloyd is occasionally used when referring to activities undertaken at teacher education level.

³ The terminologies used in previous English texts discussing this part of teacher education differ. In Berge’s study (1992) *textile craft education* is used when describing teacher education programs and the students are referred to as *future craft teacher*. Holmberg (2009) primarily uses *education/training of teachers in textile* or *teacher education in textiles* and Nygren-Landgårds (2000) employs the term *Sloyd teacher education*.

teachers need to learn how to engage pupils in craft activities in a way that promotes the kind of qualities described in the curriculum for the compulsory school system.

The history of sloyd in Sweden is well documented and detailed accounts have been provided by, for example, Thorbjörnsson (1990), Hartman, Trotzig and Thorbjörnsson (1995) and Trotzig (1997) (in Swedish) as well as Moreno Herrera (1998) and Thorbjörnsson (2006) (in English). Sloyd has been a subject in the Swedish school since the mid 19th century but was not made compulsory until 1955 (Borg, 2001). In Sweden, the ideas behind pedagogical activities known as sloyd are ascribed to Otto Salomon (wood work) and Hulda Lundin (1847–1921) (textile work). Both Salomon and Lundin developed model series of objects to follow in a pre-defined order when teaching sloyd, which facilitated the introduction of sloyd in Swedish schools. Salomon also outlined a number of principles that should guide the work in sloyd education: all products should be useful and no throw-away prototypes were to be constructed – every exercise should lead to a functional object – and maintaining the children’s interest was seen as utterly important together with the promotion of independence and self-activity amongst the children (Thorbjörnsson, 2006).

The educational purpose of sloyd and the rhetoric surrounding the subject have changed several times through the years and this has been outlined by Hartman and colleagues (1995). When first introduced in Swedish schools, the usefulness of the subject was seen in terms of the economical advantages of children being able to produce functional objects and contribute to the household, but at the same time sloyd was also thought to promote sought-after characteristics such as thriftiness, carefulness, good hygiene and respect for manual work among children. Working with sloyd was regarded as a unique activity since it was “fostering both the mind and body of the child” (Borg, 2006). Between 1880 and 1920, the focus in sloyd education moved away from the concrete sloyd products and the benefits of sloyd were almost exclusively seen in terms of its side effects, so to speak. Accuracy, diligence and a more general development of the children’s character were put forward as qualities enhanced by sloyd education. The years between 1940 and 1960 played a crucial role for the development of Swedish sloyd education. The importance for schools to contribute to the pupils’ development of both so-called theoretical and practical skills was emphasized and the previous separation into practical and theoretical subjects was criticized. In 1955, sloyd was made a compulsory part of the Swedish school system. During the 1960s and 1970s, aesthetic development and abilities to express oneself were the central goals of sloyd education, as well as to inspire pupils to engage in enduring hobbies (Borg, 1995). The reproduction of models prepared by the teacher was abandoned in favour of the children’s opportunities to develop

their own ideas for sloyd objects (Borg, 2006). In 1980, sloyd was introduced as *one united subject*, as it is known today⁴. During the 1980s, the formerly stated objectives for sloyd education were complimented with a gender perspective and consumer competence (sw. *konsumentkunskap*) (Hartman et al., 1995). Borg (1995, p. 66) characterize the national curriculum for sloyd during this period as consisting of three themes: creativity, production and consumption and environmental and cultural issues.

Sloyd is often described as a Nordic phenomenon, but there are actually several subjects related to sloyd outside the Nordic countries. The Swedish founding father of sloyd, Otto Salomon (1849–1907), had many international contacts and during his lifetime his pedagogical thoughts were spread around the world. Some of his own writings were published internationally, among the most famous is his *Handbok i pedagogisk snickerislöjd* (Salomon, 1890) published in English as *The theory of educational sloyd* (Salomon, 1892). Several texts exploring the influence of Swedish sloyd on various movements around the world have been published both in Sweden and elsewhere. In an article from 2002, Moreno Herrera and Yokoyama (2002) set out to explain “the core of [Otto Salomon’s] international success” (p. 25) arguing for a number of significant factors including the character of the sloyd subjects as well as the conditions for aesthetical education at the time (this topic has also been discussed by Thorbjönsson (2006) and Moreno Herrera (1999)). A detailed account of the relation between Swedish sloyd and the Cuban subject *Education Laboral*, where many of Salomon’s ideas have been incorporated, is provided by Moreno Herrera (1998). Yokoyama (2003/2004) discusses the connections between sloyd and Syukkou-ka (a Japanese craft subject introduced in the 1880s). Links between sloyd and the Froebel Movement in England during the 1880s are explored in Brehony (1998) and the relations to American art education have been outlined by Eyestone (1992). Parts of the sloyd subject can today be found in, for example, *Home Economics* and *Industrial Arts* (USA), *Arts-Craft-Technology*, *Homemaking* and *Arts and Craft* (England) as well as *Kateika* and *Gijutsu* (Japan) (Borg, 2001).

⁴ There are indications that the development of sloyd moves faster in national documents compared to the classrooms throughout the country. Craft and specific techniques still seem to be a main issue in many sloyd classrooms (Hasselskog, 2010). The union of the two branches of sloyd into one united school subject has been difficult to fully implement, which can partly be seen in light of the traditional emphasis on techniques and materials in sloyd education. Even though sloyd as a united subject has officially been a fact for almost 40 years, in many schools textile sloyd and sloyd using wood and metal are still treated as two separate subjects (Borg, 1995; Hasselskog, 2010; Skolverket, 2005). This is also reflected in teacher education programs where the majority of students graduate as sloyd teachers specialising either in textile techniques or techniques related to wood and metal.

Teacher education specialising in sloyd

Sloyd teachers are trained at a handful of Swedish universities and a comparatively small number of teacher educators – approximately around 30 people – are responsible for educating sloyd teachers in Sweden (Hasselkog, 2010, p. 46). The educational programs are organised slightly differently at each university: some universities offer courses textile sloyd and wood-and-metal sloyd separately and students teachers can here choose to become qualified in both branches of sloyd or to combine sloyd with one or two other subjects, while other universiteies offer an integrated education where textile sloyd and wood-and-metal sloyd are taught as one united subject. Until recently, there were also programs offering student teachers in textile sloyd specialization in, for example, weaving and sewing. In view of this, the title “sloyd teacher” can refer to a person educated in sloyd as a united subject, in wood-and-metal sloyd or in textile sloyd with a potential specialisation.

Teacher education specializing in sloyd has existed in Sweden since the end of the 19th century (Berge, 1992; Holmberg, 2009). For a long time, teacher education programs for textile sloyd and for wood-and-metal sloyd were organized separately and differed in length: Berge (1992) describes the history of teacher education for *girl-sloyd* and *boy-sloyd* (sw. *flickslöjd* and *gosslöjd*), as it was then called, as two almost parallel stories. The education of teachers in sloyd was first introduced in the form of short courses but was gradually extended. Since the 1960s, textile education was organised at government training colleges, first as a 2-year program but soon extended to 3 years of studies (Borg, 2007). For a long time, wood-and-metal education was organised as a 1-year program and it was not until 1988 that the education of teachers in sloyd was uniformly organised (Borg, 2007). The varying lengths of the programs were related to the entrance qualification for the two educational programs. Wood-and-metal students were obliged to attend a 4-year vocational education program before starting what might be described as a 1-year pedagogical course. Quite to the contrary, textile students were required to attend a 1-year preparation course before they started a 3-year program including both subject studies and pedagogical courses.

Since the 1960s, Swedish teacher education has been subject to a number of reforms with the purpose of coordinating the various teacher education programs and including them as part of the Swedish university system. Borg (2007) has analysed the major reforms of teacher education in the last 30 years in relation to the sloyd teacher profession. In 1977, a major reform was implemented incorporating teacher education together with all post-secondary education as part of one organization for higher education. The purpose of the reform was to improve the quality of teacher education and give the program a position equal to other academic education programs

(Borg, 2007). Workshops and demonstrations were replaced with more conventional lectures and seminars and course examinations often included written parts. Since the amount of time teacher educators were assigned to organise a course was reduced (and more time was needed to prepare lectures and examinations), the time teacher educators spent in the workshops with their students was significantly decreased (Borg, 2007). In 1994, another change was made that, according to Borg (2007), has had a great impact on teacher education specializing in sloyd. Through this reform, Swedish universities were given increased freedom to independently formulate the educational plan for their teacher education programs, which led to the introduction of the first teacher education programs offering courses in sloyd as one united subject.

In 2002, all teacher education programs in Sweden were giving a common structure and organised as a national program for teacher education (sw. *Lärarprogrammet*). Students were required to attend 1.5 years of courses covering general teaching knowledge combined with individual specializations (e.g. sloyd, mathematics or English). Each university was allowed to design their specialization courses independently, with the restrictions that they should last for at least one year and include half a semester of tuition in a comprehensive school. At that point, there were no restrictions on which subjects students were allowed to combine. For student teachers of sloyd, the previous 3-year single-subject education program with at least one year of mandatory preparation studies was changed in 2002 to a teacher education program lasting approximately 4.5 years without requirements for any previous experience of sloyd⁵. Since sloyd (or craft) only exists in specialized programs in upper secondary school, it would have been problematic to keep the subject-specific requirements for student teachers in sloyd: to be able to meet both the general qualifications for teacher education programs and the subject-specific requirements, students would more or less be forced to attend two upper secondary school programs (Borg, 2007). Since previous sloyd experience is no longer required, basic sloyd education needs to be part of the teacher education (Borg, 2007). Sloyd teachers have traditionally had a strong connection to the subject previous to becoming teachers; sloyd has often been an important part of the sloyd teachers' lives also outside the classroom (Holmberg, 2009). Without the subject-specific admission requirements, the sloyd specializations were made available to a new group of students without previous experience of craft.

⁵ In the sloyd-specific entrance qualifications for teacher education specializing in sloyd was abandoned in 1988, with exception of one teacher education program.

Research on sloyd and teacher education

Research related to sloyd education is sparse and the collection of studies of sloyd and related issues come almost exclusively from the Nordic countries. As suggested by Borg (2001), research on sloyd can roughly be divided into four themes: historical, pedagogical/didactic, technical/scientific, and work on artistic development. The majority of previous studies are concerned with the historical development of the subject, often focusing on the years between 1880 and 1920 (e.g. Hartman, 1993; Johansson, 1987; Kragelund, 1989; Thorbjörnsson, 1990; Trotzig, 1992, 1997). Research on sloyd education commonly uses reports on sloyd education as data sources and is only occasionally grounded in documentation of educational activities. Research on sloyd can thus be described as primarily being about these practices and not investigations of the practices as such. Exceptions are, however, found in, for instance, Johansson (2002, 2006), Illum (2004, 2006), Gulliksen (2006), Lindberg (2006, 2007) and Hasselskog (2010) who describe comprehensive sloyd education using observations and recorded documentation. The overview presented here mainly focuses on studies of sloyd as part of teacher education. Results from comprehensive sloyd education describing interaction between teacher and pupils are, however, briefly introduced. These studies are considered to be an important inspiration for this thesis and have discussed issues similar to the current studies – although in a different educational context.

One of the first studies investigating the education of sloyd teachers was conducted in 1992 by Britt-Marie Berge⁶. The overall purpose of Berge's study was to analyse the role of teacher education in the socio-cultural reproduction of femininity and masculinity. In her study, Berge followed two groups of student teachers, one studying textile techniques and one wood-and-metal techniques. Only female students attended the textile program and in the wood-and-metal course there was one female student among the otherwise male student teachers. The empirical part of the study – consisting primarily of interviews and surveys – was carried out between 1986 and 1989 when the teacher education program for wood-and-metal teachers was still a 1-year course and textile education a 3-year program. Berge gathered information about the students at the beginning of the education program, in relation to their period of practical training in schools and just before their graduation. Berge describes several differences between the two groups of students included in the study. Not only were they separated in a male and a female group, there were also differences in social background. While the

⁶ As a matter of fact, in her study, Berge does not report on any prior research related to teacher education specialising in sloyd, thus presumably making her study the very first to investigate this domain.

wood-and-metal students primarily came from families without an academic tradition, the parents of the textile students were often fairly well educated. Moreover, the textile students described their experiences of school as mainly positive in contrast to the wood-and-metal students who stated that they did not feel comfortable in compulsory school. In relation to their reasons for becoming sloyd teachers, the textile students mentioned the possibility of developing competences in craft as the primary reason for applying to the teacher education program. In the reports from the wood-and-metal students, the teacher education program was portrayed as a short vocational education program that enabled them to work with children.

Another difference presented by Berge concerns how the student teachers describe sloyd as a school subject and what they want to teach their future pupils. This part of Berge's study was carried out at the end of the students' education and also included interviews with the teacher educators in order to compare the teacher educators' views with those of the students. Here, too, Berge concludes that there are apparent differences between the two groups and that these differences are also correlated to the views of the interviewed teacher educators. Even though both groups claim that the most important goal of sloyd education is to prepare pupils for their everyday lives and to develop their creativity this seems, according to Berge, to mean different things to the two groups. The textile students suggest that sloyd should give pupils a readiness to look after their future homes and save some money by taking good care of textiles and mending clothes. For the students studying wood-and-metal courses and their teacher educators, preparedness for the future instead seemed to refer to a promotion of children's creative and inventive skills and to giving them a general handiness. Even though wood-and-metal sloyd are also seen as a way to teach pupils to take care of a household, wood-and-metal students emphasised a free, creative process and the encouragement of a more general inventive ability. In Berge's answers to her overarching questions regarding the teacher educators' role in the social and cultural reproduction of gender structures, she suggests that her material shows that teacher education in sloyd largely reinforces the historical values and organization of the subject. The history of the two branches of sloyd and their differences were still present in the teacher education when Berge conducted her study.

Since Berge's study, teacher education specialising in sloyd has been subject to several organisational changes and sloyd teachers now attend educational programs of equal length and with the same organisation regardless of specialisation and it is difficult to estimate the extent to which the differences seen in Berge's material are still present. Hasselskog (2000) took Berge's study as a point of departure in order to investigate the "new" sloyd teachers being educated in sloyd as one subject. When this new educational

program was introduced in 1997, many questions were raised by both sloyd teachers and teacher educators (Hasselskog, 2000). The “new” teachers’ subject knowledge was questioned in relation to the fact that competences in both textile and wood-and-metal sloyd are taught in the same amount of time otherwise devoted to one of the branches and the ways this new teacher education would potentially affect the sloyd subject was much debated. Hasselskog’s study aims to investigate if and how a group of students educated in both branches of the sloyd subject differed from other student teachers specialising in sloyd. To do this, he conducted a survey study including 16 of the students from the first class attending the new teacher education program. Hasselskog describes both similarities and differences compared to Berge’s (1992) conclusions. The number of male and female students is closely related to what would be expected if two groups of students (one textile and one wood-and-metal) had been combined and the reasons for becoming sloyd teachers are either related to an interest in craft or a desire to work with children. Hasselskog, however, presents a rather different picture regarding the future sloyd teachers as renewers of the sloyd subject based on his material. The students in the study portrayed themselves as pioneers who wanted to change the sloyd subject in accordance with recent developments in comprehensive education. Hasselskog relates this to the fact that many of the students had made an active choice to attend the new teacher education. Several of the students were older than the average student teacher and expressed a desire to work with and develop the sloyd subject. Hasselskog’s study was carried out almost 15 years after Berge’s study and since he does not use any reference group from the same period, it is difficult to say whether the differences he describes compared to Berge’s results are related to the new organisation of the education program or if they are rather a result of changing times.

Nygren-Landgärds’ (2000) work partly relates to the previously reported studies as it aims to investigate the relation between teaching ideologies represented in teacher education and views of sloyd education expressed by student teachers. In her study, Nygren-Landgärds first identifies a teaching ideology dominating the teacher education under investigation (where she herself is one of the main teacher educators). She then compares interviews with 18 students attending the teacher education program, focusing on the student teacher’s ideas about and approaches to sloyd education. As a result of these interviews, Nygren-Landgärds presents eight *fictional* teacher characters: ‘the academic’, ‘the craftsman’, ‘the cultural carrier’, ‘the educator’, ‘the instructor’, ‘the missionary’, ‘the naturalist’ and ‘the social reformer’. It should be noted that none of the students corresponds to just one of these characters but are instead described as a mix of two or more of the eight approaches. According to Nygren-Landgärds, the two main approaches rep-

resented by the students are ‘the educator’ and ‘the instructor’, each corresponding to approximately one quarter of the student teachers. The two approaches show noticeable differences between them. While ‘the educator’ prefers to start from problems in order to facilitate pupils’ own initiatives and promote broad educational values, ‘the instructor’ prefers a stricter plan for the education and evaluates pupils according to goals the teacher has decided for a specific teaching period (Nygren-Landgärds, 2000). Nygren-Landgärds concludes that even though most of the described approaches correspond to some part of the ideology represented in the teacher education program, none of the students have adopted the identified view of the teacher educator completely. From this, she concludes that there are limits to the influence teacher education can have on students’ educational ideologies. According to Nygren-Landgärds, there seem to be some fundamental educational ideas held by students that resist influence from teacher education.

The influence of teacher education on student teachers is also the topic of Gulliksen’s (2006) study where the construction of principles for assessing form quality (what Gulliksen terms a *formbild*) among student teachers⁷ specialising in Arts and Craft, the Norwegian equivalent to sloyd⁸ are investigated by means of two case studies. The study takes as a point of departure the mundane observation that groups of students studying Arts and Craft often produce artefacts displaying certain similarities in their design and their aesthetic expression, which, in turn, are related to the specific teacher responsible for teaching the group. In the words of Gulliksen (2006, p. 9): “Certain preferences are developed, and relevant questions will be: how much of these arguments reached and preferences developed are influenced by the situation, the teacher’s way of acting and conceptualising and the teacher’s ideals of form?” In the study, Gulliksen observes two groups of students for approximately 10 lectures each focusing on discussions about form quality. (The lectures are also video-recorded but these recordings are used as a backup system to check certain aspects of the observations and are not analysed in the study.) The observations are directed towards discourses of form and the analyses focus on the structures behind these discourses (Gulliksen, 2006, p. 92). Gulliksen concludes that the empirical material indicates a development towards consensus among the participants as regards to form qualities and she argues that the “unanimity was so strong that it was possible to tentatively state that the group as a whole developed a single *formbild*, rather than several different ones” (2006, p. 177).

⁷ Some students in Gulliksen’s study attended the courses without the ambition to become teachers.

⁸ In Norway, sloyd and visual arts are taught together in the subject *Kunst og Håndverk* (Arts and Craft).

The design process is described as consisting of three stages: the initial phase, the middle phase and the final phase. In the initial phase, the students' work with ideas for their design and the several different formbilds exist as discursive objects. As the design process progresses through the second and third phase, the convergence towards one single formbild becomes apparent as the formbilds take on material character in the students' products. Gaps between the students' and the teachers' formbilds are consistently bridged and Gulliksen show how the teachers' views are preferred in every case. It is argued that the teachers included in the study display different approaches towards the teaching of form, described as being either a wish to clearly communicate a certain formbild or openness where no given answer exists. Despite these differences, Gulliksen states that both the analysed cases display similar patterns with convergence towards the teacher's position (2006, p. 219). It is also argued that when norms and preferences are communicated vaguely, students seem more restricted and tend to adapt more strongly to these norms than if they are communicated clearly.

The hitherto reported studies have in different ways focused on how teacher education influences the students attending the education. Another line of research has focused on the development of teacher education specialising in sloyd and how organisational changes have affected the kind of education offered to students and, potentially, the kind of teachers educated. Borg (1995, 2007) has in two separate studies analysed the development of teacher education specializing in sloyd using official documents describing the education program as a point of departure. In the study from 1995, the analyses was carried out as part of a study primarily focusing on the development of sloyd as a school subject while the more recent study analyses how the integration of teacher education specialising in sloyd in the Swedish university system – what Borg refers to as an *academisation* of the education – has and will affect the competences of sloyd teachers. As previously mentioned, teacher education in Sweden has been subject to several changes in the last 50 years and this is especially true of teacher education specializing in subjects such as sloyd. The general ambition has been to improve the quality of the student teachers' education and this has, according to Borg (2007), been done at the expense of time spent on subject studies. More time is instead spent on general teacher knowledge and theory of science and research. With less subject knowledge Borg predicts a risk of sloyd in schools becoming restricted to the kind of techniques the specific teacher feels comfortable with. Such a development would, contrary to the national goals outlined for the subject, make sloyd in schools more teacher-dominated. Instead of a professionalization of sloyd teachers, Borg finds reason to describe parts the changes in teacher education specialising in sloyd in terms of *amateurization* (2007, p. 223).

The integration of sloyd teacher education and the Swedish university system is also the subject of a study by Holmberg (2009). This study concentrates on the development of one of the teacher education programs in Sweden where teachers in textile sloyd are examined. The aim of the study is to investigate how the textile subjects has changed during the period 1955–2001 with a special interest in how the integration of textile education into an academic, scientific tradition has influenced the education. The study relies on analyses of local and national documents, textile artefacts produced as part of the educational program and interviews with teacher educators. The study concludes that textile education has been strongly influenced by government directives – economic and structural decisions have largely shaped how the textile subject has been taught. Holmberg describes how the attitude towards the textile subject has changed during the investigated period; an identified pride in the subject has gradually diminished and the integration of textile education into the university system is considered to have marginalized the education’s basis in manual action and domestic history. The analyses of material objects, however, show that technical competences in craft have remained a central part of the education thought the investigated period.

Studies of interaction in sloyd education

Studies of interaction between teachers and students in sloyd are rare and have largely been conducted in relation to the previously mentioned KOMOLÄR-project. Grounded in video recordings of sloyd activities, Johansson (e.g. 2002, 2006, 2008a, 2008b) has in several studies described sloyd in comprehensive education with a focus on what kind of activities teachers and pupils engage in. Even though pupils in sloyd largely work with individual projects, sloyd education is characterised by intense interaction and communication between pupils. Johansson (2002) describes activities in sloyd education using four themes: verbal and non-verbal communication; the use of tools; the use of sketches and written instructions and the production of sloyd objects. In relation to the use of tools and the production of sloyd objects, Johansson (2002, 2006) highlights the embodied experiences of sloyd activities as a central aspect of education in sloyd. According to Johansson, the bodily engagement with tools and materials is not only important as such but also provides the pupils with emotional and aesthetic experiences that are significant for learning in sloyd. The significant and dynamic role artefacts play in educational activities are foregrounded and Johansson (2002, p. 247) state that: “sketches, pictures and instructions are produced and used in order to plan work, but they are also changed and developed by the choice of materials and tools and altered conditions”.

Using a similar approach, Illum (2004, 2006) has focused on the embodied interplay with materials and tools when describing the specific procedures taking place in craft activities. Illum aims to “uncover the origins of the aesthetic knowledge and skills that are embodied in the processes surrounding the encounter between individual and materials” (p. 245). He introduces the notion of *the process dialogue*, which he formulates as “a dialogue...between on the one hand, the individual and the tool as an extended part of the individual and on the other hand, materials and work processes” (2004, p. 247). The process dialogue refers to embodied aspects of learning and interaction in craft and brings to the fore interaction not only with fellow participants but also with physical artefacts and highlights the bodily experiences of working with craft. The analyses offered by Illum reveal several kinds of communicative actions where verbal communication often plays a diminished role.

In a recent study, Johansson and Illum (2009) take the process dialogue as a point of departure when studying how learning develops in sloyd. The study aims to capture the inherently embodied character of the process dialogue by analysing the interaction between teachers and students in a metal workshop. In the analysed examples, pupils are learning to recognize and judge the consistency of metal. Johansson and Illum show that the students need to learn how to see the metal, how to feel the metal with their hands and through the hammer and how to listen to the sounds of the metal when working it with the hammer in appropriate ways. The authors argue that these kinds of competences cannot be communicated only through discursive practices but are dependent on other ways of communicating (Johansson & Illum, 2009, p. 78). In relation to pupils’ embodied experiences of materials, teachers’ references to material conditions in verbal discussions have the potential to facilitate further bodily understandings. Johansson and Illum argue that a collective memory of craft is created and recreated through social interaction together with tools and materials (2009, p. 78).

The reported descriptions of sloyd education are, on the one hand, specific to the particular educational context but can, on the other hand, be argued to have relevance also for sloyd-related activities in other contexts. While the details of the organisation of educational activities are different when sloyd is taught and learnt as a school subject compared to courses in teacher education, the main results describing features of sloyd interaction in compulsory education are nevertheless in many ways relevant to educational practices seen in teacher education specialising in sloyd. The empirical studies included in this thesis revolve around the interactive characteristics of teaching and learning craft and can, in this respect, be seen as building on and continuing this line of research.

Concluding remarks

Research on teacher education specializing in sloyd is very limited; only a handful of studies have focused on this part of teacher education. A common interest of previous studies can be described as the effect of teacher education; how does the organisation of teacher education relate to student teachers' understanding of their subject and in what ways are organisational reforms of teacher education changing the kind of sloyd teachers being educated? The main methods used in previous studies of teacher education specialising in sloyd are interviews (Berge, 1992; Holmberg, 2009; Nygren-Landgårds, 2000), survey studies (Berge, 1992; Hasselskog, 2000) and analysis of objects and written documents (Berge, 1992; Borg, 1995, 2007; Hasselskog, 2000; Holmberg, 2009). This means that there is little knowledge of the concrete practices constituting teaching and learning in this context. In Gulliksen's (2006) study, the development of student teachers' principles for judging form-qualities is investigated through detailed observations of educational discourses. This study focuses on a specific aspect of teacher education specialising in sloyd, which could be termed the fostering of aesthetic preferences or perhaps even the education of student teachers' taste in relation to craft. The empirical studies reported in this thesis contribute to the existing literature on teacher education specialising in sloyd by means of detailed investigations of the educational activities directed towards craft competences in this context. The studies thereby add a perspective of craft education as locally accomplished to the previous social, cultural and historical descriptions of teacher education specialising in sloyd. Through analyses of discursive, embodied and material aspects of craft activities the four studies venture into questions concerning the conditions for teaching and learning competences in craft.

Understanding social action: Presuppositions and analytic approach

While the previous chapter introduced the research domain for the empirical studies, the current chapter provides a background and foundation for the knowledge interest that has motivated them. As stated in the introductory chapter, the studies draw on ethnomethodology and conversation analysis in the understanding of social actions as well as their analytical approach. In this chapter, brief introductions to these traditions are offered together with a discussion of fundamental assumptions of particular relevance to the empirical work. The chapter thus provides a perspective on social action guiding the empirical studies together with some methodological consequences. The four empirical studies are all concerned with activities directed towards *learning* of craft and the chapter therefore concludes by discussing learning and instruction in relation to the chosen scientific traditions. This section outlines how learning and instruction are approached analytically in the empirical studies and what kind of claims that are made in relation to learning.

Ethnomethodology and conversation analysis

Ethnomethodology and conversation analysis are closely related traditions and have much of their foundational interests and presuppositions in common. Their present connection might be somewhat ambiguous (see e.g. Atkinson, 1988; Maynard & Clayman, 1991; Schegloff, 1989; Silverman, 1998) but, as stated by Lynch (1993, p. 24): “it is clear that there was once an intimate relationship between the two programs”⁹. There are today a

⁹ Lynch has described the scope of more recent conversation analysis as investigations of “the demonstrably rational properties of indexical expressions by describing recurrent sequential actions in conversations and specifying formal rules for generating their organizational features. [The] aim is to develop a grammar for conversation that describes how different speakers coordinate their actions to produce coherent sequences of two-party or multiparty conversation” (1993, p. 25). This aspiration does not necessarily conflict with the development of ethnomethodology but, as argued by Lynch, ethnomethodology’s interest in grammar are rather investigations of *the use* of grammar, i.e. “to examine how formalizations are developed and used in and as local courses of practical actions” (Lynch, 1993, p. 25).

number of texts introducing ethnomethodology (e.g. Garfinkel, 1967, 2002; Heritage, 1984; Lynch, 1993) and conversation analysis (e.g. Goodwin & Heritage, 1990; Sacks, 1992; Schegloff, 2007; Silverman, 1998) as well as discussions of their mutual relation (Clayman & Maynard, 1995; Lynch & Bogen, 1994) and the development of various subfields (Maynard & Clayman, 1991). This overview is limited to some fundamental assumptions guiding the knowledge interest and analytical approach of ethnomethodology and conversation analysis of particular relevance to the current studies.

Ethnomethodology is a term initially introduced in the 1950s by Harold Garfinkel in order to capture his developing research endeavours into the organization of social life as achieved by people's routinized ways of acting to get things done (Rawls in Garfinkel, 2002). Despite the fact that the term ethnomethodology easily leads to the expectation of a specific scientific method, ethnomethodology primarily describes a domain of study – as psychology refers to the study of the human psyche, ethnomethodology describes the scientific field investigating the specific methods people (ethnos) use to organise their activities. Today, ethnomethodology is a well-established research tradition and its general scope of interest lies with social structure as an *achieved* phenomenon (Garfinkel, 1967, p. 9 ff.). For ethnomethodology, social life is viewed as an ordered business, not because of a set of governing rules applied to pre-defined situations but as a *locally produced* order. The orderly character of social life is a result of constant work by people using shared methods to achieve that order. It is in and through people's acting that the orderliness of social life is produced and reproduced and the ability to see this order and account for the production of certain actions is not provided by some rules or structure outside of these actions. As argued by Pollner (1991, p. 372) “what members do in, to, and about social reality constitutes social reality. Thus, language and action are not merely responses to an a priori reality but contribute to its constitution”. While members' actions constitute the orderliness of social life, those actions are at the same time viewed and recognized in light of that very same order. In other words, members are held accountable in relation to the order they are engaged in producing.

An oft-cited passage from Garfinkel formulates ethnomethodological studies as the analysis of “everyday activities as members' methods for making those same activities visibly-rational-and-reportable-for-all-practical-purposes, i.e. ‘accountable’, as organizations of commonplace everyday activities” (1967, p. vii). From an ethnomethodological perspective, social actions are organised and produced so as to display to others what kind of actions they in fact are and to make the reasons and intentions for doing the action in the first place publicly available. Students attempting to answer teachers' questions, for example, tend to, for instance, go through their

books and papers or scrutinize something written on the board while they simultaneously arrange their faces in a ‘thinking’ way to show to others that they have heard the questions and are planning to deliver an answer in the near future. By doing these kinds of things, their silence is heard as a-silence-forgoing-an-answer instead of a-silence-since-the-question-was-not-heard or a-refusal-to-engage-with-the-lecture. In this way, social actions are not just ordered, but also designed to *display their orderliness*, to be “observable-and-reportable, i.e. available to members as situated practices of looking-and-telling” (Garfinkel, 1967, p. 1).

Partaking in social life means constantly being engaged in making sense of other people’s acting and this is frequently done by “imputing biography and prospects to the appearances” by “embedding the appearances in [...] presupposed knowledge of social structure” (Garfinkel, 1967, p. 77). Seeing a piece of behaviour in a certain environment often requires knowledge of what usually happens at this time in this kind of situation in order to understand what is going on at this point. The activity of sense-making can be described as “the production of a circular process in which an event and its background are dynamically adjusted to one another to form a coherent ‘gestalt’” (Heritage, 2008, p. 302). In other words, an action is seen in the light of the situation in which it is carried out and, at the same time, the understanding of what kind of situation this is will inherently depend on the interpretation of the actions being performed. This circular – or perhaps more accurately reflexive – process is referred to as *the documentary method of interpretation*¹⁰. Quoting Garfinkel,

the method consists of treating an actual appearance as ‘the document of,’ ‘as pointing to,’ as ‘standing on behalf of,’ a presupposed underlying pattern. Not only is the underlying pattern derived from its individual documentary evidences, but the individual documentary evidences, in their turn, are interpreted on the basis of ‘what is known’ about the underlying pattern. Each is used to elaborate the other. (Garfinkel, 1967, p. 78)

The understanding of “underlying patterns” and “actual appearance” are inherently related and changes in the understanding of one will alter the perspective on the other (Heritage, 2008).

Making sense of the world is contingent on the temporal unfolding of social action: “time is an integral feature of the organization of a mundane ‘world’ of objects” (Heritage, 1984, p. 85). In the midst of social life, members are left to use what is currently available in order to understand what is going on, even though later on, with all facts in hand, it will turn out that this

¹⁰ As should be clear, the documentary method is not a scientific method used for research purposes but describes the mundane practices people use to make sense of the world in every moment, all the time.

understanding proved to be wrong. A man with a briefcase running down the street waving his hand and yelling at the bus just about to leave the stop will probably be seen as a man being late and trying to catch his ride to work. When the same man continues running past the waiting bus still screaming and waving, his action might instead be seen in terms of psychological stress or insanity. And then, when a group of people with cameras and microphones appear behind the bus, the conclusion that there is a movie production in progress will eventually be reached. This, however, does not disregard that for the first couple of seconds what was *seen* was a man trying to catch a bus, only that this later on proved not to be the case. To quote Garfinkel again (1967):

It frequently happens that in order to decide what he is now looking at he must wait for future developments, only to find that these future developments in turn are informed by their history and future. By waiting to see what will have happened he learns what it was that he previously saw. Either that, or he takes imputed history and prospects for granted. (p. 77)

Without making inferences with the use of previous experiences, understanding the world would be impossible: assumptions regarding social order and how things are usually done constitute necessary tools for organizing social life.

In ethnomethodology, questions of social structure are investigated with a focus on members' methods for producing and recognizing intelligible actions. Ethnomethodological studies are concerned with members' own methods of categorization, as opposed to, for example, discussions on the correctness of certain categorizations or the use external definitions of what people are doing. Instead of evaluating participants' decisions, evaluations, descriptions etc., ethnomethodological studies seek to understand the resources and procedures used *to reach* the observed conclusions (the decisions, evaluations, descriptions etc.). This way of approaching activities is formulated as taking a *non-ironic* stance (Garfinkel, 2002, pp. 170–171; Garfinkel & Sacks, 1986, pp. 162–163, see also chapter 4 on *ethnomethodological indifference*) towards the phenomenon under scrutiny with the ambition to conduct studies that

explicates, rather than downgrades, members' knowledge without analytic stipulations and impositions of such external standard, and instead has regard to the practical (e.g. descriptive) adequacy of some item of knowledge to the situation of which it is an inextricable part (Watson, 1994, p. 173).

It is not within the scope of ethnomethodology to evaluate “whether, or to what degree, the actors' depictions of their circumstances are correct or faulty” (Heritage, 1984, p. 140). Even though ethnomethodology's focus is

on members' own methods and describing activities from within, so to speak, this does not mean that ethnomethodological researchers are best off just asking people what they occupying themselves with (Arminen, 2005, p. 70). Ethnomethodological studies are often engaged in detailed analysis of empirical records trying to make out what people are doing but have difficulties to describe. The methods people rely on to do the things they do are not hidden to them but often a *seen but unnoticed* character of social life (Garfinkel, 1967, p. 41). Paying close attention to the temporal unfolding of social activities with the use of empirical records and in detail trying to work out just *how* members produce and recognize their actions will reveal key aspects of how these activities are organised and achieved. Focusing on empirical records of what is witnessable there and explicating the seen but unnoticed details of some activity is a way of turning the interactional organization of the activity into a topic in itself.

Social action as sequentially organised

In close relation to ethnomethodology, conversation analysis developed during the 1960s. Harvey Sacks, together with Emanuel Schegloff and Gail Jefferson, engaged in the study of naturally occurring talk-in-interaction focusing on "*how* interlocutors sequence their talk, *how* they methodically arrive at decisions [and] *how* they actively make, display and share sense of ordinary settings, actions and identities" (Watson, 1994, p. 175). The main interest of conversation analysis is not really conversations and language in itself but rather the methodical organization of social interaction making the term conversation analysis something of a "misnomer" (Psathas, 1995, p. 2). With an interest in the organization of social life, conversations made a convenient object of study, being both a pervasive form of social action and easily accessible for detailed, repeated analysis (Watson, 1994). Sacks himself explains his reasons for studying conversations in a lecture from 1968:

If you are going to have a science of social life, then, like any other science of something or other, it should be able to handle the details of something that actually happens. It should be able to do that in an abstract way, while handling actual details. My research is about conversation only in this incidental way, that conversation is something that we can get the actual happenings of on tape and transcribe them more or less, and therefore that's something to begin with. (Sacks, 1992, vol. II, p. 26)

Originally, conversation analysis developed as a generic approach to the study of mundane interaction (Goodwin & Heritage, 1990). Descriptions of normative structures for turn-taking in conversations (e.g. Sacks, 1992, vol.

I, pp. 523–534, 624–684 & vol. II, pp. 32–55, 495–498; Sacks, Schegloff, & Jefferson, 1974), the identification of conversational elements projecting expected next actions (e.g. Sacks, 1992, vol. I, p. 304–305, 685–692 & vol. II, pp. 188–196, 521–560; Schegloff, 1968, 2007; Schegloff & Sacks, 1973), outlining of various preference organizations¹¹ (e.g. Sacks, 1987; Sacks, 1992, vol. II, pp. 410–415; Sacks & Schegloff, 1979; Schegloff, Jefferson, & Sacks, 1977) as well as a suggestion for an inference system built on membership categories and category-bound activities (e.g. Hester & Eglin, 1997; Housley & Fitzgerald, 2002; Sacks, 1974, 1992, vol. I, pp. 40–48, 169–181, 301–302, 333–340 & vol. II, pp. 215–221, 453–457) are among the more prominent findings from earlier studies in conversation analysis. Just as the term *ethnomethodology* does not refer to a scientific method but instead points out an interest in people’s methods for doing social life, conversation analysis does not refer to a specific method of analysing language. Rather, it designates a topic, which could be described as “interlocutor’s own conjoint and culturally methodic analyses of their conversational actions” (Watson, 1994, p. 178). According to Watson (1994) language and culture was for Sacks a toolkit for everyday business and his approach was designed to “empirically, observationally address that foundational sociological question ‘How is social order possible?’” (Watson, 1994, p. 180) which shows conversation analysis’ close relation to ethnomethodology.

One of the most important aspects of conversation analysis of relevance for this thesis – and a significant feature of studies working in the tradition – is the attention paid to the *sequential organization* of interaction. As Goodwin and Heritage (1990, p. 287) write: “the concept of interactional sequence was the analytic innovation that opened the way for cumulative empirical advances”. Social interaction is organized as sequences of actions building on each other and when trying to understand a piece of interaction, the placement of actions, their temporal organization and relation to one another is the key to capturing the interactional work a specific action is doing. Actions are regularly responses to what went on previously in the interaction and in order to understand an action it is important to find out what it is a response to. At the same time, actions regularly bring about new (re)actions and these actions are organized as responses to how this first action was understood and treated and these (re)actions thereby provide resources for understanding the local understanding of a certain action.

¹¹ Preference should in this context be understood as a property of the *type of sequence* rather than a property of the participants, such as their wishes, likings, motives or desires (Schegloff, 2007 p. 61).

The sense of a given utterance inheres in its particular placement in a sequence of utterances, and interlocutors consult what went before and, especially, how the utterance is treated in the immediately subsequent utterance in order to arrive at a practical, 'here-and-now', specification of its sense. (Watson, 1994, p. 182)

It is in the response to an action that the recipients of this action display their understanding of what is going on. The sequential organization of interaction provides the participants with a *proof procedure* (Sacks, Schegloff, & Jefferson, 1974) to evaluate whether or not their understanding of what is going on is shared.

It is a systematic consequence of the turn-taking organization of conversation that it obliges its participants to display to each other, in a turn's talk, their understanding of the other turn's talk. More generally, a turn's talk will be heard as directed to a prior turn's talk, unless special techniques are used to locate some other talk to which it is directed. Regularly, then, a turn's talk will display its speaker's understanding of a prior turn's talk, and whatever other talk it makes itself as directed to. (Sacks, Schegloff, & Jefferson, 1974, p. 44)¹²

Monitoring the unfolding of an activity's sequential organization is primarily a source for members' themselves to work out an understanding of the actions being undertaken. Being a public affair, however, the sequential organization of displayed understandings is also available for professional analysis, providing scientists with "a proof criterion (and a search procedure) for the analysis of what a turn's talk is occupied with" (Sacks, Schegloff, & Jefferson, 1974, p. 45).

One of the fundamental sequential features of talk-in-interaction acknowledged by conversation analytical studies is *adjacency pairs*. This structure consists of two turns – a first pair-part and a second pair-part – where the first turn anticipates the second (Sacks, 1992, e.g. vol. II, p. 521–532). A basic example would be a greeting; saying "Hello" to someone makes a return-greeting an expected next thing to happen. Question–answer, invitation–acceptance/rejection and offer–acceptance/rejection are other examples of adjacency pairs often featured in conversations. In an adjacency pair, the first part does not only make the second part expected, it will also make the non-appearance of the second into a matter of an *officially absent action* (Schegloff, 1968) – the lack of response to a greeting would most definitely get noticed and require further explanation and interpretation. Schegloff (1968) introduces the notion of *conditional relevance* to describe

¹² The principles described by Sacks and colleagues are not only valid for verbal interaction but just as relevant to interaction more generally – the participants could just as well display their understanding using gestures, gaze or any other embodied action.

this close tie between two conversational elements, making it possible incorporate also missing conversational items as part of the analysis.

Since the early 1980s, research on human interaction informed by conversation analysis has gradually expanded the analysis to include also the embodied conduct of the interlocutors and not only their verbal contributions¹³. This development can partly be explained by the development of easily accessible recording techniques capturing moving images together with sound, which makes it possible to record the embodied conduct of the interlocutors along with their vocal contributions. As discussed in the previous section, the scope of conversation analysis lies beyond analysing conversations and Sacks himself acknowledged the availability of recording equipment as a reason for focusing solely on vocal interaction and not include, for example, gestures and facial expressions (Sacks, 1992, vol. II, p. 26–27). Video recordings of interaction makes a larger range of communicative resources available for repeated study and the analytical scope – previously limited perhaps rather for practical reasons than because of theoretical conviction – can thereby be broadened.

Instructional work and learning

The activities investigated as part of this thesis are in different ways concerned with and directed towards students' learning of craft-related skills. While there might be a variety of reasons for taking part in these activities – such as students' need for the course credits or enjoyment of the activities as a nice social gathering or teachers' dependency on their salary – it seems safe to say that learning is among the more prominent objectives oriented towards by the members to these activities. The general focus of the empirical studies presented is the instructional work undertaken in the analysed activities. As stated in the introduction, instructional work is intended to direct the attention towards instructions as social actions and the understanding of teaching and learning as inherently interactive. In this sense, the current studies relate to socio-cultural approaches to learning where learning, knowing and understanding are conceptualised as contingent on social, material and cultural aspects – what a person learns, knows and understands is seen as dependent on the situation and the kind of resources available at the moment (Lave, 1993; Lave & Wenger, 1991; Rogoff, 2003; Säljö, 2005).

¹³ Mondada (2006) describes how already in the early 1970s, Charles and Marjorie Goodwin began to work with video and organised seminars using video data. About the same time in the UK, Christian Heath made video recordings of medical consultations that were later published in his dissertation (Heath, 1986).

Instead of something individualised, both the development and use of knowledge is portrayed as first and foremost interactively organised. The object of study in this thesis is, however, the detailed and *observable* practices constituting instructional activities. The studies are thereby restricted to analyses of what teachers and students do when they engaging in activities directed towards learning of craft – studying activities directed towards learning is not identical to studying learning.

The four studies are based on video recordings of teachers and students engaging in interaction where the teacher in some way or other explains, guides, corrects, verifies, demonstrates, etc. – in brief, instructs – the students about some aspects related to skills in textile craft. The students are simultaneously asking advice, seeking confirmation, looking at demonstrations, attempting techniques, working with assignments, etc. – in brief, being instructed – in these skills. This is the kind of action available from video recordings and what the analyses in the empirical studies are based on. Claims in the studies are, consequentially, made in relation to the kind of actions available for analysis. Even though learning is at the heart of the analysed activities, the studies do not set out to investigate students' learning in the analysed episodes. As stated previously, the empirical studies aim to explicate members' methods for producing instructional activities and thereby take a non-ironic stance towards the analysed interaction – it is the interactive organisation and the achieved instructional work that is of interest. This means refraining from making normative judgments regarding teachers' work and avoiding questions such as whether or not students have correctly learnt something in the analysed activities. Instead the focus is directed towards how teachers and students organise their actions, how they are themselves oriented towards the activities and the methods they use to come to the conclusion that this someone has, in fact, learnt something.

While the studies do not engage in discussions of what the students learn in relation to some external criteria or what should ideally be the educational focus in the analysed activities, the studies still aim to contribute to understandings of teaching and learning. In the analyses, the details of the intricate interplay between teachers' and students' actions are analysed – the teachers' actions are described in relation to the students' response and vice versa. The studies thereby show, for example, how teachers' instructions are received and acted upon in educational activities and how students' use of previous instructions and their displays of understanding – or lack thereof – are used in the organisation of further instructional sequences. The studies highlight issues related to conditions for learning and instruction in craft by addressing questions concerning educational interaction and the reciprocal organisation of instructions and instructed actions.

Objects and embodiment: An orientation to the literature

In this chapter, results from related studies guided by the premises introduced in chapter 3 are presented. In terms of empirical studies, various directions in research guided by ethnomethodology and conversation analysis have developed. The studies included in this thesis builds on a burgeoning collection of empirical research focusing on the organization of specific activities and at the same time grounding the results in detailed analysis of recorded interaction, some of which are summarised in this chapter. These studies acknowledges both ethnomethodology and conversation analysis as an intellectual heritage and investigates the temporal unfolding of activities with a focus on social action as embodied and interrelated to a material surrounding. While not being an exclusive characteristic, the intended body of research has largely been concerned with professional interaction – both in relation to how professional interaction is organised and how professional competences are attended to as an educational topic.

An important point of departure for the intended studies is an acknowledgment that participants make use of a variety of resources including vocal actions, gaze, gestures, mimics, bodily orientation, touch, and manipulation of objects when building actions together. Moreover, the gazing, gesturing, touching and so on are done and oriented towards in a material world, which plays a fundamental part in how these actions are oriented understood. The interplay between vocal contributions, bodily conduct and the material surrounding has been described using the metaphor of *an ecology* (Goodwin, 2003b, p. 35) indicating the existence of a number of communicative resources evolving when multiple participants build relevant meanings and actions together. As frequently argued, the various resources used for communication ought to be understood as mutually supporting and co-dependent systems working together when conveying meaning rather than distinctive, self-containing meaning making systems possible to investigate as separate entities (Goodwin, 1981, 2007; Heath & Hindmarsh, 2002; Streeck, Goodwin & LeBaron, 2011). Early studies of embodied interactions have, for example, shown how the gaze of the recipient play an important role in the construction of vocal contributions (Goodwin, 1980) and demonstrated how

gestures are used to initiate certain types of conversational actions (Schegloff, 1984). Also acknowledged is how standardised gestures such as headshakes are not understood as having context-free meaning but made sense of “with reference to the particulars of the local environment in which they occur” (Goodwin, 1980, p. 308). The position of a body (or parts of a body) in the surrounding environment has, moreover, been demonstrated to be a very effective communicative resource. An obvious example of this would be the practice of pointing¹⁴ – few actions of pointing are understandable without access to what the pointing is directed towards. Goodwin (2003a) has focused on another example and shown how the meaning of bodies in rugby is intimately tied to the material surrounding and retrieved only together with their position on the field: running past certain lines means performing important actions in the game while running in relation to other lines does not really have any impact on the game at all: “To perform relevant action in the game, a body must use structures that are located outside itself. The runner’s body is given meaning by the contextual field it is embedded within” (p. 21). In sum, when trying to understand some piece of human activity, the *organisation* of the different communicative resources are of fundamental importance: “the mutual elaboration of different materials in different media that have a symbiotic organization in which a whole that is greater than, and different from, any single part is created” (Goodwin, 2007, p. 195). This kind of embodied and situated understanding of social action is the point of departure for the studies reported in this chapter as well as the studies included as the empirical part of this thesis.

Apart from the handful of studies of sloyd education introduced in chapter 2, studies focusing on interactive aspects of teaching and learning in sloyd-related domains are virtually non-existent. Ethnographic and phenomenological accounts of the development of skills in craft have been provided by, for example, Keller and Keller (e.g. 1993, 1996), Jernström (2000), Knutes (2009), Reitan (2007) and Ingold (2000, 2006) but these studies do not explicitly focus on the interactive organisation of educational activities. The studies reported on in this overview are therefor primarily found outside the domain of craft education but share characteristic features with craft activities. Activities in craft – educational or not – revolve around manual actions and the making of objects. These features have been taken as a point of departure and have resulted in a collection of empirical studies exemplifying interactionally oriented ethnomethodological studies of instructional work related to the work in textile craft education. The collection provides an analytic context for the studies included in this thesis and shows how issues similar to those focused on in the current studies have previously been dis-

¹⁴ Pointing as such has, however, been shown to be a rather intricate activity, see e.g. Goodwin (2003b, 2006).

cussed and analysed. The reported studies are presented in two separate sections focusing on *instructional work and bodily dimensions of knowing* and *material objects and the organisation of social action*, respectively. This division does not straightforwardly correspond to the content of the reported studies as several of them concern issues related to both materiality and embodiment. The separation is instead mainly used to make the sections easier to read and comprehend.

Instructional work and bodily dimensions of knowing

In educational contexts, the ability to determine whether or not a student shares a certain way of conceptualizing a specific topic is highly relevant. In relation to such issues, Hindmarsh, Reynolds and Dunne (2011) investigate practices of producing and assessing understanding in the work and training at student dental clinics. Using a distinction between *claims* and *exhibits* of understanding suggested by Sacks (1992, vol. II, p. 252) as a point of departure, Hindmarsh, Reynolds and Dunne examine the resources teachers use in their work of assessing students' understanding. The specific focus of the study is the unpacking of "resources that encourage a demonstrator to pursue further exhibits of understanding" (Hindmarsh, Reynolds, & Dunne, 2011, p. 491). The work at the training clinic involves the students observing the body of a competent professional at work in order to shape their own bodily practice in accordance with the profession. The analyses show how bodily conduct of the dental students (viewed in relation to the body of the patient) is just as much a source for the assessment of student understanding as are their verbal contributions to the discussion. The demonstrators in the study are sensitive to the students' positioning of their bodies in relation to the material domain of scrutiny (the patient's mouth) in their judgements of whether or not they are actually, for example, seeing what they claim to see. As the demonstrators cannot see for themselves what the students are actually seeing, they need to rely on other resources in their judgements and "certain kinds of 'looking' are sometimes seen by demonstrators as potential evidence of a problem of understanding and in these cases a more adequate exhibit is pursued" (Hindmarsh, Reynolds, & Dunne, 2011, p. 497). Even if a student claims to understand a specific matter, the teacher might find reason to question the student's understanding if his/her bodily conduct does not match this claim: "while the talk may simply take the form of a claim of understanding, the body provides an exhibit to support or undermine the claim" (Hindmarsh, Reynolds, & Dunne, 2011, p. 500). However, bodily conduct is not only a resource for teachers to assess students' understanding. As argued by the authors, bodily conduct and bodies' positioning in the ma-

terial world is just as much a *resource for the students* to display their knowledge and understanding to the demonstrators. By, for example, positioning oneself in certain ways or moving one's body at a specific time, it is possible for the students to demonstrate competence in relation to the undertaken activity.

In an earlier study of similar issues, Hindmarsh and Pilnick (2007) investigated how the orientation to the body of others contributes to the organization of anaesthetic work in a teaching hospital. The analysed episodes show a number of resources the supervising anaesthetist can use when trying to determine a students' grasp of what the work in the anaesthetic room is like. In a situation where the anaesthetist asks a student if he has visually detected some feature, the answer "I think so" presents some troubles if it is not accompanied by a demonstration of what it is the student claims to have detected. Similar to the dentist demonstrator, the anaesthetist cannot see for himself what it is the student is in fact looking at and what it is he thinks he can see. Instead, the anaesthetist uses his expert knowledge of the activity at hand and his embodied experience of anaesthetics to assess the viewpoint of the student. "The anaesthetist's expertise is in making sense of the embodied conduct of the student in order to make available the seemingly 'hidden' and subjective perspective of the student" (Hindmarsh & Pilnick, 2007, p. 1412). In this way the anaesthetist "cannot only recognize that the student is having difficulty but also give a sense as to where those difficulties might lie" (ibid).

Related to the evaluation of competences and understanding, C. Goodwin (e.g. Goodwin, 2003a, 2003b) has in a number of studies investigated archaeologists doing fieldwork. Even though the argumentation is not specific to educational practices, the activities analysed are instances of learning and instruction. Studies of instructional sequences have the potential to not only to reveal something about what teaching and learning are like; analysis of educational episodes are also a fruitful resource when trying to understand what an activity is all about. In educational activities, the relevant aspects of the activity in focus are presented and made available for the student to learn. Important features and problematic steps are explicitly discussed and this exposition of the key features of an activity will then also be available to the analyst, making educational episodes a kind of *perspicuous setting* (Garfinkel, 2002, p. 181 ff) for the study of human activities. In the investigated activities, novice archaeologists, for instance, learn to see and outline colour differences in an excavation site under the supervision of a senior colleague. In these analyses, the relation between bodies and the material world is a central concern, as the bodies of the archaeologist are here intertwined with and changing the material world. In this setting, *environmentally coupled practices of gesturing* (Goodwin, 2007) are not only used to define features

and show a newcomer how to perceive a certain element – gestures that act upon the material world are also used to assess whether or not the participants share their understanding of the examined phenomena. When one of the archaeology students has performed her tracing of the feature being examined, the teacher performs another trace slightly outside of the one outlined by the student.

The inscription provides a precise record, enduring in time, that the professor can use to evaluate the work-relevant seeing of her student. In turn, within this public field of visible, meaningful action, the student can see how the professor would organize the very same materials that she has been working with. Inscription here provides an arena within which the judgments required to perform the practices used to constitute the phenomena that define the work of a community (e.g., the mapping of features within archaeology) can be publicly calibrated. (Goodwin, 2003a, pp. 232–233)

Moreover, comparing the action of *pointing out a feature* in the dirt and the *tracing of its outline* with an archaeological tool, Goodwin (2003b, p. 34) provides a more general argument that these two actions should be viewed not as belonging to separate classes of actions (being, for example, a gesture and a manipulation) but rather as points on a continuum. It is thus proposed that manipulations of the material world should be seen as a kind of gesture among others with the suggestion of “an intimate, systematic progression [...] from tracing to inscription” (Goodwin, 2003a, p. 231).

In learning of competences involving bodily skills, physical guidance is a common instructional practice. One of the few studies investigating the interactive organisation of bodily instructions analyses a midwife instructing a student on how to perform an abdominal palpation (Nishizaka, 2007). In midwifery, tactile examinations of the pregnant woman’s body provide crucial information of the woman’s and the foetus’ conditions and are routinely performed. The study describes instructional work directed towards the skill of examining the internal conditions of another human being with the use of one’s own hands. As part of such instructions, Nishizaka describes a practice where the midwife places her own hand upon the student’s hand that, in turn, touches the pregnant woman’s body. It is argued to that this procedure makes it easier for the parties to orient themselves in the same way to specific locations of the woman’s body: “The midwife’s hand is evidently oriented to the same thing as the student’s hand is oriented to, and thus the midwife is visibly and normatively qualified to tactilely perceive the very object that the student tactilely perceives.” (Nishizaka, 2007, p. 211) Nishizaka describes the instructional work carried out in this context as a multi-sensory accomplishment and the referential practices relied upon are distributed primarily between tactile and visual perception. Tactile and bodily dimensions of in-

structional work are made relevant, for example, as the midwife, when pointing out specific parts of the body being examined, first uses descriptions of embodied sensations – for example, a hard and round place – and thereafter gives a disciplinary terminology for that place – the baby’s buttocks: “when one attempts to ostensibly define an object to be examined for a student who is not fully competent, first highlighting the sensory structure caused immediately on the student’s hand, and then naming what the sensory structure represents, must be an appropriate procedure” (Nishizaka, 2007, p. 208).

In another study from the same context, Nishizaka (2011) analyses midwives’ tactile examinations of areas of pregnant women’s bodies not available to visual inspections. Midwifery is dependent on the midwife being able to “show” a pregnant woman the precise location that is currently being palpated. In this study, a pregnant woman is instructed in a specific preparatory procedure performed inside her own body (a preparation of the birth canal) and the focus is on elucidating practices of referencing something when touch is a crucial resource for accomplishing the reference. In the instructive sequence analysed, the woman does not only have to understand the midwife’s report of her actions being performed outside the woman’s visual reach, she also has to learn how to perform them herself. The success of the referential practice can be seen as a prerequisite of the accomplishment of understanding and for the woman to be able to follow the instructions. The study describes the practice of establishing a current position as an important resource for establishing reference in interaction heavily reliant on tactile information. By determining a common and known landmark, this location can be used as a point of departure for further interaction and instructional work: “What the midwife is currently touching is heard as the starting point, from where the current activity should move towards what can be analysed as its focus (Nishizaka, 2011, p. 510). Another resource for differentiating tactilely available locations described in the study is the use of spatial patterning. It is argued that providing a familiar pattern as a resource for recognising what is being tactilely perceived facilitates the recognition of spatial structures not visually available.

Multi-sensoric instructional work has also been studied and explicated in the context of physiotherapy (Martin, 2004, Martin & Sahlström, 2010). Physiotherapy is concerned with the rehabilitation of human movement; physiotherapists instruct patients to move their body in physiologically and ergonomically correct ways. Similar to several other domains reported from here, patients are in this context recurrently faced with the demand of both understanding instructions for movements while simultaneously mastering the skills of performing those movements. In physiotherapy, the body is “both the rehabilitation ‘object’ and the resource and tool used to accomplish the rehabilitation task” (Martin, 2004, p. 119). Even though references to the

body have many resemblances with the use of external meditational artefacts, the body is not treated as separate from the patient's total perception. The body is instead described as "a both internal and external resource in the interactional interplay when it is incorporated through feeling and body awareness and made the visual focus of interactional endeavours" (Martin, 2004, p. 119). Embodied aspects related to touch and feeling are also highlighted as important semiotic resources in the work of establishing reference when sight is not available as in the case when a patient is working with muscles located on the back of the body. Through a combination of verbal and bodily resources, the physiotherapist and the patient manage to coordinate their understandings of what is going on when only one of them has visual access to the area being discussed.

In the context of dance, instructions and bodily competences are analysed through descriptions of so-called *body quotes* (Keevallik, 2010). A main objective in dance instruction is to achieve a correct bodily performance and the focus of the study is the practice of dance teachers to copy students' dancing with their own bodies as part of instructive activities. The study describes practices of quoting students' bodies as overwhelmingly used in demonstrations of incorrect performances. Similar to physiotherapy, the body in this kind of instructive practice both a topic for instruction as well as a resource for instructing. In the analyses, body quotes in dance instruction are described to serve the purpose of contrasting incorrect movements with correct ones and a distinctive feature of body quotes is that they are frequently included as exaggerated versions of the original performance. Quoting students' bodies is a way of giving them access to their own performance and establishing a base for corrections. With the use of body quotes, teachers are able to restore a prior movement in a way that fits their current instructive project: "bodily quotations are used to extract problematic behavior as if from just-observed prior action and to present it for public scrutiny" (Keevallik, 2010, p. 424). The authorship of the quoted performance is, however, not ascribed to a specific individual but instead blurred by the use of generic referencing. In this sense, direct blame for incorrect performance can be avoided. While exaggerating faulty performances can be seen as taking a negative stance towards the performance, the study argues that a pedagogical function of caricatures is to enhance contrasts between correct and incorrect performance. In the analyses, timing and sequential placement are presented as crucial in order for body quotes to be seen as such. For instance, the study argues that body quotes have to be carried out shortly after the problematic performance in order to show the connection between the two performances. The bodily actions of a dance teacher are furthermore described as inseparable from vocal contributions. Teachers' talk functions, for example, to "reveal the source of the quote, but it can also frame the demonstrations con-

trastively as being correct or incorrect” (Keevallik, 2010, p. 414). Teachers’ talk and bodily conduct mutually elaborate on each other to achieve the corrective sequence. The study concludes that bodies can be quoted very similar to words and vocalisations. In body quotes, “the teacher’s body simultaneously represents the students’ bodies and comments on it in much the same way as prosodic devices can show the simultaneous layering of voices in verbal quotes” (Keevallik, 2010, p. 419).

With a primary focus on describing *learning* of competences reliant on manual action from an interactional perspective, Melander (2009) and Melander and Sahlström (2009) analyse a series of lectures on aviation, both in a classroom context and conducted inside a flying airplane. The results presented are related to the construction of learning content and the study argues that “embodied demonstrations and gestures constituted an intrinsic part of the evolving formulation of the content of learning” (Melander, 2009, p. 215). The study shows, among other things, how the participants use gestures to make relevant a connection between the different settings for the instructional activities and thereby “build relations between different material settings, thus enacting for them relevant parts of the activities in a here-and-now” (Melander, 2009, p. 215–216). Moreover, the analyses also focus on how an orientation towards *embodied sensations* related to the learning content is used as part of the instructional activities. In analysed activities, bodily perception is topicalized as an intrinsic part of performing the relevant flying actions and also connected to technical aspects of aviation.

Another study of learning in interaction set out to examine how ‘situated learning’ is accomplished in practice in surgical training (Sanchez-Svensson, Luff & Heath, 2009). In the study, learning surgery is described as dependent on both formal instruction and opportunities to participate in the performance of surgical procedures; doing surgery “requires a fine mix of intellectual, technical and manual skills” (p. 892). In the study, surgical operations where trainee surgeons observe and in some cases also participate in the procedures are analysed. The study argues that in order to develop relevant competences in surgery, trainee surgeons need to be given opportunities to witness how techniques and procedures are applied to and are contingent on specific medical cases. Participating as observers of surgical operations “provides trainees with ways of embedding a formal procedure with the reasoned and relevant contingencies of the case on hand; in such ways, a new member comes to know and skilfully apply rules of an organisation” (Sanchez-Svensson, Luff & Heath, 2009, p. 904). In other words, it is argued that surgical competences rely on the availability of embodied surgical examples as a way of giving formally described procedures an occasioned and practical meaning.

In relation to embodied sensations and bodily perception in manual activities, David Sudnow's (1978, and a rewritten version 2001) phenomenological account of learning to play the piano should briefly be mentioned. Sudnow portrays how the human hand learns to play piano by analysing his own gradual achievement of jazz competences divided into three phases called *beginnings*, *going for the sounds* and *going for the jazz*. In the study, piano playing and piano listening are described as truly interrelated activities. Learning to play the piano involves changing one's perception along with the development of piano-specific movements of the body:

“As I found next sounds coming up, it wasn't as though I'd learned about the keyboard that by looking down I could tell what a regarded note would sound like. I don't have that skill, not do many other musicians. I could tell what a note would sound like because it was a next sound, because my hand was so engaged with the keyboard that through its configurations and potentialities it laid out a setting of sounding places right up ahead of itself.” (Sudnow, 2001, p. 47)

Sudnow describes the gradual shift from analytical choices of notes and paths on the keyboard into a “handful choosing” (p. 123) where he finally can observe his own hands making jazz. As Sudnow does not use recorded interaction but reports from *his own experiences* of learning to become a jazz pianist, this study differs methodologically from the other studies included in this overview as well as the studies included in this thesis. Still, Sudnow's original work nevertheless provides insights of relevance for the development of embodied competences. Similar to learning the piano, the development of craft competences involves perceptual changes – auditory, visual and haptic – that go along with the body's increasing skills in doing craft (cf. Johansson & Illum, 2009).

Material objects and the organisation of social action

Inanimate objects play an important role in the organization of human activities. In studies of craft activities, the acknowledgment of the material world as a relevant communicative resource is of crucial importance considering that the activity is reliant on the handling and making of material objects. Despite the fact that the daily business of people is filled with material things, studies focusing on the role objects play in social life and in what ways they are incorporated into the production of meaningful actions are rare (Heath, Knoblauch & Luff, 2000; Hindmarsh & Heath, 2003). There is, however, a growing interest in incorporating objects in interactionally focused studies. For instance, within the corpus of research commonly known

as *workplace studies*, analyses of the coordination of complex activities accomplished with and through material objects (especially technical artefacts) are recurrently produced (e.g. Heath & Button, 2002; Heath & Luff, 2000; Hindmarsh & Heath, 2007; Suchman, 2000). While the contexts examined and the kind of objects focused on in the analyses differ, a majority of studies are concerned with complex organisations where several people (sometimes separated spatially or temporally) work to solve composite tasks involving the use of specialised technological systems (e.g. Goodwin & Goodwin, 1996; Heath & Luff, 1996; Mondada 2006). In the overview presented here both studies from educational and professional contexts are included. Considering the kind of objects used and produced in the craft activities reported from in this thesis, the chosen studies tend to focus on non-technological contexts including handheld and manually constructed objects.

With an explicit focus on how objects are used as communicative resources, Streeck (1996) questions the distinction commonly drawn between symbols and material objects. Using the example of a business meeting, Streeck demonstrates how the boundary between gestures and the manipulation of material things are in fact better described as “*a continuum of symbolization*” (Streeck, 1996, p. 382). In the analysed examples, the objects being discussed (cookies) are at the beginning of the meeting talked about and referred to as being just cookies. As the meeting proceeds, the cookies become *cookies arranged in a symbolic manner* when outlined on the meeting table to be compared, and later on when used as an example of a type of cookies, one of the cookies becomes a representative – an indexical sign – of a whole class. At the end of the meeting, the cookies discussed are no longer referenced as pastries at all; instead, they are used to represent the companies producing them. The cookies are no longer just a thing but have become situated symbols. Even though traditionally studied and conceptualized as two separate classes, in communicative situations objects and symbols are not easily divided. When trying to communicate something, people use whatever they have at hand that can serve the purpose of their communicative projects (Streeck, 1996, p. 383). The study shows a variety of ways material object can be incorporated in social action (referenced, symbolically arranged, as indexical signs or situated symbols) and also how the communicative status of one and the same object may vary as the activity unfolds.

Different ways of orienting towards material objects have also been investigated in the context of architectural education (Lymer, 2010). With an interest in how architectural competences are made available to students, Lymer analyses critique sessions in architectural education where students’ models are exhibited, discussed and evaluated. In architecture, the professional competences consist of planning and designing buildings as well as constructing presentations of those building as aids to communicate a pro-

posed design. The physical objects presented in the critique sessions are therefore not only treated as objects in themselves but as renderings of something else – the objects presented are *completed designs* in that they are finished models and sketches presented for assessment, but at the same time they are *proposals for potential buildings* possibly realized and completed in the future. Assessments and instructions therefore alternate between scrutinizing these proposed buildings as inhabited spaces and the designed object presented by the students. Building on Goodwin's concept of *professional vision* (Goodwin, 1994), Lymer suggests that this makes relevant two different ways of orienting towards an object presented by a student, "it can be *seen through* so as to afford assessment of a proposed built environment, but it is also *looked at* as a designed object in itself" (Lymer, 2009, p. 146). In relation to the second way of approaching the presentations, an orientation towards how a potential outside viewer (for example, a client or a construction company) would understand the students' work is also revealed. The objects discussed at critique sessions are then incorporated into the activity in three different ways: as a means of accessing the proposed buildings designed by the students; as a designed object in itself and as part of a discussion about how imagined outside viewers might look at the presentations. The ability to see the building in the presentation – to perceive the presented objects as ways into proposed future buildings – constitutes a fundamental aspect of architectural competences. The students are, however, not only introduced to the professional architect's way of orienting towards architectural models, they are also trained to take a non-architectural approach to their designed objects and to see with the eyes of other professions.

In relation to professional ways of perceiving objects, Koschmann and colleagues (2011) analyses a surgery performed at a teaching hospital. The study investigates "practices of producing objects as understood" (p. 523) as well as the "the role that objects, so recognized, play in producing procedures as procedures" (p. 522). To successfully carry out surgical procedures, some thing needs to be realised as the object-for-the-purpose-of-this-surgery, and at a teaching hospital, the competences for recognising relevant body structures (i.e. the relevant objects for surgery) are also attended to as instructional matters. In the episodes analysed, a medical student and a surgical resident are instructed in the relevant procedures by a senior surgeon. The study analyses the situated practice of producing local features as discussables and investigates the relation of noted objects to the unfolding procedures within which they emerge (p. 525). In the study, the targeted object and the relevant procedures are seen as reflexively related – as procedures produce the relevant objects, objects are simultaneously a necessary requirement for the procedures to be performed (p. 534). The analyses describe how a variety of resources such as textbook formulations of the relevant

structures, educational questions and answers, collaborative attendance to ostensive demonstrations and surgical-relevant actions performed on surrounding structures are used in the steps toward the final realisation of the relevant object. Performing the actual procedure was then described as the clearest possible ostensive demonstration of what was to be taken to be the relevant-object-for-the-purpose-of-this-surgery.

In another study of objects in educational activities, Hindmarsh and Heath (2003) investigated design students' presentations of their work in progress. This study (which also includes examples from medical consultations) focuses on how talk and bodily conduct are used to animate objects and envision properties of those objects that might otherwise have remained hidden. Also in this study, it becomes evident that the objects in the analysed episodes are not just referred to – they are incorporated into the embodied discourse, infused with action and character and made an important part of social action. The objects discussed are in various states of completion and the students often present sketch-work and prototypes. The analyses shows how the object being presented “switches from being the explicit *topic* of the talk to being an interactional *resource*” (Hindmarsh & Heath, 2003, p. 49). The study shows how the bodies of the students are an integral part of demonstrating material qualities of the proposed designs – by moving their bodies in a specific way, the students illustrate what it might be like to use a particular design and the material qualities of the object-yet-to-be-produced are brought into the classroom. These qualities are not available through the actual objects presented to the audience but are visualized by means of the bodily conduct of the designer who “brings to life the materials, and relevant properties of the materials” (Hindmarsh & Heath, 2003, p. 51). In the examples analysed, presenting craftwork to an audience, then, is not something done in isolation; as shown by the authors, it is related to the anticipated user and the activities in which the object is expected to be handled. The analysed examples show how inanimate objects are integrated in social action and how properties not available by means of the unaided objects are brought into the present discourse.

Along similar lines, Murphy (2004, 2005) uses examples from an architectural office to show how physical objects play a significant role for imagination – an activity often thought of as purely cognitive and individual. As previously mentioned, for architects, imagining buildings in progress and the ability to communicate these imaginations to their co-workers is a crucial part of their professional competence and references to buildings in progress are often made with and through architectural drawings of them. Even though these architectural plans of the buildings are extremely rich in information, as representational objects they can only provide static images of the buildings in progress. In Murphy's work, imagination is viewed as a social

and embodied activity supported by material objects; “imagining is accomplished not just by one architect who reports her ideas to the team, but by a group effort in which the architects use each others’ talk and gestures, as well as the architectural drawing” (Murphy, 2005, p. 140). What is being imagined by the architects in the studies consists of gestures and drawings combined with vocal descriptions of possible scenarios. The imagery presented is a combination of all the features used to bring it into action, the imagined scenario emerges from the intersection of all the elements involved and is not determined by any of the included resources. Imagining as a social activity is contingent on “the ability to creatively make talk, gestures, and material objects stand in for or signify things that are not immediately perceived, and in the processes treat them as if they were” (Murphy, 2004, p. 269).

As mentioned previously, a common field for studying objects in social interaction is workplaces. In a study of the work at a telecommunication control centre, the role inanimate objects play in the organization of the collaborative activities is investigated in relation to the personnel’s displayed understanding of those objects (Hindmarsh & Heath, 2000). Work in the control centre is organized around a number of communication technologies providing representations of important information: computer screens, displays, charts and paper documents and provide a necessary resource for the personnel to identify and discuss relevant work tasks. At the centre, these objects often make up the centre of collegial collaboration and the main focus of the study is the interactive accomplishment of this object-centred coordination of work and the analyses aim to “examine how personnel within a complex working environment refer to and examine objects and, through their interaction, constitute the occasioned sense and relevance of particular features of those objects within the course of their workplace activities” (p. 527). The work of establishing a shared object and a mutual understanding of that object is a thoroughly embodied activity in that it involves, for example, talking, looking and pointing and the practices through which personnel at the telecommunication centre constitute intersubjective objects are “*embodied, locally managed and ceaselessly reflexive* to the activity at hand” (Hindmarsh & Heath, 2000, p. 556). An attempt to answer a phone call – an inherently bodily activity – might reveal how a member of the staff orients him/herself towards a flashing icon on a computer screen. Similarly, the way someone is looking at an object can disclose both shared attention as well as problems in finding the current object. Looking in the wrong direction will reveal that the co-workers in fact do not share the object of discussion, even though they might claim to be talking about the same thing. In one of the episodes analysed, two colleagues at the control centre assumed that they were referring to the same case. It had been pointed to and there had not

been any displayed problems in finding it on the screen. Moving on in their attempts to solve the problem, they discovered that they were in fact not talking about the same case at all. As shown by the authors, it is possible to produce a sequentially appropriate display of understanding and participants can assume that they have secured a common referent, and still this assumption can prove to be wrong. According to the authors, this means that

participants' orientations toward particular objects ongoingly provide a resource for their interlocutors to ascertain whether they are indeed looking at the same object and in the same way. That is to say, each and every subsequent action by the recipient provides further evidence for their coparticipant to establish whether they are looking at the same object, and vice versa. (Hindmarsh & Heath, 2000, p. 550)

Collaborative viewings of objects are crucial for carrying out the work at the telecommunication centre and the mutual understanding of these objects determine specific courses of action to be carried out by specific participants in order to solve problems and manage work-relevant tasks during the day. The work-relevant objects are described as “organizational hubs in which colleagues come together to discuss them and move apart with new and projected courses of action” (Hindmarsh & Heath, 2000, p. 554). As a matter of fact, the ability to ensure a shared understanding of a specific object determines the success or failure of the projected actions, making the practices through which inter-individual objects are constituted crucial for the work at the telecommunication centre.

Concluding remarks

The studies reported discuss two central characteristics of educational activities directed towards skills in textile craft. Studies analysing instructional work, embodied conduct and manual action describe, among other things, characteristics of bodily instructive resources (Nishizaka, 2007, 2011; Martin, 2004; Martin & Sahlström, 2010; Keevallik, 2010), how embodied conduct are used in practices of both assessing and displaying understanding (Hindmarsh, Reynolds, & Dunne, 2011; Hindmarsh & Pillnick, 2007; Goodwin, 2003a) and how embodied demonstrations as well as topicalisations of embodied experiences serve to render instructional topics visible to students and make connections between formal descriptions and practical procedures (Sanches-Svensson, Luff, & Heath, 2009; Melander, 2009; Keevallik, 2010; Goodwin, 2003a). Studies focusing on material objects and the organisation of social action have shown how human activities are formed and organized by the fact that material objects are given a central role in

them and the presented results include observations concerning how objects discussed shift between being the topic of conversation and functioning as communicative resources (Streeck, 1996; Lymer, 2010; Hindmarsh & Heath, 2003), how objects are interactively defined and established as the object-for-the-current-activity (Koschmann et al., 2011; Hindmarsh & Heath, 2000) as well as how properties of objects not readily available are evoked and made available in communicative projects (Murphy, 2004, 2005; Hindmarsh & Heath, 2003).

The four studies included in this thesis are in line with the presented research, both in relation to the analytical approach taken and the kind of issues addressed. Instructional work related to bodily dimensions of knowing are, as previously stated, the central theme of the four studies and material objects are crucial in all the analysed activities. While craft-specific objects such as tools and materials are prominent in all the studies, in three of the four studies the analysed activities are concerned also with the making of objects. The interactive organisation in these activities is characterised by a joint focus on the *accomplishment* of a material object and both teachers and students are oriented towards its gradual development. When objects are included in studies of social actions, it is predominately the use of completed objects that is focused on. Also in analyses of interaction revolving around no-yet-finished objects and the planning for their future development as, for example, seen in Heath and Hindmarsh (2003) and Murphy (2004, 2005), it is the inclusion of such objects in the activities rather than the actual practice of making the objects that are primarily discussed. The organisation of actions where material objects are concretely being constructed is largely neglected as a topic of scientific investigation (but see Broth (2008) for analyses of the production of a rather different object – the TV-show). While the studies in the thesis are intimately related to previous studies of objects and social action, the ways objects feature in the analysed activities, however, in some respect differ from previous studies – while the object is at the centre of the activities, it is the practices involved in *making the object* rather than the object as such that the participants orient themselves towards.

Methods and educational contexts

Video-recordings of classroom interaction make up the empirical foundation of the research presented here. Since the late 1970s, there have been an increasing number of studies of educational practice based on video-recordings (Derry et al., 2010), and video-based research is making a substantial contribution to the “interactional turn in educational research” (Erickson, 2006, p. 177). In this chapter, choices related to the empirical material and the methods used in the studies are discussed and motivated together with an outline of the analytical work. Today, there are a number of books and articles discussing the use of audio-visual recording in studies of social actions (e.g. Heath et al., 2010; Jordan and Henderson, 1995; Goodwin, 1993) and the general characteristics of working with this kind of material are assumed to be fairly well known. Therefore, this chapter does not contrast video material to other kinds of data (e.g. the different potentials of video material and interview data) but primarily discusses issues related to research based on audio-visual materials and the specific choices made in relation to the four empirical studies presented here (for a comparative discussion of ethnomethodological video analysis and other qualitative research methods, see e.g. ten Have, 2004). The chapter starts with an introduction to the educational contexts investigated here together with an overview of the empirical material. Thereafter, the work resulting in the four empirical studies is outlined in three sections describing practices where important decisions are made: the documentation of activities, the analyses of the material and the creation of (re)presentations. These practices are “selectively reductive” (ten Have, 2004, p. 43) in the sense that features of the investigated activities are inevitably lost through them while, at the same time, a clearer focus on the phenomenon of interest is gained. It should be noted that the work undertaken in the project is probably better described as a series of iterative cycles than a linear development (cf. Derry et al., 2010, p. 8). The division into three sections following one after the other is therefore the result of an ambition to represent the work in a readable manner rather than a chronological description of how this work proceeded.

Educational context and empirical materials

The empirical material investigated in the studies consists of video recordings from teacher education programs specializing in sloyd. Lectures from three different programs have been followed for a period of roughly 10 weeks each. The choice of courses was guided by a wish to include material from different educational programs. As discussed in chapter 2, the organisation of teacher education specialising in sloyd varies between universities. While such differences are not discussed or attended to in the resulting empirical studies, at the beginning of this project it was considered advantageous to include material from several programs. The recorded material features 11 teachers (3 of them only participate in a session of student presentations that several teachers attended, these 3 teachers do not actually teach any classes included in the material) and approximately 80 students. The students attending the programs are of different ages, mostly between 20 and 30 years old. Both teachers and students are predominantly females with Swedish as their first language. The students' previous experiences in craft differ greatly – from complete novices to students as skilled in craft techniques as the teachers.

The three courses are valid for 15 ECTS each and were offered during the students' first year of studying craft. In one of the programs, the course followed was the very first course in craft that the students attended, in another it was the second course and in one of the programs the course was the last of four courses introducing various aspects of crafts. While the students attending their fourth course in craft were more experienced than the students taking their very first course in craft, all of the investigated courses were, in a sense, introductory courses as they all focused on craft techniques that had not previously been introduced to the students (in all the courses, the teachers, for example, started by explaining the basics of the specific craft techniques attended to in the course). There were a number of reasons for the choice to follow courses at an introductory level. Beginner students were believed to have not yet incorporated the norms and practices of the education to the same extent as one might expect last-year students to have done. By focusing on students new to the educational program, it was thought that more of what might be referred to as the educational culture would be explicitly addressed and thus available for analysis. Another reason was that my own knowledge of crafts at the time the recordings began was much the same as the average first-year student; that is, an enthusiastic beginner. With this in mind, my own increasing knowledge of craft was expected to be a resource when analysing the practices of teaching and learning craft. The assignments given to students were regularly undertaken with the ambition of learning the techniques taught in the lectures by following the teachers' recorded instructions. With more advanced courses in crafts, this approach

would have been difficult to undertake. Finally, there was also an assumption that craft is a largely unfamiliar activity for the majority of educational scientists. In introductory courses, the activities undertaken were expected to be less complex and it would therefore be easier to provide background information necessary for a reader to appreciate the analyses.

While the aims described in the syllabi for the three courses differ in some respects, there are three main areas common to all of them. All three syllabi state that students should acquire and/or enhance their competences in textile craft. This aim is sometimes specifically related to certain craft techniques and sometimes formulated more generally. All syllabi also include formulations concerning students' development of a creative and/or experimental approach when working with craft. As a third common goal, the syllabi state the students should be able to use their knowledge and skills for educational purposes. As previously stated, the studies are primarily directed towards craft education, which means that lectures with an exclusive pedagogical/didactic focus have not been included in the recordings, even though they were given as part of the investigated courses.

The lectures included in the study commonly included an introductory talk and/or demonstration by the teacher followed by hands-on assignments where the students practise the techniques discussed under the teacher's supervision. Teachers recurrently initiated shorter, occasioned demonstrations also during the time when the students were working on their assignments. The lectures were held in regular classrooms, sometimes organised with rows of desks facing the front of the classroom and sometimes arranged with a central table and chairs placed around it. For some of the lectures, specifically designed classrooms with domain-specific equipment such as tables suitable for textile printing, sewing machines and ironing equipment stationed in the rooms were used.

All together approximately 75 hours of video material have been recorded. The lectures were videotaped from beginning to end with a focus on either a group of students or the teacher, depending on the nature of the activities. Written material from the educational programs (e.g. assignment formulations and public information about the programs) as well as informal chats with teachers and students have also been used to some extent, but primarily as a means of deepening the understanding of the activities being captured on film and not as primary empirical material in itself. The specific episodes featuring in the individual studies are only a tiny fraction of the recorded material. An overview of the complete collection of recordings are provided in order to place these fragments in a wider context and present the kind of educational activities included in the recorded material.

Table 1: Video recording from course 1 – 28.5 hours recorded.

Technique	Number of students	Number of lectures	Teacher introduction (h)	Individual work (h)	Student presentations (h)
Textile printing	22	2	2	4	0
Yarn techniques	22	4	2.5	6.5	2
Embroidery, creative	22	4	2.5	5	2
Embroidery, traditional	22	1	0.5	1.5	0

Table 2: Video recording from course 2 – 18.5 hours recorded.

Technique	Number of students	Number of lectures	Teacher introduction (h)	Individual work (h)	Student presentations (h)
Wool felting	10	1	1.5	3	0
Yarn techniques	10	2	2.5	7.5	0
Textile materials	30	1	2		0
Individual projects	30	3		7*	2.5

Table 3: Video recording from course 3 – 26 hours recorded.

Technique	Number of students	Number of lectures	Teacher introduction (h)	Individual work (h)	Student presentations (h)
Embroidery, traditional	30/15	3	1.5	5.5	3.5
Textile printing	15	1	0.25	2.75	0
Leather sewing	15	1	0.5	1.5	0
Embroidery, montage	15	1	0.5	2.5	0

*voluntary supervision

As shown in the overview, the kind of educational activities featured in the material are characterised as 1) teacher introductions and lecturing, 2) students' individual work with their assignments and 3) student presentations of finished assignments. In table 4, the material is summarised using these different educational activities as a way of organising the recordings.

Table 4: Type of educational activities.

Kind of activity	Hours
Introductions/lectures	16.25
Individual work	46.75
Presentations	10

When making the recordings, specific techniques were not used as criteria for selecting lectures to include in the project. The criteria used for deciding what lecture to record were instead of a practical nature – all lectures focusing on craft made available for recording by the course organisation were covered as long as it was practically possible to fit them into the overall schedule. When sorted according to specific craft techniques, the recordings are distributed as follows:

Table 5: Craft techniques represented in the recorded material

Technique	Hours
Embroidery	25.0
Wool felting	4.5
Yarn techniques	21.0
Textile materials	2.0
Individual projects	9.5
Leather sewing	2.0
Textile printing	9.0

For being a film material used in a research projects (when reviewing them, transcribing them and analysing them, etc.), the material seems rather large. Still, these films only show a microscopic fraction of courses in craft taking place in teacher education programs in Sweden and the amount of material featuring in the actual studies is even smaller. As the interest is directed towards the embodied and occasioned character of instruction and instructed action craft, the analytical work pays close attention to the details of practical actions as they are sequentially organised. The focus of the present studies is thus on detailed analyses of recurrent practices and phenomena rather than general accounts of a larger material. Conducting scientific investigations resulting in such detailed accounts of social action is a time-consuming endeavour and the write-up of analyses based on detailed investigations of such materials requires extensive space in scientific journals. The amount of empirical material included is therefore to some extent dependent on practical circumstances – both time available for conducting studies and publication space are limited, which necessitates a compromise between level of detail in the analyses and the amount of data included.

Documenting educational activities

The development of recording techniques – first audio recordings and later audio-visual recordings – has been crucial for the analytical approach taken in the studies. For studies aimed at exploring the practices constituting educational activities, the use of audio-visual recordings are particularly well suited and offer analytical opportunities difficult to find in other kinds of empirical material. Video recordings create detailed and rich documentation of the activities studied and provide researchers with permanent records of – some version of – the activities under scrutiny. It is important to remember that despite being both rich and detailed as regards how activities are represented, video recordings are only able to capture activities from chosen perspectives and within a range limited by the camera lens. The unique possibility of audio-visual recordings to capture both vocal and embodied conduct constitutes an important resource for studies focusing on the interactive organization of textile craft education as it makes the bodily and material dimensions of craft education available for analyses (cf. Johansson, 2011). As formulated by Heath and colleagues (2010, p. 7): “video data enable the analyst to consider how the local ecology of objects, artefacts, texts, tools and technologies feature in and impact on the action and activity under scrutiny”.

The use of video recordings makes it possible to explore the local organization of practical action and practical reasoning as it is being *sequentially achieved* and makes possible an understanding of how various communicative resources work together: “Unlike paper and pencil notes, which are fundamentally retrospective accounts of the observer’s thinkings about the unfolding scene before him/her, the video or filmic record renders sights and sounds continuously and in real time.” (Macbeth, 1994, p. 191) With permanent records, it is also possible to study the activities under scrutiny over and over again. The re-playability of recordings also has the advantage that the analysed activities can be viewed together with other researchers and discussed in seminars and the like. The research presented here is in many respects the product of collaboration: discussing video clips at seminars and data sessions have resulted in valuable analytical ideas and the possibility of discussing tentative analyses with colleagues has been crucial for the reaching the final versions of the studies. Collaborative analytical work is, however, not only a productive way of generating promising ideas, it has also been described as a practice that “reveals and challenges idiosyncratic biases on the part of individual analysts” (Jordan & Henderson, 1995, p. 43). Moreover, in relation to finalized academic papers, permanent recordings of analysed activities enables a comparison of presented analyses with the data it is based on to be made, which gives fellow researchers the possibility to independently evaluate the quality of the work (Heath et al., 2010).

The work of recording

The recordings were made over a period of 18 months and, in a sense, the analytical work started already at this time – the nature of the recordings was guided by the kind of analysis anticipated and the video material also determines what kind of analysis will be possible to make (cf. Arminen, 2005, p. 69 and Heikkilä & Sahlström, 2003). Recording activities – in classrooms or elsewhere – always involves choosing some aspects and neglecting others. The common focus for four studies discussed here is aspects related to the teaching and learning of craft-related competences and the recordings were guided by the interest in the interactive activities rendering craft competences visible and learnable. A consequence of this was an aspiration to focus the recordings on instances when teachers were explicitly explaining, correcting, evaluating, showing, guiding, etc. the students as they engage in craft activities.

The recordings were made using a small DV camera and a tripod. When making the recordings, the camera was mostly aimed at two or three students working together or next to each other with me sitting somewhere close by but most often not standing behind it. During demonstrations and lectures, the teacher or the teacher together with some students were recorded. Different students have been filmed from time to time since there is no explicit interest in the students as individuals. At the beginning of the filming period, it proved difficult to foresee what kind of recordings would be useful from an analytical point of view. As the work proceeded, a more sophisticated sense of what would make a constructive material for analyses was developed. As highlighted by Goodwin (1993, p. 193), analysis and data collection are “both parts of a single recursive process” – increasing knowledge of the domain under study, reviews of already recorded material and the development of tentative analyses were all part of this process. Recording materials suitable for certain analyses have involved compromises where choosing some aspects meant losing others. To illustrate the iterative development of recording techniques relevant for this project and clarify what kind of compromises that have been made, a short example will be provided.

Some of the first recordings involve three students sitting next to each other, working with knitting projects. At this point, the ambition was to include all three of them since they were regularly talking to each other and seemed to cooperate. As the interaction was not only in the form of words, the camera filmed the upper bodies of all three of the students as well as some of the material they had in front of them on the table (picture 1). Later on, when this tape was reviewed, it was noted that this framing gave insufficient detail for the kind of analysis aimed for (an interest that later resulted in Study III). It was, for example, not possible to see what the students were pointing at or looking towards. In subsequent recordings, the position of the

camera was altered so as to capture students from the side rather than from the front. In this way, the recordings include more of what their hands were doing at the same time as their faces could be seen. The camera was positioned much closer to the students (picture 2) and, when necessary, the zoom of the camera was manually adjusted to for close-ups of hands and tools at critical moments (picture 3). Even though these alterations were necessary to be able to conduct the kind of analyses aimed at, this also meant that parts of the material surroundings had to be ignored and at times, when the participants' hands were in focus, aspects such as, for example, gaze and other facial expressions had to be omitted.



Picture 1. Recording with insufficient details.



Picture 2. Recording from a side angle.



Picture 3. Recording with close zoom.

The decision to use a stationary camera was guided by an ambition to reduce the difficulty of making real-time decisions about what to focus on. Trials with a mobile, hand-held camera resulted in a feeling of always missing interesting parts and being too late at the scene – when an interesting sequence was detected and the lens was pointed in that direction, the activity was often already underway, which meant the recording had already missed the build-up to the sequence and the initial exchanges (cf. Jordan & Henderson 1995, p. 54 and Macbeth, 1999, p. 152 ff.). Even though the division of activities into separate chunks is somewhat arbitrary, capturing what can be regarded as a complete sequence of interaction seemed easier when letting the camera follow the same people or place for a longer period of time. The use of a stationary camera, however, does not eliminate the need to make a number of practical decisions that will have consequences for the kind of material being recorded. Even though the filming was conducted using a camera on a tripod, the zoom and the direction of the lens was altered when found appropriate, making the filming somewhat flexible at least. Assumptions of what constitute relevant aspects of the activities studied, how to conceive of boundaries of the targeted activities and decisions about who is a relevant participant in the activities of interest and who is not shape the resulting recordings and are central to the final analyses (Goodwin, 1993). All these practical choices related to video recording are “constitutive of the

production of the visibility, recognisability, intelligibility of the phenomena at hand and of the arrangements of phenomenal field properties which are the target of the researcher's analysis" (Mondada, 2006, p. 2).

There is often a concern that recordings will change the participants' usual practices. In what ways does the presence of a researcher and a camera influence the participants' ways of acting? Do the teachers change their ways of teaching due to the fact that someone from another teacher education department is watching and are the students' extra concerned about their performance when they are being studied? This phenomenon of the researcher changing the very phenomenon under study, making unbiased observations impossible, is often referred to as the *observer's paradox* (Labov, 1972). Just how and to what extent this happens is, of course, difficult to judge. In the recorded material there are explicit comments about the fact that the activities are being filmed and there are also some instances where there is reason to believe that the participants are in various ways oriented towards the camera. In order to minimize the intrusion of a camera in the classrooms, the camera was mostly left stationary on the tripod during filming. It has been acknowledged by several researchers that the camera seems to intrude less on the participants being filmed if there is no researcher standing behind it (e.g. Erickson, 2006; Jordan & Henderson, 1995). This is believed to be the case also for the recordings discussed here. Whenever the tape had to be changed or the angle of the camera adjusted, the students and the teachers seemed to be reminded about the filming. This might in itself, though, be taken as a sign that the camera was actually more or less forgotten in-between these events. Some explicit comments, such as "Oh, I forgot about our little spy" or "There you are, I had forgotten about you being here" also indicate that the participants often did not pay attention to the camera but were absorbed in the activities they were engaged in.

Ethical considerations

Studying other people requires careful ethical considerations. The Swedish Research Council provides a number of ethical guidelines for the humanities and social sciences that have guided the design of this study. The participants were given written information about the project and the conditions for their participation beforehand and they were also asked for their written consent where they stated to what extent they wished to participate in the study. Those who did not wish to participate were asked if they were comfortable with the study being conducted in their classroom but without them being part of it. Even though the intention has been to carefully follow the guidelines given by the Research Council for conducting ethically appropriate research, some aspects of the study deserve further discussion. As mentioned

previously, courses in textile craft as part of teacher education were at the time of the recordings only given at four different universities in Sweden, making it somewhat problematic to keep the universities' location unknown. This might not be a problem as such, but given the limited number of teachers leading these courses, their identity might for the initiated reader be possible to recognize if the universities' locations are known. Some of the teachers explicitly gave their permission to use pictures of them as illustrating material or stated that they did not mind if the location of the university was known to the reader, but attempts to minimize the chance of identifying individual universities have still been made by, for example, not citing course titles, syllabi and program description word for word.

Another possible difficulty is related to the nature of this kind of qualitative study. When starting data collection it is very difficult as a researcher to actually know what aspects of the studied activities that will be central to the analysis. Even though the ambition was to be as honest as possible about the interest of the study when first meeting the participants, the description of the study at that time was (and had to be) quite general. In the written information, formulations such as "I want to contribute to the understanding of teaching and learning of textile craft as part of a teacher education, i.e. I want to increase the knowledge of the content and design of the courses by analysing ways of working and ways to communicate" and "the aim is not to evaluate individual teachers and students but with the use of examples describe how teaching and learning of textile craft can be instantiated" are used. Such formulations could be criticised for being too vague and not really saying anything about what the concrete studies will be all about. At the time, though, this was a genuine attempt to formulate the objectives of the studies and I can only hope that none of the participants feel misled in any way.

Analyses

As video recordings have become increasingly popular as research material in educational research, the ways such recordings are used in analytical work have also multiplied. Even though the empirical materials used as a starting point are similar, the kind of analyses individual studies provide comprise a rather heterogeneous collection. In an illuminating overview of recordings in educational research, Lindwall (2008, p. 31 ff.) distinguishes between three main approaches taken when analysing audio-visual recordings of educational practice, which highlights the complexity of this kind of work. In studies engaged in *coding*, *counting*, and *correlating* recorded material, the analytical work starts with pre-established coding schemes and categories that transforms the interaction into a set of analytical categories. This approach makes educational actions available for statistical analysis, but at the cost of losing “the local meaning and significance of these actions” (p. 41). Another approach described as *looking through and beyond the interaction* is commonly found in studies concerned with aspects of power in educational interaction. In this kind of approach, the actions of the studied participants are understood as *standing on behalf* of something else and the analytical task is therefore to “reveal something that is hidden from plain view – whether the hidden thing is structures of power, students’ understanding of mechanics, or learning as it takes place in interaction” (p. 42). The third approach described – which is the approach taken in the current studies – focuses on *explicating the seen but unnoticed details* of social organization. As described in chapter 3 and exemplified in chapter 4, this analytical approach is grounded in the manifest actions observable in the empirical material and the interest concerns the intricate ways through which social actions are produced and organised.

Choosing episodes for analysis

While the detailed analytical work has been guided by resources intrinsic to the data themselves, the selection of episodes to analyse has been guided by interests brought to the empirical material from the outside. The focus of the work presented here is instruction and instructed action in craft activities, hence, the chosen episodes will need to have something to show in relation to this matter. Generally speaking, the kinds of activities that have been considered interesting to look more closely at have been related to some kind of explicit-making of issues relevant to the undertaken tasks. This has often involved passages where the participants have focused on resolving problems or elucidating unclear points regarding some craft-related issues. The analysed examples are in this sense more instances of instructional *work* than “golden moments” (Brown, 1992, p. 173) in educational practice. Focusing

specifically on sequences where teachers and students are having difficulties continuing the activities at hand might potentially seem like an odd choice – why not show sequences where things are going smoothly, where the teacher manages to explain for the students in a way that makes it possible for them to immediately continue with their work? The sequences analysed in the four studies all include instances where students to various degrees require guidance and where the teacher’s instructions do not immediately solve the students’ difficulties. Considering the interest in the character of instructional work directed towards skills in craft and a focus on how such skills are made learnable to students, empirical examples showing participants’ interactive work on overcoming difficulties regarding educationally significant aspects such as understanding, knowing, competence and skill have been regarded especially rewarding.

For the first study, the analysed episode gained attention already at the time it was recorded for its potential to illuminate issues regarding instructions and the role of examples when guiding students’ learning activities. When filming the lecture on embroidery, the teacher’s descriptions of the different embroideries were perceived as clear, comprehensive and elaborated; for an onlooker at the lecture, there were no unclear points regarding the topics covered. However, when shifting activities from listening to the teacher to actually producing embroideries, several of the students started to ask questions about how to distinguish between the two embroideries included in the assignment. It was then realised that despite having experienced no ambiguities regarding these matters in the lecture, I would not have been able to answer the students’ questions at that time. This sudden alteration of self-estimated knowledge, together with the observation that several of the students seemed to have had similar experiences, prompted an interest in this particular lecture. Why did it seem so difficult to get a grip on the concrete details distinguishing the embroideries from each other after having listened to the informative lecture on exactly that topic, and why were these difficulties not experienced during this lecture?

In Study II, an explicit interest in distinguishing aspects of craft education – intercorporeality and tactile instructions – has guided the analytical theme and the choice of episodes. The interest arose from a general observation that teachers at the recorded courses often used their hands to mould and manipulate students’ hands and tools. This aspect of instructional work was believed to distinguish craft education from many other subject taught at universities and therefore of interest to further explore as part of the project. The analytical work started by viewing and reviewing approximately 15 hours of recordings from workshops where the teachers frequently guided the students with their hands. The specific sequence chosen for closer analysis was partly chosen for its technical qualities.

In the third study, the chosen episode captures a student going from *not knowing what to do* to *knowing how to proceed*, which gives the potential to analyse the manifest activities involved in learning a certain competence (in this case, how to make crochet chain stitches). With an interest in the interactive practices of teaching and learning craft, the possibility of following in detail all the twists and turns leading to the mastery of a certain competence (or at least an ability to complete the task given by the teacher) was seen as a promising analytical endeavour and provided grounds for choosing this sequence for further analysis. Being an episode where a lot of difficulties arose, this episode was considered useful for explicating the detailed work one needs to learn in order to master this particular craft activity. As the analytical work proceeded, the sequence's potential to shed light on questions related to instructions and corrections more generally was noted, and gradually this interest came to be a main focus of the study.

In the last study, an interest in the lecture design and the pedagogical framework resulted in closer inspections of the tapes from the specific lecture. In this lecture, explicit attention was paid to the fact that the students attended a teacher education program but the topics covered to during the lecture were still at the heart of textile craft. The students were given an assignment where they were asked to attend to both craft-specific issues and pedagogical matters simultaneously. How this dual character of the activities was oriented towards and how it could be seen in the interactive organisation of the lecture were explored in what eventually came to be Study IV. The issues related to participatory frameworks discussed in the study are characteristic of the lecture as a whole rather than related to the specific episode chosen to illustrate the arguments. Similar to Study II, the specific episode analysed was partly chosen because of its technical qualities: the presenting students in the chosen episode are both clearly visible in the recordings throughout the whole presentation and they had both given written consent to appear in illustrations in publications, something that made it easier to clearly present the analytical findings.

In the studies, single cases are used to discuss questions of a more general character. As an analytical contribution, a collection of instances might more convincingly argue for the stability of the presented features while a single case has the potential to provide insights into the detailed organisation of interactive activities. Using a single instance as the basis of a study opens up for questions regarding the representability of this example; is the analysis really saying anything of relevance for situations other than the one analysed and how can we know that the phenomena discussed are more than just occasioned coincidences? These kinds of questions do not have a general solution but have to be viewed in the light of the issues raised and suggested statements in individual studies. According to Arminen (2005, p. 68), an

important question for studies using recorded material “is whether they are indeed representative of the social practice the researcher claims they are”. The representability of the analysed episodes and their relevance for other situations can be seen as depending on what aspects of them that are foregrounded and what the context being exemplified is thought to be. For instance, looking at the analysed episodes using the *specific craft techniques* they represent as a main focus, the sequences show the most common techniques represented in the empirical material – embroidery and yarn techniques. These techniques are supposedly part of all sloyd teachers’ education in textile craft. If individual craft techniques are used as the focal aspects of the episodes, the analysed episodes are definitely representative of the empirical material and presumably of teacher education specialising in textile craft. Looking at the episodes in greater detail and at what *specific* craft activities they include, the episode analysed for Study I is, on the contrary, excerpted from the only lecture in the recorded material focusing on Delsbo and Järvsö embroidery. In Swedish teacher education programs specialising in sloyd, working with these embroideries is probably fairly common (they are included in at least two of the three programs visited in study), but in an international context, lectures in teacher education programs focusing on Delsbo and Järvsö embroidery would be extremely rare and more or less a curiosity. On the other hand, educational activities where students first listen to a lecture and thereafter are supposed to use what they have heard to complete some kind of assignment are not only common in the empirical material discussed here or in teacher education programs more general, but are frequently used in allegedly all institutional education. In a similar way, the sequence analysed for Study IV is taken from the only lecture in the recorded material where the students are engaging in peer assessment, but viewed in relation to higher education more generally, peer assessment is a common way of organising educational activities.

The sequences analysed for Study II and III probably look very familiar to anyone with experience of education in textile craft. In textile craft, teachers frequently engage with the students’ hands and materials to demonstrate and correct aspects of their crafting and this kind of instructional activity is massively present throughout the recorded material. These kinds of embodied instructional actions are not associated with subjects such as maths, physics or languages. Also in subjects like dance and sports where embodied instructions are common, the specific ways teachers and students’ bodies interact differ from instructions in craft. The instructional activities and the educational organisation shown in Study II and III, then, can be said to be both characteristic of and to some extent unique for education in textile craft. Still, this does not mean that the analyses presented are only relevant for teaching and learning in textile craft. Study III could, in some respects, be

regarded as discussing the most general aspects of all four studies considering its focus on the basic conditions for instruction and instructed action making the study relevant also for non-institutional education. While Study II with its focus on intercorporeal instructions in textile craft could be described as the most craft-specific of the four studies, the analyses of intercorporeal actions might also contribute to an awareness of the truly embodied and spatial character of instructional work more generally.

Analysing embodied activities

As stated earlier, the analyses of the investigated activities actually started already at the time the films were recorded: sequences of potential interest to the analytical focus were noted and marked for later review; regularities in the ways things are handled were detected; certain types of activities were perceived as particularly promising for analysis and so on. Starting off with an “intentionally vague notion” (Macbeth, 1990, p. 193) and abstract ideas for analytical topics, the themes presented in the empirical studies have gradually been shaped and clarified through the various activities constituting the days of researchers: discussing ideas with colleagues, presenting bits of the data in seminars and working groups, viewing and reviewing the recordings both in groups and individually and formulating potential papers to write all parts of the analytical work that finally resulted in the four studies presented here. The analytic work has been guided by an ambition to focus on aspects in the educational practice that seem to occupy the attention of the participants: “whatever seems to animate, to preoccupy, to shape the interaction for the participants in the interaction mandates how we do our work, and what work we have to do” (Schegloff, 2003, p. 25). Hence, analyses of the empirical material have not involved using any external systems for categorization or coding of the data; the primary analytical tool has instead been the sequential organization of the data themselves.

In craft activities, interaction does not only take place between human participants: the engagement of participants and material objects is also important (cf. Johansson, 2002; Illum, 2006; Johansson & Illum, 2009). These practices are at the core of craft activities but have proven rather difficult to analyse with observational methods. Even though the actions constituting craft activities are possible to capture on film, the material’s development in the hand of the crafter is, apart from visual and aural, to a large extent also tactile by its nature. This calls for analytical work where the analyst investigates the activities under scrutiny by involving his/her own body when searching for relevant aspects organising the activities under scrutiny. In the task of tracing out what is at stake in practices of craft, embodied experiences of such practices are argued to be of crucial importance. The techniques

taught in the courses and the assignments given to the students have therefore continually been employed after the recordings were finished for the day. This was done with the ambition of getting a sense of the students' experiences of learning crafts and trying to, in a sense, "becoming the phenomenon" (Mehan & Wood, 1975, p. 225–238) and acquire a *vulgar competence* (Garfinkel & Wieder, 1992, p. 182). By trying to accomplish the tasks attended to in the recordings, not only have a more thorough understanding of craft activities been obtained but also a *radically different* understanding than would have been possible to achieve by just observing the doings of others. In and through firsthand experiences of the kind of activities under scrutiny, dimensions of craft as well as the students' struggle to master techniques otherwise hidden have been accessed. During the continual reviewing of specific episodes, along the undertaking of the educational tasks, *the detailed and specific actions* of the participants were sometimes reproduced by mimicking the problems students displayed and trying to solve them by following the teachers' instructions and corrections. This mimicking of the analysed activities has not only informed the understanding of what it can be to learn craft but also resulted in a better understanding of the teachers' instructional work in the way it has revealed the particular aspects of the students' crafting it was responding to. Without informing the analysis with bodily experience of doing crafts, crucial dimensions of the activities would probably have been omitted.

Another reason for mimicking the participants' undertakings is the fact that crucial parts of the activities are often impossible to detect in the recordings because of their small size: this is especially apparent in Study II and Study III. Even with extensive zooming, some details of craft activities would still be invisible. With the use of relevant materials and tools, detective work taking the sequential organisation of the activities as a starting point has been undertaken in order to try to get a grip on what is at stake in the analysed examples. This work often started by mimicking the student's handling of the materials and using the teacher's responses as a way of correcting the mimicked actions. By working both backward and forward in the sequence and reproducing the participants' doings in relation to each other, a more detailed understanding of what was in focus for the participants was achieved. The teacher's doings were seen in the light of the students' response and vice versa and through such iterations the relevant parts of the activities were gradually revealed.

Ethnomethodological indifference

The policy of *ethnomethodological indifference* is important for studies undertaken as part of this tradition and has briefly been introduced in chapter 3. A common misunderstanding of this recommendation is that it prescribes a “naïve inductivism – it is as if the researcher has to bracket all preconceptions and interests” (Lindwall, 2008, p. 63). For practical research, such a bracketing would obviously neither be possible nor desirable. For the studies here, the analytical work has striven to understand *the organization* of investigated activities by focusing on their procedural properties; the activities under scrutiny have been analysed leaving aside normative and regulatory prescriptions of what people should be doing in order to conduct their affairs more accurately. In other words, questions of, for example, the relevance of topics and techniques being taught, the effectiveness of the chosen instructional methods or the appropriateness of the teachers’ behaviour have not been attended to as part of this project. Ethnomethodologically inspired analyses should, however, not be seen as a replacement for other kind of studies, but rather as an addition and a complement to knowledge gained using other approaches (ten Have, 2004, p. 179). In order to gain a comprehensive understanding of classroom interaction and to develop strategies for improving educational practice, different kinds of analyses are most probably necessary. Even though the analytical work does not have the aim of evaluating educational practice, the studies are not indifferent to educational concerns and pedagogical questions; the indifference has been directed towards using normative conceptions of how teaching and learning should look like in the investigated settings as a basis for conducting analyses.

Transformations and (re)presentations

As part of the analytical work, sequences from the video collection have been transcribed with the aim of gaining access to the details of the interactive organisation and its progression. With an analytical focus on how participants respond to each other, how they display their understanding of each other and the activities at hand, how they orient themselves towards each other and various aspects of the material surroundings, such detailed representations are at the core of the analytical work and are an irreplaceable resource for revealing the temporal alignment of actions.

Transcripts are not static, objective representations of activities, but flexible objects and products of the practical purposes of their realisation. A transcript

changes as the transcriber engages in listening and looking again at the tape, endlessly checking, revising, reformatting it. These changes are not simply cumulative steps towards an increasingly better transcript: they can involve adding but also subtracting details for the purposes of a specific analysis, of a particular recipient-oriented presentation, or of compliance with editorial constraints.”(Mondada, 2007, p. 810)

The activity of transcribing recordings has been important when it comes to finding analytically interesting phenomena to investigate and far more sequences than those included in the individual studies have been transcribed. As noted by Mondada (2007), in the work with video recordings, transcripts are not produced prior to the analysis but along with the development of the analytical record. Through the work of transcribing sequences considered for further analysis, new aspects of the interaction became visible thereby altering the original understanding of what the activity was all about.

The kind of working transcripts produced usually differ from the ones used for presentation of completed analyses. In other words, transcripts produced to *gain* analytical insights are not identical with transcripts used to *highlight* analytical insights. In this project, working transcripts of very different characters have been produced depending on the needs associated with the different phenomena being investigated. Sometimes, detailed transcripts of short sequences including markings for overlaps, pauses and intonation have been used while other parts of the work have been based on larger transcript collections where only the wordings of the participants have been included. For Study II where the focus is directed towards the interaction of the participants’ bodies, the initial transcript was constructed from frame captures extracted for every second of the chosen episode. Descriptions of the participants’ verbal and embodied conduct were then gradually added to these pictures. In the studies presented here, the analytical transcripts have been used as complements to the recordings; the analyses are first and foremost based on the video material but enhanced by the access to transcripts. As crucial aspects of craft activities such as body movements and the use of tools do not easily lend themselves to transcriptions, it has been necessary to primarily rely on the original recordings for the analytical work.

The analyses are made of the original recordings complemented with working transcripts in Swedish, but with the ambition of making the analyses available to a wider community of fellow researchers, various forms of translation have been undertaken: from Swedish to English and from a temporal and spatial arrangement of three-dimensional bodies and objects into

two-dimensional, printed representations. The translations of the transcripts from Swedish into English have been made by attempting to construct sentences that capture the essence of the original wordings; the translation is not primarily made on a word-by-word basis even though the Swedish sequencing of words is sometimes adopted in the English translations – great efforts have been made to preserve local expressions and temporal organisation of importance for the analytical points argued in the studies. Without a strict word-by-word translation, using markings for things like overlaps and pauses become somewhat problematic: how is it possible to mark overlap in constructed conversations without making the presented organisation completely arbitrary and a product of imagination? In the practical translation work, this has actually not posed that many problems. Even though the representations could be criticised for being arbitrary, the overlaps and pauses of importance for the analytical points being made have been fitted into the translated transcripts without the feeling of violating the original organisation of the interaction.

No conventionalized form for representing video material in scientific reports exists today; individual researchers usually develop ways of working appropriate for the specific domain under scrutiny. Transcripts used for presentational purposes are often simplified versions of the working transcripts but enhanced with representations of aspects that during the analytic phase were being accessed through the video. These representations are things like frame captures, still photos from the courses, drawings, staged photos, etc. together with presentational elements such as arrows, frames and textual explanations. As noted by Ivarsson, “it is not without difficulty that the temporal and spatial arrangement of bodies, conduct and other events are transformed into the fundamentally spatial (non-temporal) arrangement better known as ‘a page’” (2010, p. 179). The illustrations are (obviously) highly simplified accounts and should not be read as complete representations of the activities analysed: the presentation transcripts are analytical products, constructed for the purpose of highlighting aspects of importance for the analytical issues being discussed. The designs of the transcripts included in the studies are guided by the analytical points discussed in each study and the level of detail is determined by the kind of analysis being suggested – just how the final transcripts are assembled depends on questions raised and the issues discussed in each individual analysis.

Summary of the studies

STUDY I: Questions, instructions, and modes of listening in the joint production of guided action: A Study of student-teacher collaboration in handicraft education

This study addresses a recurrent educational dilemma of using information from lectures in subsequent assignments or, put differently, the difficulties of making connections between more generally oriented information and specific educational tasks. In the analysed episode, two students are about to begin their work on producing examples of two distinct but interrelated traditional, Swedish embroideries. They have previously attended a lecture describing and exemplifying these embroideries but when they engage in the actual assignment, the task of making two distinct embroideries proved difficult. Even though the students in the examples had been given instructions about how the task should be carried out, they had to struggle with the differences between the embroideries in relation to the fulfilment of the assignment. Instead of explaining these circumstances by blaming the students for not having listened carefully enough or criticizing the teacher for not giving relevant instructions, the study argues that listening to a lecture and listening for what one needs in order to know “how to go on” with a concrete assignment are two different activities. In the introductory lecture, the students were given extensive information about the specific embroideries, their history, appearance, techniques involved, and so on. In this introduction, the students were, in some sense, given the answers to problems they had not yet experienced and which they, at the time of the lecture, had not yet struggled with. The students did not know what parts of the teacher’s presentation would become crucial for their work of producing the embroideries and it was not until they were about to start making use of the information in relation to the making of the pieces of embroidery that they began to realize what they needed to know in order to be able to construct two distinct embroideries.

In the study, a tension between the teacher’s and the students’ orientation towards the educational assignment is described: while the teacher is oriented towards the general ideas the assignment is intended to illustrate, the stu-

dents primarily orient themselves towards the concrete examples as such. This tension in orientation towards educational assignments raises questions concerning conditions for learning and instruction generally: How can an instance be seen as an example of something before one knows what this something is? The problem of making an educational example exemplify something beyond itself has in previous studies partially been connected to specific educational ideology emphasising students' own discoveries of facts and information. As argued by, for example, Bergqvist (1990), one way of addressing this educational quandary might be to say that students should acquire adequate background knowledge before they start working on any assignments. They would then have enough knowledge to actually see the examples as exemplifying. What the episode analysed in this study illustrates, however, is that providing such background information is not always easy. While specific examples are dependent on general understandings in order to show something beyond itself, such general understandings are difficult to arrive at unless one has some specific examples as a point of departure. When trying to teach students, it is not possible to simultaneously provide them with background information and lived experience of examples. Teachers' and students' alternating orientation between concrete examples and the general ideas these examples are intended to illustrate – where the students primarily see the concrete examples and the teachers see the themes exemplified – is argued to be central to educational practice in many settings. Instead of seeing this as a problem teachers should try to evade, the analyses of craft instructions suggest that the moments when teachers' and students' perspectives intersect constitute essential learning opportunities for students in the sense that such encounters give students access to disciplinary ways of looking at the matter at hand.

STUDY II: Intercorporeal communication and the making of objects

When working with craft in an instructional context, intercorporeal actions are a significant part of the activities as experts frequently engage physically with beginners' hands and tools when instructing them in specific aspects of craft. Experts recurrently use their hands to move beginners' bodies through a projected trajectory and they also manipulate beginners' tools and materials in various ways to highlight crucial aspects of craft activities. This guiding of hand and tools is not only visible and observable to the beginner; it is also available as haptic and kinaesthetic sensations. The reported study focuses on touch and physical guidance as instructive resources in craft educa-

tion with the aim of illuminating some of the ways intercorporeality feature in instructional activities directed towards the learning of bodily skills. To shed light on issues of intercorporeality in instructive actions, video recordings from workshops in knitting have been examined. In this kind of workshop, teachers guide and instruct students in a very detailed and concrete way, making this a promising setting for studying embodied instructional actions. In the analysed episodes, intercorporeal actions serve as central means for making craft-related skills visible and learnable for the students. Knitting together with a more experienced knitter is, for example, a way of getting all the components of the knitting body in place and acquiring a firsthand embodied experience of performing the relevant actions.

The recurrent practice of physically guiding students in craft foregrounds the notion of agency in instructional activities. The embodiedness of craft and the fact that the objectives of craft education have concrete and tangible characteristics as opposed to, for example, the objectives in physics and maths make it possible for someone else to actually perform the actions for the students. The purpose of the teachers' instructional actions is, however, not to do something *for* the students or to assist in the production of craft objects but to facilitate the students' *learning* of craft-specific actions. The study demonstrates how intercorporeal actions are key resources in the organisation of instructive actions and shows how intercorporeality features in solutions to local, practical problems for the participants. The detailed analyses of instructional sequences show how intercorporeal actions largely absent from descriptions of educational interaction are significant resources when teaching and learning craft. Conceptual models of communicative and instructive practices in educational contexts concerned with embodied skills can thus be expanded and elaborated by taking into account also tactile encounters and haptic information in descriptions of the interactive organisation of instructional work. On a more general note, the study begins to unearth the responsive character of intercorporeal action and highlighted some ways in which tactile engagement feature in the temporal unfolding of social action.

STUDY III: Instruction-in-interaction: The teaching and learning of a manual skill

With an interest in the way instruction-in-interaction is organized, this study analyses an episode where a teacher demonstrates how to crochet chain stitches, requests the students to make ten stitches, and after having noticed some problems with one of the student's attempts, engages in one-on-one

instruction through a series of corrective sequences. A central aim of the analysis is to explicate some of the ways in which instructions and instructed actions are tied together: to show how both these parts of instruction-in-interaction are central to the work of teaching and learning in this setting.

Learning to crochet is very much about getting the body to act in certain ways: when learning how to crochet, the students' understandings of what the teacher is instructing them are immediately and visibly available in what they are doing. This gives the additional option of designing the instructions as a series of corrections. The progression of the activities is achieved by segmenting the instructions and instructed actions into a series of corrective sequences, each centred around a specific issue. The materiality and embodied character of educational tasks in craft make it possible for teachers and students to methodically and meticulously adjust their actions in accordance with each other, and towards the gradual realization of the results aimed for. In the analysed episode, it is noted that the teacher's directives and corrections mainly address positions and movements of certain body parts rather than characterising meaningful actions. The teacher's instructions to the student primarily capture the behavioural dimension of the instructed actions without providing them with their specific aim and reasoned meaning. In activities where embodied actions are central, however, there are other ways of finding the sense of actions than having them explained. When the teacher's instructions regarding bodily movements are followed, they make sense in and through the way they make it easier to perform the relevant course of actions.

The study explores a number of related themes including how instruction-in-interaction orient towards the progression of the skill rather than the interaction itself; how attempts and mistakes made by the party instructed provide grounds for further instruction; and, consequently, how instructions in the form of corrections build on the instructor's continuous assessment of the performance of the instructed party. The themes discussed in the analyses of the crocheting episode are not properties exclusive to teaching, learning, or schooling in general. Even though the investigated episode takes place in a classroom, neither instruction nor instructed actions directly hinge on them being part of a particular institutional environment, nor on the participants' roles as teacher and students. The kind of instructions analysed in the study can be found almost everywhere in interaction involving skills that are not equally distributed among participants.

STUDY IV: Epistemic positioning and frameworks for participation: Learning to assess objects of craft in teacher education

One strategy for teaching assessment competences to student teachers in is the use of peer-assessment activities. As part of teacher education, peer assessment is not only used in teaching and learning subject matter, but can also serve as a learning exercise where assessment competences are taught and attended to. In peer assessment, students engage in educational activities under conditions that differ from other classroom interaction: while participating in the activities as students, they are at the same time involved in teaching and assessing their peers – activities commonly associated with teachers. Studying this kind of educational activity places a focus on *participation* and *interactional positions*: to what extent are students able to participate in this kind of activity as teachers and in what ways do they orient themselves towards their positions as students? In the study, episodes where students assess each other's craft objects while at the same time receiving feedback on their assessment from a teacher are investigated with the aim of exploring the interactive organisation of such activities as they are locally accomplished in and through the participants' doings.

The analyses show a multi-dimensional interactive organisation with both dynamic and static components. Interactional arrangements with shifting participation frameworks and changing interactive positions are at work simultaneously with more stable organisational patterns related to educational interaction. During the short episodes focused on in this study, both the teacher and the presenting students engage in the activities in several different interactional positions that are quickly altered. The presenting students' positionings in the activities recurrently change between acting as teachers providing feedback and acting as students responding to educational tasks. While the participants' engagement in the analysed educational activities is flexible, situated and frequently changing, the participants seem to continually orient themselves towards interactional patterns associated with classroom practices and teacher-student encounters regardless of changes in participatory frameworks – some organisational patterns remain the same even though the participants' interactional positioning changes. When the students in the analysed episodes are performing actions associated with teachers, only parts of the rights and responsibilities usually accompanying this category apply to their interactional positions. The presenting students are, for example, given the right to assess and comment on a fellow student's embroidery and when doing this, they are also entitled to the conversational floor through an extensive sequence of turns. Still, the teacher is authorized to take over the conversational floor without further interactional work and

she both asks the students questions and later on assumes responsibility for finishing the assessment.

As seen in the analyses, there are limits to the level of authenticity that can be given to an activity in a classroom context – also when the activities are related to classroom practices. The overarching organisation of the classroom and the rights and responsibilities associated with teachers and students seem to be difficult to ignore. While this could potentially be seen as a constraint considering discussions of learning as inherently situated where the possibility of knowledge transfer between domains is questioned, the characteristics of undertaking professional tasks in a classroom context could also be beneficial for students' learning in the way this kind of activity facilitates several different ways of organising teaching and learning. By replicating some aspects of the target activity but keeping the institutional framing with an instructing teacher, an educational context where the students get to practice concrete doings while simultaneously being guided by a professional teacher and given examples of a professional teacher in action is created.

Discussion

Following instructions in craft implies transforming instructions into embodied courses of action. Similar to, for example, dance (Keevallik, 2010) and physiotherapy (Martin, 2004), craft education is concerned with skills where forming the ways students move their bodies are both a means and an end: in craft, “the body is not only an instrument but it belongs to the action itself” (Alexandersson, 2007, p. 14). Since students do not just listen to instructions, but recurrently attempt to re-enact the actions projected by the instructions, students’ understandings are first and foremost shown in their subsequent doings as they try to accomplish the relevant actions (cf. Keevallik, 2010, p. 407). While social actions are always embodied, instructions in all domains do not project bodily uptakes: instructional work in craft is in this sense distinguished by conditions that partly differ from domains where such aspects are less pronounced or not even relevant. The discussion revolves around how the manifest character of skills and understandings shapes the organisation of instructional work in craft and influences the ways competence is oriented towards as part of educational activities. Even though the empirical domain is textile craft education, the analyses also address questions concerning educational practice and social action more generally. Issues such as the use of examples in instructions, differences in teachers and students’ framing of educational activities and the organisation of communicative practices where participants engage with tools and materials are raised and discussed in the light of textile education.

Instructed bodies and bodily instructions

In a context where instructions guide students’ appropriation of certain bodily movements, instructional-relevant actions – such as problem displays, requests, corrections and directives – are regularly accomplished in and through bodily actions. In craft education, skilled actions are not just explained but also shown and established through bodily instructions. As skills in craft are manifested in embodied courses of actions, watching a competent body manipulating objects and materials is a resource for learning and teachers in craft recurrently include demonstrations as part of their instructional

practices. In these demonstrations, teachers show the targeted actions in front of the students who are then asked to imitate these actions. Since a demonstration is organised as a performance of the targeted actions, all the relevant steps and procedures are necessarily there to be seen. Observing a demonstration, however, does not automatically enable the students to re-enact the actions being instructed. In the studies of knitting (Study II) and crocheting (Study III), the students' difficulties in imitating teachers' demonstrations of specific movements are discussed in relation to issues of distinguishing between critical actions and optional or even irrelevant actions. While all relevant steps of a certain action are available to be seen in a demonstration, this does not mean that this information is perceivable for a novice. Observation and imitation is dependent on repeated attempts through which the relevant aspects of the demonstrated actions are gradually discerned. As argued by Ingold (2000, p. 353): "the key to imitation lies in the intimate coordination of the movement of the novice's attention to others with his own bodily movement in the world". Instructions and instructed actions should be considered as a pair, where instructions – rather than determining the instructed actions – gain substance in the very act of following them (e.g. Garfinkel, 2002; Livingston, 2008). Even though the demonstration includes and displays the action, the ability to see the action in a demonstration of craft is routinely dependent on experiences of attempting this action as engagements with a material world.

Physical proximity is characteristic of educational activities in craft. Teachers and students in craft often share a joint space where the instructional work takes place that makes it possible for teachers to adjust students' bodies and materials in their attempts to re-enact the relevant actions. In craft, teachers frequently use their hands to move students' bodies through a projected trajectory and guide their hands and tools as they engage in crafting. This guiding makes an additional instructive dimension available through the students' bodily experience of the targeted movements. Performing craft-relevant actions together with a skilled crafter is a way of getting firsthand embodied experience of the relevant movements with all the components of the actions in place. Such intercorporeal instructions are not only visible and observable to the novice, they also make instructions available as haptic and kinesthetic sensations: the targeted skills are made available also through bodily understandings of moving and touching (cf. Nishizaka, 2007 and Martin, 2004).

As teacher and students perform relevant actions together, the concept of *scaffolding* (Wood, Bruner, & Ross, 1976) attains an almost literal meaning in the sense that teachers provide students with physical support and provide their bodies with both stability and directional guidance. The embodied character of craft and the fact that the results of craft often have concrete and

tangible characteristics as opposed to, for example, the objectives in physics and maths, make it possible for teachers to actually perform actions for the students – making a stitch for someone else can be contrasted with understanding Newton’s laws for someone else. The purpose of instructional work in craft is, however, not usually to do something for the students or to assist in the production of craft objects. The purpose of the activities is for the students to learn to perform craft-specific actions and to be able to produce object without support from a teacher. When teachers’ hands are actively engaged in moving students’ bodies through the relevant courses of actions, this moving is primarily done in the service of *learning craft* rather than the production of a craft object.

Through their physical guidance of students’ hands and tools, teachers engage the students in the relevant courses of action but do not so much describe their reason and what the actions are achieving in the activities – in this kind of instructional practice skills are first and foremost *shown and installed* rather than explained. As seen in Study II and topicalized in Study III, these kinds of instructions mainly capture the behavioural dimension of the instructed actions without providing them with their specific aim and meaning. The teachers’ instructions are primarily organised as corrections addressing positions and movements of certain body parts rather than characterising meaningful actions. In activities where embodied actions are central, however, there are other ways of finding the sense of actions than having them explained. When the teachers’ instructions regarding bodily movements are correctly followed, their reasoned character is revealed in the way they facilitate the performance of the relevant actions and provide the intended results. Bodily movements performed as mere imitations and ‘blind’ following of instructions can retrospectively become meaningful actions as a progression of an object is seen in the results of the movements. In the future, these movements can then be used as intentional actions to accomplish the results previously observed.

Instructed actions and material results

Instructions in craft are designed with a material object as the eventual and ultimate result. Finding a correspondence between instructions and a progressing material object can, however, prove difficult. In Study I, students’ difficulties in using information given in a lecture in their work with producing embroideries in a subsequent assignment are discussed. Such difficulties are perhaps readily explained by blaming the students for not having listened carefully or criticising the teacher’s instructions for not providing enough information. In the study, it is instead suggested that there is a distinct differ-

ence between listening to instructions as part of a lecture and listening to instructions in order to produce a concrete object. What instructions imply for the instructed is argued to depend on the projected outcome of listening to the instructions. In lectures, students are mainly held accountable for listening to the teacher, for understanding what is being said and presumably, later on, for providing a verbal or written account of what the lecture was all about. In a subsequent assignment, students are instead asked to use the information given in instructions to accomplish certain tasks – in this case to produce craft objects. These two activities are inherently different in the sense that they make relevant different ways of orienting towards instructions. As students become accountable not only for listening to the teacher's instructions but also for following them, it is not enough for them to only have a general sense of what the teacher instructs – to be able to use instructions in the making of objects, students need to have a specific understanding of how to transform these instructions into courses of manual actions that result in the intended object. Being instructed in a lecture or in relation to one's own attempts to make an object, highlights very different aspects of what is said, shown and done.

Once an object is starting to materialise, teachers' instructions are recurrently directed at and responsive to this (developing) material object, which can then be used as a resource in the work of finding a connection between instructions and instructed action. When actions guided by instructions have a concrete and tangible result, instructions can be compared and interpreted in relation to this progressing object. Säljö (2009) characterises instructional work in such contexts:

By talking about, and in some sense through, a concrete object, the professional experiences and perspectives of the mentor are anchored in a shared reality. Judgments may be passed on and comments given, and these derive their meaning from the presence of a piece of work that the student is accountable for (p. 320).

When competent reasoning and understandings are related to a mutually available object, they are given meaning that is potentially available also to someone not yet proficient in the targeted skills. In Study IV, for example, the teacher and students are engaged in discussions about craft objects as the students are practising assessment. Even though the students have previously been given instructions and guidelines for their assessment, what these instructions mean in terms of practical assessments is gradually specified and determined in the teacher's continued instructions related to the students' ongoing assessment of a material object present for all to see. In the teacher's introduction to educational assessments, she uses generally valid descriptions of what to take into account when assessing craft objects; her formula-

tions of assessment practices are applicable to a variety of objects in different situations. This means that the students need to find the link between general descriptions and specific applications as they engage in assessments of specific objects. As the object is visibly present in the classroom, the assessment offered by the presenting students can be discussed and evaluated in relation to this object and the teacher can also, as seen in the episode, demonstrate a professional assessment of the specific object.

Guiding and correcting students' ways of handling and orienting towards a shared object is a way of bridging the gap between general illustrations and concrete applications. In relation to design processes in architectural education, Lymer (2010) states that: "instructions [...] that initially may only be vaguely grasped, gradually acquire a more definite sense when they can be juxtaposed with the objects one produces, and seen in terms of the contingencies of production" (p. 81). This account can also be applied to instructional work in craft. In all the four studies, instructional problems are ultimately resolved in close connection to a craft object: differences in aesthetic expression (Study I), how feedback is preferably designed (Study IV) or how specific techniques should be performed (Study II & III) are revealed to the students in and through references to material objects.

Doing craft and knowing craft

The manifest character of skills in craft does not only enable specific ways of organising instructional actions, the bodily conduct of students also comprises a resource for teachers to assess the students' understanding of the subject matter being taught. In a similar way as archaeology students (Goodwin, 2003a, 2003b), dentists in training (Hindmarsh, Reynolds, & Dunne, 2011), dance students (Keevallik, 2010) and anaesthetic residents (Hindmarsh & Pilnick, 2007) show their competences and display their understandings through their bodily orientation in the material world, students of craft make their comprehensions publicly available through their transformations of materials into specific craft objects. In many educational contexts, it is difficult for teachers to make any claims in relation to learning and understanding of individual students. In, for example, lecture-based courses attended by large groups of students, teachers are provided with little material grounds for following students' understandings: what students have understood and learned are largely attended to as a matter to be assessed in subsequent tests and examinations. Teachers are commonly dependent on students' reports of understanding and try to figure out whether or not students actually know what they claim to know (Lindwall & Lymer, 2011). In contrast, the intertwining of knowing and doing in craft makes students'

understandings immediately available to teachers; the material and embodied character of craft activities provide teachers with readily available *exhibits of understanding* (Sacks, 1992). As has previously been described in relation to, for example, dentists in training (Hindmarsh, Reynolds, & Dunne, 2011), a manifest character of understandings might instantly confirm or dispute students' claims of understanding – when students claim to have understood something, their bodily conduct might give teachers reason to question this claim. The materiality of craft activities reveals the crafters' understanding of the activity at hand, making it difficult to claim understanding without being able to also demonstrate this understanding. Lindwall and Lymer (2011) suggest that in physics, even though students might be able to perform a task, this does not necessarily demonstrate that the students understand the task. Students in physics might correctly follow lab instructions and produce accurate graphs without being able to say what they mean in term of physical reasoning. In craft, skills and understandings are, by and large, inseparable from embodied courses of craft activities – knowing craft is, in a sense, doing craft. While skills in craft are far from an “application of mechanical force” (Ingold, 2000, p. 291), correctly performed courses of action nevertheless recurrently correspond to a mastering of relevant knowledge. Even though students in craft might occasionally make correct movements by accident (cf. Study III), correctly following instructions in craft usually indicates that the skill has been mastered.

The manifest character of understandings – or lack thereof – makes it possible to organise instructions in craft as sequences of corrections grounded in students' displays of specific problems. Both in the study of object-making (Study II & III) and object-assessing (Study IV), the teachers' instructions largely correct actions performed by students. Through students' immediate and manifest uptake of instructions, teachers gain access to their current problems and, as shown in the studies, this information can be used to adjust the instructions in line with students' specific and changing needs in the form of corrections. Through students' actions, teachers obtain synchronous feedback on their instructions, which, in turn, can be used to alter and elaborate further instructional activities. As students' specific problems become available, teachers become aware of what aspects of their instructions need further explanation. In this particular sense, teachers are instructed by students' actions just as much as students are instructed by teachers' work. Instructions and instructed actions mutually elaborate as teachers' instructions not only guide and adjust the students' action but are simultaneously guided and adjusted by these actions.

In relation to the episodes analysed here, it is interesting to note the ways in which corrections are initiated and carried out in different kinds of educational activities. In the students' assessment practices analysed in Study IV,

the teacher's corrections are designed as questions where the students' mistakes are only implicitly addressed. Even though the questions do not explicitly formulate the problematic aspects or even state that there is in fact a problem to start with, the need for a correction is nevertheless revealed in the way the question is posed and how it is temporally placed in the overall activity. The reason for the teacher's intervention is however not formulated and she does not provide the students with any specific alternatives to their current actions – the students are required to find a correct line of action from the teacher's guiding questions themselves. In contrast, in the studies of object production (Study II & III) the teachers' corrections explicitly and directly address the current problem and also provide readily available remedial alternatives. Not only are the students' mistakes highlighted and revealed, the appropriate courses of action are immediately presented without requiring the students to guess or make further attempts. Even though students' understandings and competences are publicly displayed in assessment activities and object-making alike, the teachers in the analysed episodes act upon these displays rather differently.

One way to understand such differences could be in terms of the definiteness and specificity of the skills in focus. In the analyses of knitting and crocheting, the corrections are directed towards aspects of very specific actions. The students are practising craft techniques with distinct differences between correct and incorrect performance – the angle of the needle should be altered, a piece of yarn held tighter or an action should be performed from the opposite direction. The teachers' corrections are thereby addressing problems where there is not really much room for negotiation or opinions. While there are individual differences in ways of crafting and some variation of movements that will ultimately lead to the same result, it is nevertheless possible to rather straightforwardly distinguish between right and wrong ways of performing a specific technique. In relation to assessment competences, the teacher's corrections arguably address more imprecise issues instead of some very specific action. There are potentially several lines of action that could be seen as an acceptable adjustment in response to the teacher's correction and not just one single way of formulating feedback. Moreover, it is not a *specific* action that should be corrected so much as something in the way the action is organised that needs to be adjusted – something needs to, for example, be elaborated, specified, distinguished or toned down. In relation to assessment competences, there is potentially also room for some discussion about what would constitute preferred feedback and there might also be differences in opinion regarding such a matter, which would be consequential for how corrections are organised and designed. Obviously, assessing objects of craft is not only a matter of taste and individual preferences, but a distinction between correct and incorrect as-

assessment would nevertheless probably prove less straightforward than questions of correct and incorrect ways of crocheting a chain stitch.

Instructional work in textile craft

In craft education, students are gradually familiarised with craft-specific ways of engaging with tools and material. Work in craft progressively alter the material world and every new movement needs to be responsive to new circumstances resulting from the previous action which means that skilled action is dependent on a flexibility in relation to the materials. Following this, learning craft means learning to perceive the material world differently as much as learning to act in new ways – when the students in the studies are occupied with trying to act competently, this acting is intimately dependent on their ability to see and feel competently. As shown in the studies, engaging with material artefacts is both a way of developing and expressing competence in craft. The manifest character of knowing and understanding in textile craft provides participants with concrete resources for monitoring each other's understandings of an on-going mutual activity and facilitate the achievement of a mutual understanding – both in relation to subject competences as well as the understanding of a common current activity. The embodiedness and material outcomes of craft actions – the very aspects associating knowledge in craft with a notion of tacitness – are also aspects that make knowing and understanding in the domain concrete and observable.

The organisation of instructional work in craft is contingent on the manifest character of skills and understandings. In the studies, teachers do not only describe subject matters to students; they recurrently also show, enact and establish competences in and through embodied instructions. As argued by Ingold (2000, p. 354) embodied skills are taught to novices “not by handing on a corpus of representations, or information in the strict sense, but rather by introducing novices into contexts which afford selected opportunities for perception and action and by providing the scaffolding that enables them to make use of these affordances”. Students' understandings of instructions – their ability to follow them – are intimately related to their embodied experiences with tools and materials and these experiences are, in turn, guided and schaffolded by teachers' instructive actions. Teachers' instructions and students' engagement with craft materials are reciprocally related and mutually constitutive in the learning of skills in textile craft. It is in and through embodied experiences of the instructed activities and relevant materials that instructions achieve their local sense and meaning. Skills in craft are in this sense not only learnt from instructions but equally developed by students' interaction with tools and materials.

Swedish summary

I den här avhandlingen analyseras interaktionen mellan lärare och studenter på kurser i textilhantverk som ges inom ramen för lärarutbildningens slöjdinriktning. Avhandlingen fokuserar på hur lärares instruerande handlingar guidar och utvecklar studenters förståelse av och arbete med textilhantverk. Att undervisa någon i hantverkskunskaper medför att göra kroppsliga dimensioner av kunskap kommunicerbara, förståeliga och tillgängliga för någon annan. På samma sätt behöver den som ska lära sig hantverket göra en koppling mellan olika typer av instruktioner och beskrivningar å ena sidan och hantverksspecifika, kroppsbaserade handlingar å andra sidan. Även om de kroppsliga aspekterna bara är en av flera dimensioner av kunskap i hantverk är kroppsbaserade handlingar ändå en utmärkande och nödvändig del för att utföra hantverksarbete. Att följa instruktioner i hantverk innebär på så sätt med nödvändighet att utföra kroppsbaserade handlingsmönster. I fyra empiriska studier undersöks undervisning och instruktioner som syftar till att utveckla hantverkskunskaper hos studenter. Det övergripande syftet med arbetet är att ge en empiriskt grundad förståelse för undervisning och lärande i en domän där kroppsliga dimensioner av kunskap har en framträdande roll.

Avhandlingsarbetet ingår i projektet Kommunikation och lärande i slöjdpraktiker (KOMOLÅR). Tidigare forskning om slöjd domineras av historiska utredningar tillsammans med studier som analyserar berättelser om slöjd medan studier av konkreta slöjdaktiviteter i stor utsträckning saknas. KOMOÄR-projektet har tagit denna brist på empiriska studier av slöjdaktiviteter som utgångspunkt och inom ramen för projektet har slöjdundervisning studerats utifrån konkreta exempel i en rad olika kontexter (e.g. Hasselskog, 2010; Johansson, 2008a, 2008b; Lindberg, 2008; Lindström, 2008; Lindwall & Ekström, 2009). När det gäller lärarutbildningens slöjdinriktning har tidigare studier primärt fokuserat på hur den undervisning som erbjuds på olika sätt påverkar lärarstudenter. Genom att studerar, till exempel, hur genusstrukturer reproduceras (Berge, 1992), hur lärarstudenters undervisningsideologier förändras (Nygren-Landgårds, 2000; Hasselskog, 2000), i vilken utsträckning lärarstudenter anammar lärarutbildares estetiska preferenser (Gulliksen, 2006) och hur nivån på ämneskompetens förändras då utbildningar omorganiserar (Borg, 2007; Holmberg, 2009) reser dessa studier frågor kring konsekvenserna av hur undervisning utformas. De fyra

studier som presenteras här har ett annat fokus; istället för att undersöka utbildningens resultat och verkningar analyseras det interaktiva arbete som utgör lärande och undervisning i slöjdrelaterade kurser på lärarutbildningen med syftet att bidra till förståelsen för hur hantverksundervisning åstadkoms i interaktion mellan lärare och studenter.

Studier av interaktion i slöjdundervisning har tidigare utförts av Johansson (t.ex. 2002, 2006, 2008a) och Illum (t.ex. 2004, 2006). Dessa exceptionella studier utgår från videoinspelningar av slöjd i grundskolan och belyser slöjdens kommunikativa och interaktiva karaktär där verbal interaktion ofta har en nedtonad roll. Olika artefakter så som skisser, modeller och textuella instruktioner har lyfts fram som avgörande för kommunikationen i slöjden (Johansson, 2002). Illum (2004, 2006) undersöker den genuint kroppsliga upplevelsen av att arbeta med slöjdens material och verktyg – vad han har beskrivit som processens dialog. Processens dialog lyfter fram interaktion inte bara mellan människor i slöjd utan också mellan slöjdaren och de materiella artefakter som är del i arbetet. Utifrån en episod där elever lär sig känns igen och bedöma konsistens i arbetet med metall beskriver Johansson och Illum (2009) hur processens dialog är avhängig av lära sig se metallen, att lära sig känna metallen med händerna och genom arbetet med hammaren och att lära sig lyssna på ljuden som genereras då metallen bearbetas på rätt sätt. Detta är enligt Johansson och Illum (2009, s. 78) kompetenser som inte kan förmedlas bara med ord. Med utgångspunkt i ovan nämnda forskningsinriktning undersöker denna avhandling den interaktiva organiseringen av hantverksspecifika praktiker i dess detaljer genom att noggrant analysera både kroppsliga och materiella aspekter av att delta i hantverksundervisning.

De fyra studierna utgår från ett etnometodologiskt förhållningssätt att analysera undervisning och lärande. En viktig utgångspunkt för den typen av studier är hur information och objekt skapas till det de är i och genom sociala handlingar. Etnometodologiska studier beskriver och analyserar den lokala, situerade och interaktiva organiseringen av aktiviteter och gör denna organisering till huvudfokus för det analytiska arbetet – istället för att förklara sociala fenomen i termer av orsak och verkan undersöker etnometodologiska studier själva skapandet av dem (ten Have, 2004). De fyra studierna beskriver undervisning och lärande i textilhantverk i dess detaljer genom att fokusera på de specifika sätt lärare och studenter går till väga för att skapa och genomföra undervisningen. Studiernas övergripande tema är relationen mellan lärares instruerande handlingar och studenters uppvisade förståelse för och kunskaper i textilhantverk: hur görs hantverkskompetenser tillgängliga och möjliga att lära för studenter i och genom lärares instruktiva arbete? Syftet med avhandlingen är att belysa de betingelser som karakteriserar undervisning i domäner där kroppsbaserade handlingar och materiella föremål är centrala och därmed också belysa vill-

koren för lärande och undervisning i sådana domäner. Etnometodologiska studier av undervisning och lärande har tidigare utförts inom en mängd områden (t.ex. Greiffenhagen, 2008; Lindwall & Lymer, 2008; Macbeth 2011). I relation till hantverk och andra domäner som involverar kroppsliga dimensioner av kunskap och förmåga att skapa materiella föremål är undervisning och lärande fortfarande i stor utsträckning outforskat. Arbetet i den här avhandlingen bidrar på så sätt till att utveckla förståelsen för undervisning och lärande i en domän som i mångt och mycket saknar empiriskt grundade analyser och försöker därmed göra kroppsliga dimensioner av kunskaper tillgängliga för analytisk skärskådning.

De empiriska studierna

De fyra studierna åskådliggör och diskuterar undervisning och lärande i textilhantverk genom att undersöka interaktionen mellan lärare och studenter i olika faser av arbetet med ett slöjdföremål. I den första studien analyseras interaktionen kring *ännu-inte-påbörjade-föremål*. Studenterna i studien har precis börjat sitt arbete, deras föremål är planerade och designade men de har ännu inte börjat materialiseras. I studien diskuteras en återkommande svårighet att använda information från en föreläsning i en efterföljande pedagogiska uppgift, eller, annorlunda formulerat, den svårighet som ligger i att relatera generella beskrivningar till specifika exempel. Studien analyserar två studenters arbete med olika men relaterade traditionella svenska broderier. Studenterna har tidigare lyssnat på en föreläsning där läraren beskrivit och exemplifierat dessa broderier men när de ska börja det konkreta arbetet med att brodera uppstår problem. Trots att föreläsningen beskrivit hur uppgiften ska lösas och hur de båda broderierna ser ut – hur de är uppbyggda, vilka mönster som förekommer samt deras skillnader och likheter – har studenterna svårigheter att skilja mellan broderierna och därmed också svårt att påbörja sitt broderande. Istället för att förklara studenternas svårigheter genom att påstå att de kanske inte lyssnat tillräckligt noga eller att ta studenternas perspektiv och påstå att lärarens föreläsning inte gav tillräckligt med information, föreslås det i studien att det är en grundläggande skillnad mellan att lyssna till beskrivningar under en lektion och att lyssna till beskrivningar i relation till en konkret uppgift. I föreläsningen lyssnade studenterna till utförliga beskrivningar av de specifika broderierna, denna information kan sägas ge svar på frågor studenterna ännu inte ställt och erbjuda lösningar till problem de ännu inte upplevt. Innan de påbörjat arbetet med att brodera hade studenterna inte möjlighet att veta vilka specifika delar av föreläsningen som skulle vara centrala för deras arbete med uppgiften. Det var inte förrän de påbörjade arbetet med de konkreta broderierna som de insåg viken infor-

mation de behövde för att kunna konstruera de två olika broderierna och därmed lösa uppgiften.

I studie II och III analyseras lärande och undervisning i relation till *föremål-under-utveckling*. I dessa studier har arbetet med föremålen påbörjats och de har börjat ta en materiel form. I studie II undersöks de för hantverksundervisning utmärkande instruktioner där lärare fysiskt guidar studenterna i deras arbete. Lärare i textilhantverk använder ofta sina händer för att ledsaga och stödja nybörjares rörelser i syfte lära dem specifika hantverkstekniker – lärare förflyttar nybörjares händer i hantverksspecifika mönster och styr deras material och verktyg. Denna typ av kroppslig undervisning är inte bara synlig och observerbar för den som ska lära sig utan också möjlig att förnimma som haptiska och kinestetiska upplevelser. Att utföra hantverksrörelser tillsammans med en erfaren hantverkare ger studenterna en kroppslig förstahandsupplevelse av de relevanta rörelserna och dessa fysiska undervisningshandlingar gör hantverksskunkaper tillgängliga för studenterna som kroppsliga förståelser av rörelse och interaktion med material och verktyg. Lärares fysiska guidning av studenters händer och verktyg gör frågor kring agens aktuella – vem är det som egentligen utför rörelserna i fall liknande de som beskrivits ovan? Hantverkets kroppsliga karaktär och det faktum att hantverksaktiviteter resulterar i konkreta och materiella föremål, till skillnad från till exempel matematik eller fysik, gör det möjligt för en lärare att faktiskt utföra handlingar i studentens ställe – att sticka en maska åt någon kan kontrasteras med att förstå Newtons lag åt någon. Syftet med lärares handlingar är dock inte att göra något åt studenterna eller att hjälpa dem att färdigställa sina föremål: även om läraren är aktivt involverad i att ledsaga studentens händer och verktyg genom att utföra rörelserna tillsammans med studenten syftar detta ledsagande primärt till att *lära* studenten hantverk och inte till att skapa hantverksföremål.

I studie III undersöks den interaktiva relationen mellan instruktioner och att följa instruktioner i arbetet med luftmaskevirkning. I arbetet med att lära sig virka luftmaskor blir studenters förståelse och kompetens tydliga och observerbara i och genom deras försök att virka maskor. Detta ger läraren möjlighet att bevittna studenternas gradvisa utveckling av virk-kompetens och deras specifika problem som uppstår under vägen. Detta innebär i sin tur att undervisningen i stor utsträckning kan organiseras som korrigeringar av faktiska problem. Hantverkets kroppsliga och materiella dimensioner gör det möjligt för lärare och studenter att succesivt anpassa sina handlingar till varandra. I det analyserade exemplet kan man notera att lärarens instruktioner och korrigeringar primärt adresserar specifika positioner och rörelser utan sätta dessa rörelser i ett större sammanhang och beskriva meningsfulla handlingar. Annorlunda uttryckt beskriver lärarens instruktioner först och främst de beteenderelaterade dimensionerna av virkning utan att relatera dem till

deras specifika syften i själva virkandet. I aktiviteter som i stor utsträckning utgår från kroppsliga handlingar är det dock möjligt att hitta dessa syften utan att får dem de förklarade för sig – när lärarens beskrivningar av de kroppsliga rörelserna följs på ett korrekt sätt blir de meningsfulla i och med att de underlättar utförandet av de virkspecifika handlingarna.

I den fjärde studien är föremålet redan färdigt och analysen fokuserar lärande och undervisning i relation till *föremål-som-fullkomliga*. I studien analyseras en lektion i att bedöma hantverksföremål. Ett sätt att organisera den här typen av undervisning är genom student-bedömningar där studenter bedömer varandras föremål. Inom ramen för lärarutbildningen kan student-bedömningar användas inte bara i undervisning av ämneskunskaper utan också som en pedagogisk övning i bedömningskompetenser. Under student-bedömningar deltar studenter i de pedagogiska aktiviteterna under villkor som delvis skiljer sig från annan klassrumsinteraktion: samtidigt som de deltar i undervisningen som studenter förväntas de samtidigt undervisa och bedöma sina med-studenter – aktiviteter som vanligtvis associeras med lärare. Studier av den här typen av undervisningsaktiviteter sätter fokus på deltagande och interaktiva positioner i aktiviteterna: i vilken utsträckning är det möjligt för studenterna att delta i aktiviteterna i positionen som lärare och på vilka sätt är de orienterade mot sina positioner som studenter? Analysen visar på en flerdimensionell aktivitet med både dynamiska och statiska komponenter. En interaktiv organisering med skiftande deltagarramar och föränderliga interaktiva positioner samexisterar med mer stabila mönster associerade med undervisning och klassrumsinteraktion. Analysen visar på begränsningar i möjligheterna att skapa autentiska professionsrelaterade aktiviteter i ett klassrum också i sådana fall där den aktivitet som återskapas är relaterad till undervisning. Den övergripande organiseringen av klassrumsinteraktion med specifika rättigheter och ansvar som tilldelas lärare respektive studenter verkar svåra att åsidosätta. Detta skulle kunna ses som ett problem i ljuset av diskussioner om lärande som något alltigenom situerat där kunskapsöverföring mellan domäner ifrågasätts. Samtidigt kan de unika förutsättningar som skapas då professionella uppgifter utförs i ett klassrum vara till fördel genom att de möjliggör flera olika sätt att delta i undervisningen – både för lärare och studenter. Genom att återskapa vissa delar av en professionell aktivitet samtidigt som en institutionell inramning behålls ges studenterna möjligheter till konkret övning samtidigt som de får guidning av en lärare som också kan erbjuda professionella exempel på hur uppgiften kan lösas.

Diskussion

I hantverk är förståelse intimt sammankopplat med förmågan att utföra hantverksrelevanta handlingar och att producera hantverksspecifika föremål. Eftersom studenter i hantverkskurser inte bara lyssnar på en lärare utan också försöker utföra de handlingar och moment läraren beskriver blir studenternas förståelse för undervisningsämnet tillgängligt för läraren i och genom deras ansträngningar att utföra de relevanta handlingarna (jmf. Keevallik, 2010, s. 407). Även om alla sociala aktiviteter är kroppsliga, är det inte inom alla områden som följandet instruktioner innebär att specifika kroppsliga rörelser utförs. Detta är en faktor som skiljer undervisning i hantverk från domäner där kroppsliga dimensioner av kunskap är mindre framträdande eller till och med irrelevanta. Avhandlingens resultat kretsar primärt kring hur det faktum att kunskap och förståelse i hantverk har en manifest karaktär formar hur interaktionen mellan lärare och studenter organiseras och på vilket sätt deltagarna orienterar sig mot kompetenser och förståelse i undervisningsaktiviteter.

I en domän där undervisning i stora delar syftar till att utveckla studenters förmågor att utföra särskilda kroppsrörelser organiseras undervisningsrelevanta handlingar – som till exempel uppvisandet av problem, förfrågningar, korrigeringar och direktiv – återkommande med och genom kroppen. I hantverksundervisning förklaras inte bara kunskap utan den visas och etableras också genom kroppsbaserade handlingar. Att utföra demonstrationer kan, till exempel, användas som en viktig resurs i undervisningen. I sådana demonstrationer utför en lärare de avsedda handlingarna framför studenterna som sedan försöker imitera det läraren visat. Eftersom en demonstration är uppbyggd kring ett konkret utförande av de åsyftade handlingarna finns alla de relevanta steg och procedurer som handlingen består av också tillgängliga för studenterna att. Detta innebär dock inte att det faktum att någon tagit del av en demonstration med nödvändighet möjliggör att det demonstrationen visade automatiskt kan återskapas. I studie II och III diskuteras studenters svårigheter att imitera en lärares handlingar utifrån en demonstration i relation till möjligheten att skilja väsentliga och nödvändiga handlingar från valbara och irrelevanta sådana. Möjligheten att se ett hantverksspecifikt handlande i en demonstration är beroende av egna kroppsliga erfarenheter av att utföra dessa handlingar i samspel med materiella artefakter.

Undervisning i hantverk syftar – om inte omedelbart så i förlängningen – till att möjliggöra skapandet av materiella föremål. Att hitta en koppling mellan å ena sidan instruktioner och beskrivningar, och å andra sidan ett föremål under utveckling kan visa sig vara komplicerat. När studenter förväntas att inte bara lyssna till en lärare utan också använda det läraren säger för att skapa ett materiellt föremål krävs att studenterna har mer än en generell förståelse av undervisningsämnet – för att kunna använda instruktioner i

arbetet med konkreta föremål krävs en specifik förståelse av hur instruktionerna ska förvandlas till kroppsliga rörelser som resulterar i det tänkta föremålet. När ett föremål väl börjat materialiseras, relateras ofta lärares undervisning till detta föremål. När instruktioner syftar till ett konkret och materiellt resultat kan instruktioner jämföras och utvärderas i relation till ett föremål och dess utveckling: i och med att kompetens relateras till ett gemensamt konkret föremål kan dessa kunskaper också göras tillgängliga och begripliga för någon som ännu inte tillskansat sig de relevanta kompetenserna. Instruktioner och beskrivningar som inledningsvis endast vagt kan förstås ges gradvis en mer specifik betydelse när de relateras till ett konkret föremål och ses i förhållande till arbetet med att skapa detta föremål (Lymer, 2010). I de fyra studierna löses svårigheter och problem i undervisningen med hjälp av ett konkret föremål: skillnaden mellan olika estetiska uttryck, hur bedömningar företrädesvis formuleras och hur specifika tekniker utförs görs i de analyserade episoderna tillgängliga för studenterna i och genom hänvisningar till materiella föremål.

Kunskapers manifesta karaktär i textilhantverk ger inte bara specifika möjligheter att organisera undervisning utan är också en resurs för lärare att bedöma och få tillgång till studenternas förståelse av undervisningsämnet. På liknande sätt som arkeologistuder (Goodwin, 2003a, 2003b), blivande tandläkare (Hindmarsh, Reynolds, & Dunne, 2011), dansare (Keevallik, 2010) och läkarstudenter (Hindmarsh & Pilnick, 2007) visar sin förståelse och kompetens genom kroppsliga handlingar i en materiell värld, gör också hantverksstudenter sin förståelse publik och tillgänglig i och genom sitt arbete med att omforma material till specifika hantverksföremål. I många ämnen kan det vara svårt för lärare att följa individuella studenters lärande och förståelse. Om undervisningen är organiserad kring föreläsningar finns ofta inte något konkreta stöd för läraren att uttala sig om studenternas förståelse av undervisning: bedömningen av vad studenterna förstått och lärt sig hanteras istället i efterföljande prov och examinationer. Lärare är därmed vanligtvis beroende av studenter egna uttalanden om huruvida de har förstått något och de lägger också tid på att försöka avgöra om studenterna verkligen förstått det de säger sig ha förstått (Lindwall & Lymer, 2011). I hantverk, däremot, gör den täta sammankopplingen mellan kunskaper och konkreta handlingar studenternas förståelse omedelbart tillgängliga läraren; hantverkets materiella och kroppsliga karaktär ger läraren tillgång till *uppvissad förståelse* och inte bara *påstådd förståelse* (Sacks, 1992). Som tidigare visats i relation till, till exempel, tandläkarutbildning (Hindmarsh, Reynolds, & Dunne, 2011) kan studenters handlingar inom områden där kunskap har en manifest karaktär omedelbart bekräfta eller motsäga studenters påstådda förståelse och därmed ge läraren anledning att ifrågasätta studenternas uttalanden. Hantverkets materiella och kroppsliga karaktär blottar hantverkarens

förståelse för och i den aktuella aktiviteten och gör det svårt att påstå sig ha kunskaper utan att också kunna uppvisa dessa kunskaper. Även om hantverkskunskaper är långt ifrån en användning av mekaniska handgrepp (Ingold, 2000, s. 291), finns ofta en överensstämmelse mellan ett kompetens handlande och en kompetent förståelse. Detta skiljer sig från exempelvis fysik. Lindwall och Lymer (2011) menar att även om studenter i fysik kan utföra en uppgift innebär inte detta nödvändigtvis att de också har förstått uppgiften och det kunskapsområde den är tänkt att behandla. I hantverk däremot, är kunskap och förståelse i mångt och mycket sammanvävda med möjligheten att utföra konkreta, kroppsliga handlingar – att förstå hantverk innebär att också kunna utföra hantverkshandlingar. Även om det är möjligt att utföra en rörelse korrekt av en slump (jmf. studie III), innebär ofta en korrekt utförd handling också att någon har tillskansat sig kompetensen.

I hantverksundervisning introduceras studenter gradvis till hantverksspecifika sätt att agera tillsammans med material och redskap. Hantverksarbete förändrar succesivt den materiella världen och varje ny handling måste därmed ta i beaktan de nya villkor som resulterar från tidigare handlingar. Bemästra hantverk handlar med detta resonemang lika mycket om att ta in den materiella omgivning som att kunna agera i den. Denna avhandling belyser och diskuterar instruktiva handlingar och deras relation till studenters agerande och förståelse inom ramen för kurser i textilhantverk. De fyra studierna visar hur lärares undervisning – deras beskrivning, formuleringar och kroppsliga handlingar – vägleder både studenters agerande med material och deras sätt att ta in sin materiella omgivning. Som studierna visat är interaktion med materiella föremål både ett sätt att utveckla och att uttrycka kunskaper och förståelse i hantverk – både för lärare och studenter.

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